PMID- 36228907
OWN - NLM
STAT- MEDLINE
DCOM- 20221017
LR - 20221129
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 107
IP - 4_Suppl
DP - 2022 Oct 11
TI - Evidence-Based Malaria Control and Elimination in the Amazon: Input from
      the International Center of Excellence in Malaria Research Network in
      Peru and Brazil.
PG - 160-167
LID - 10.4269/ajtmh.21-1272 [doi]
AB - Malaria remains endemic in 17 countries in the Americas, where 723,000
      cases were reported in 2019. The majority (> 90%) of the regional malaria
      burden is found within the Amazon Basin, which includes nine countries
      and territories in South America. Locally generated evidence is critical
      to provide information to public health decision makers upon which the
      design of efficient and regionally directed malaria control and
      elimination programs can be built. Plasmodium vivax is the predominant
      malaria parasite in the Amazon Basin. This parasite species appears to be
      more resilient to malaria control strategies worldwide. Asymptomatic
      Plasmodium infections constitute a potentially infectious reservoir that
      is typically missed by routine microscopy-based surveillance and often
      remains untreated. The primary Amazonian malaria vector, Nyssorhynchus
      (formerly Anopheles) darlingi, has changed its behavior to feed and rest
      predominantly outdoors, reducing the efficiency of core vector control
      measures such as indoor residual spraying and distribution of long-
      lasting insecticide-treated bed nets. We review public health
      implications of recent field-based research carried out by the Amazonia
      International Center of Excellence in Malaria Research in Peru and
      Brazil. We discuss the relative role of traditional and novel tools and

      strategies for better malaria control and elimination across
the Amazon,
      including improved diagnostic methods, new anti-relapse
medicines, and
      biological larvicides, and emphasize the need to integrate
research and
      public health policymaking.
FAU - Ferreira, Marcelo U
AU - Ferreira MU
AD - Department of Parasitology, Institute of Biomedical Sciences,
University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Torres, Katherine
AU - Torres K
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Rodriguez-Ferrucci, Hugo
AU - Rodriguez-Ferrucci H
AD - Facultad de Medicina Humana, Universidad Nacional de la
Amazonia Peruana,
      Iquitos, Peru.
FAU - Soto-Calle, Veronica E
AU - Soto-Calle VE
AD - Direccion de Prevencion y Control de Enfermedades Metaxenicas
y Zoonosis,
      Ministerio de Salud, Lima, Peru.
FAU - Pardo, Karim
AU - Pardo K
AD - Universidad de Ciencias Aplicadas and Ejecutiva Adjunta II,
Despacho
      Viceministerial de Salud Publica, Ministerio de Salud, Lima,
Peru.
FAU - Fontoura, Pablo S
AU - Fontoura PS
AD - Coordenacao-Geral de Arboviroses, Secretaria de Vigilancia em
Saude,
      Ministerio da Saude, Brasilia, Brazil.
FAU - Tomko, Sheena S
AU - Tomko SS
AD - Department of Biology, University of Pennsylvania,
Philadelphia,
      Pennsylvania.

FAU - Gazzinelli, Ricardo T
AU - Gazzinelli RT
AD - Instituto de Pesquisas Rene Rachou, Fundacao Oswaldo Cruz, Belo
      Horizonte, Brazil.
AD - Division of Infectious Disease and immunology, Department of Medicine,
      University of Massachusetts Medical School, Worcester, Massachusetts.
AD - Plataforma de Medicina Translacional, Fundacao Oswaldo Cruz, Ribeirao
      Preto, Brazil.
FAU - Conn, Jan E
AU - Conn JE
AD - Department of Biomedical Sciences, School of Public Health, University at
      Albany, State University of New York, Albany, New York.
AD - Wadsworth Center, New York State Department of Health, Albany, New York.
FAU - Castro, Marcia C
AU - Castro MC
AD - Department of Global Health and Population, Harvard T. H. Chan School of
      Public Health, Boston, Massachusetts.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Institute of Tropical Medicine Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal Medicine, Yale
      School of Medicine, New Haven, Connecticut.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Review
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20221011
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Animals
MH - *Anopheles/parasitology
MH - Brazil/epidemiology
MH - Humans
MH - *Malaria/epidemiology/prevention & control

MH - Mosquito Vectors/parasitology
MH - Peru/epidemiology
PMC - PMC9662230
EDAT- 2022/10/14 06:00
MHDA- 2022/10/18 06:00
CRDT- 2022/10/13 19:36
PHST- 2021/12/08 00:00 [received]
PHST- 2022/03/15 00:00 [accepted]
PHST- 2022/10/13 19:36 [entrez]
PHST- 2022/10/14 06:00 [pubmed]
PHST- 2022/10/18 06:00 [medline]
AID - 10.4269/ajtmh.21-1272 [doi]
PST - epublish
SO - Am J Trop Med Hyg. 2022 Oct 11;107(4_Suppl):160-167. doi:
      10.4269/ajtmh.21-1272. Print 2022 Oct 11.

PMID- 36228921
OWN - NLM
STAT- MEDLINE
DCOM- 20221017
LR - 20221129
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 107
IP - 4_Suppl
DP - 2022 Oct 11
TI - Malaria Resilience in South America: Epidemiology, Vector
Biology, and
      Immunology Insights from the Amazonian International Center of
Excellence
      in Malaria Research Network in Peru and Brazil.
PG - 168-181
LID - 10.4269/ajtmh.22-0127 [doi]
AB - The 1990s saw the rapid reemergence of malaria in Amazonia,
where it
      remains an important public health priority in South America.
The
      Amazonian International Center of Excellence in Malaria
Research (ICEMR)
      was designed to take a multidisciplinary approach toward
identifying
      novel malaria control and elimination strategies. Based on
geographically
      and epidemiologically distinct sites in the Northeastern
Peruvian and
      Western Brazilian Amazon regions, synergistic projects
integrate malaria
      epidemiology, vector biology, and immunology. The Amazonian
ICEMR's
      overarching goal is to understand how human behavior and other
      sociodemographic features of human reservoirs of transmission-
      predominantly asymptomatically parasitemic people-interact
with the major
      Amazonian malaria vector, Nyssorhynchus (formerly Anopheles)

darlingi,
      and with human immune responses to maintain malaria resilience and
      continued endemicity in a hypoendemic setting. Here, we will review
      Amazonian ICEMR's achievements on the synergies among malaria
      epidemiology, Plasmodium-vector interactions, and immune response, and
      how those provide a roadmap for further research, and, most importantly,
      point toward how to achieve malaria control and elimination in the
      Americas.
FAU - Torres, Katherine
AU - Torres K
AD - Institute of Tropical Medicine Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Ferreira, Marcelo U
AU - Ferreira MU
AD - Department of Parasitology, Institute of Biomedical Sciences, University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Castro, Marcia C
AU - Castro MC
AD - Department of Global Health and Population, Harvard T. H. Chan School of
      Public Health, Boston, Massachusetts.
FAU - Escalante, Ananias A
AU - Escalante AA
AD - Department of Biology and Institute for Genomics and Evolutionary
      Medicine, Temple University, Philadelphia, Pennsylvania.
FAU - Conn, Jan E
AU - Conn JE
AD - Department of Biomedical Sciences, School of Public Health, University at
      Albany, State University of New York, Albany, New York.
AD - Wadsworth Center, New York State Department of Health, Albany, New York.
FAU - Villasis, Elizabeth
AU - Villasis E
AD - Institute of Tropical Medicine Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - da Silva Araujo, Maisa
AU - da Silva Araujo M
AD - Instituto de Pesquisas Rene Rachou, Fundacao Oswaldo Cruz,

Belo
      Horizonte, Brazil.
FAU - Almeida, Gregorio
AU - Almeida G
AD - Instituto de Pesquisas Rene Rachou, Fundacao Oswaldo Cruz,
Belo
      Horizonte, Brazil.
FAU - Rodrigues, Priscila T
AU - Rodrigues PT
AD - Department of Parasitology, Institute of Biomedical Sciences,
University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Corder, Rodrigo M
AU - Corder RM
AD - Department of Parasitology, Institute of Biomedical Sciences,
University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Fernandes, Anderson R J
AU - Fernandes ARJ
AD - Department of Parasitology, Institute of Biomedical Sciences,
University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Calil, Priscila R
AU - Calil PR
AD - Department of Parasitology, Institute of Biomedical Sciences,
University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Ladeia, Winni A
AU - Ladeia WA
AD - Department of Parasitology, Institute of Biomedical Sciences,
University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Garcia-Castillo, Stefano S
AU - Garcia-Castillo SS
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Gomez, Joaquin
AU - Gomez J
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - do Valle Antonelli, Lis Ribeiro
AU - do Valle Antonelli LR
AD - Instituto de Pesquisas Rene Rachou, Fundacao Oswaldo Cruz,
Belo
      Horizonte, Brazil.
FAU - Gazzinelli, Ricardo T
AU - Gazzinelli RT
AD - Instituto de Pesquisas Rene Rachou, Fundacao Oswaldo Cruz,
Belo
      Horizonte, Brazil.
AD - Division of Infectious Disease and Immunology, Department of
Medicine,

      University of Massachusetts Medical School, Worcester,
Massachusetts.
FAU - Golenbock, Douglas T
AU - Golenbock DT
AD - Division of Infectious Disease and Immunology, Department of
Medicine,
      University of Massachusetts Medical School, Worcester,
Massachusetts.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal
Medicine, Yale
      School of Medicine, New Haven, Connecticut.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
PT - Research Support, N.I.H., Extramural
DEP - 20221011
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Animals
MH - *Anopheles/physiology
MH - Biology
MH - Brazil/epidemiology
MH - Humans
MH - *Malaria/epidemiology/prevention & control
MH - Mosquito Vectors/physiology
MH - Peru/epidemiology
PMC - PMC9662219
EDAT- 2022/10/14 06:00
MHDA- 2022/10/18 06:00

CRDT- 2022/10/13 19:36
PHST- 2022/02/15 00:00 [received]
PHST- 2022/05/28 00:00 [accepted]
PHST- 2022/10/13 19:36 [entrez]
PHST- 2022/10/14 06:00 [pubmed]
PHST- 2022/10/18 06:00 [medline]
AID - 10.4269/ajtmh.22-0127 [doi]
PST - epublish
SO - Am J Trop Med Hyg. 2022 Oct 11;107(4_Suppl):168-181. doi:
      10.4269/ajtmh.22-0127. Print 2022 Oct 11.

PMID- 36182962
OWN - NLM
STAT- MEDLINE
DCOM- 20221004
LR - 20221130
IS - 2045-2322 (Electronic)
IS - 2045-2322 (Linking)
VI - 12
IP - 1
DP - 2022 Oct 1
TI - Drug resistance and population structure of Plasmodium
falciparum and
      Plasmodium vivax in the Peruvian Amazon.
PG - 16474
LID - 10.1038/s41598-022-21028-3 [doi]
AB - Malaria is a major health problem in Peru despite substantial
progress
      achieved by the ongoing malaria elimination program. This
study explored
      the population genetics of 63 Plasmodium falciparum and 170 P.
vivax
      cases collected in the Peruvian Amazon Basin between 2015 and
2019.
      Microscopy and PCR were used for malaria detection and
positive samples
      were genotyped at neutral and drug resistance-associated
regions. The P.
      falciparum population exhibited a low nucleotide diversity (pi
= 0.02)
      whereas the P. vivax population presented a higher genetic
diversity (pi
      = 0.34). All P. falciparum samples (n = 63) carried
chloroquine (CQ)
      resistant mutations on Pfcrt. Most P. falciparum samples (53
out of 54)
      carried sulfadoxine (SD) resistant mutations on Pfdhfr and
Pfdhps. No
      evidence was found of artemisinin resistance mutations on
kelch13.
      Population structure showed that a single cluster accounted
for 93.4% of
      the P. falciparum samples whereas three clusters were found
for P. vivax.

Our study shows a low genetic diversity for both species with significant differences in genetic sub-structuring. The high prevalence of CQ-resistance mutations could be a result of indirect selection pressures driven by the P. vivax treatment scheme. These results could be useful for public health authorities to safeguard the progress that Peru has achieved towards malaria elimination.

FAU - Villena, Fredy E
AU - Villena FE
AD - Vysnova, Lima, Peru.
FAU - Sanchez, Juan F
AU - Sanchez JF
AD - Department of Parasitology, U.S. Naval Medical Research Unit No. 6 (NAMRU-6), Lima, Peru.
FAU - Nolasco, Oscar
AU - Nolasco O
AD - Instituto de Medicina Tropical Alexander Von Humboldt, Universidad Peruana Cayetano Heredia, Lima, 31, Peru.
FAU - Braga, Greys
AU - Braga G
AD - Department of Parasitology, U.S. Naval Medical Research Unit No. 6 (NAMRU-6), Lima, Peru.
FAU - Ricopa, Leonila
AU - Ricopa L
AD - Vysnova, Lima, Peru.
FAU - Barazorda, Keare
AU - Barazorda K
AD - Vysnova, Lima, Peru.
FAU - Salas, Carola J
AU - Salas CJ
AD - Department of Parasitology, U.S. Naval Medical Research Unit No. 6 (NAMRU-6), Lima, Peru.
FAU - Lucas, Carmen
AU - Lucas C
AD - Department of Parasitology, U.S. Naval Medical Research Unit No. 6 (NAMRU-6), Lima, Peru.
FAU - Lizewski, Stephen E
AU - Lizewski SE
AD - Department of Parasitology, U.S. Naval Medical Research Unit No. 6 (NAMRU-6), Lima, Peru.
FAU - Joya, Christie A

AU - Joya CA
AD - Department of Parasitology, U.S. Naval Medical Research Unit No. 6
      (NAMRU-6), Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander Von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, 31, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, 31, Peru.
FAU - Delgado-Ratto, Christopher
AU - Delgado-Ratto C
AD - Instituto de Medicina Tropical Alexander Von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, 31, Peru.
AD - Malaria Research Group (MaRCH), Global Health Institute, University of
      Antwerp, 2610, Antwerp, Belgium.
FAU - Valdivia, Hugo O
AU - Valdivia HO
AD - Department of Parasitology, U.S. Naval Medical Research Unit No. 6
      (NAMRU-6), Lima, Peru. hugo.o.valdivia.ln@health.mil.
LA - eng
GR - 2D43TW007120-11A1/TW/FIC NIH HHS/United States
GR - U19AI089681/AI/NIAID NIH HHS/United States
GR - 206194/Wellcome Trust/United Kingdom
GR - 090770/Wellcome Trust/United Kingdom
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
PT - Research Support, N.I.H., Extramural
DEP - 20221001
PL - England
TA - Sci Rep
JT - Scientific reports
JID - 101563288
RN - 0 (Antimalarials)
RN - 0 (Artemisinins)
RN - 0 (Nucleotides)
RN - 0 (Protozoan Proteins)
RN - 88463U4SM5 (Sulfadoxine)
RN - 886U3H6UFF (Chloroquine)
SB - IM
MH - *Antimalarials/pharmacology/therapeutic use
MH - *Artemisinins/therapeutic use
MH - Chloroquine/pharmacology/therapeutic use
MH - Drug Resistance/genetics
MH - Humans
MH - *Malaria/drug therapy
MH - *Malaria, Falciparum/drug therapy/epidemiology
MH - *Malaria, Vivax/drug therapy/epidemiology

MH - Nucleotides/therapeutic use
MH - Peru/epidemiology
MH - Plasmodium falciparum/genetics
MH - Plasmodium vivax/genetics
MH - Protozoan Proteins/genetics
MH - Sulfadoxine/therapeutic use
PMC - PMC9526214
EDAT- 2022/10/02 06:00
MHDA- 2022/10/05 06:00
CRDT- 2022/10/01 23:29
PHST- 2022/04/22 00:00 [received]
PHST- 2022/09/21 00:00 [accepted]
PHST- 2022/10/01 23:29 [entrez]
PHST- 2022/10/02 06:00 [pubmed]
PHST- 2022/10/05 06:00 [medline]
AID - 10.1038/s41598-022-21028-3 [doi]
AID - 10.1038/s41598-022-21028-3 [pii]
PST - epublish
SO - Sci Rep. 2022 Oct 1;12(1):16474. doi: 10.1038/
s41598-022-21028-3.

PMID- 36118037
OWN - NLM
STAT- MEDLINE
DCOM- 20220920
LR - 20220920
IS - 2235-2988 (Electronic)
IS - 2235-2988 (Linking)
VI - 12
DP - 2022
TI - Epidemiological characteristics of P. vivax asymptomatic
infections in
      the Peruvian Amazon.
PG - 901423
LID - 10.3389/fcimb.2022.901423 [doi]
AB - Introduction: Herein, we tested the hypothesis that
Asymptomatic P. vivax
      (Pv) infected individuals (Asym) feature different
epidemiological,
      clinical and biochemical characteristics, as well as
hematological
      parameters, potentially predictive of clinical immunity in
comparison to
      symptomatic Pv infected individuals (Sym). Methodology:
Between 2018 -
      2021, we conducted 11 population screenings (PS, Day 0 (D0))
in 13
      different riverine communities around Iquitos city, in the
Peruvian
      Amazon, to identify Pv Sym and Asym individuals. A group of
these
      individuals agreed to participate in a nested case - control
study to
      evaluate biochemical and hematological parameters. Pv Asym

individuals
      did not present common malaria symptoms (fever, headache, and chills),
      had a positive/negative microscopy result, a positive qPCR result,
      reported no history of antimalarial treatment during the last month, and
      were followed-up weekly until Day 21 (D21). Control individuals, had a
      negative malaria microscopy and qPCR result, no history of antimalarial
      treatment or malaria infections during the last three years, and no
      history of comorbidities or chronic infections. Results: From the 2159
      individuals screened during PS, data revealed a low but heterogeneous Pv
      prevalence across the communities (11.4%), where most infections were
      Asym (66.7%) and submicroscopic (82.9%). A total of 29 Asym, 49 Sym, and
      30 control individuals participated in the nested case - control study
      (n=78). Ten of the individuals that were initially Asym at D0,
      experienced malaria symptoms during follow up and therefore, were
      included in the Sym group. 29 individuals remained Asym throughout all
      follow-ups. High levels of eosinophils were found in Asym individuals in
      comparison to Sym and controls. Conclusion: For the first-time, key
      epidemiological, hematological, and biochemical features are reported
      from Pv Asym infections from the Peruvian Amazon. These results should be
      considered for the design and reshaping of malaria control measures as
      the country moves toward malaria elimination.

FAU - Villasis, Elizabeth
AU - Villasis E
AD - Laboratorio de Malaria, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Garcia Castillo, Stefano S
AU - Garcia Castillo SS

AD - Laboratorio de Malaria: Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Guzman, Mitchel
AU - Guzman M
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio ICEMR Amazonia y Enfermedades Emergentes,
Universidad Peruana
      Cayetano Heredia, Iquitos, Peru.
FAU - Torres, Julian
AU - Torres J
AD - Laboratorio ICEMR Amazonia y Enfermedades Emergentes,
Universidad Peruana
      Cayetano Heredia, Iquitos, Peru.
FAU - Gomez, Joaquin
AU - Gomez J
AD - Laboratorio de Malaria: Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Garro, Katherine
AU - Garro K
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Cordova, Ana Maria
AU - Cordova AM
AD - Laboratorio ICEMR Amazonia y Enfermedades Emergentes,
Universidad Peruana
      Cayetano Heredia, Iquitos, Peru.
FAU - Reategui, Carolina
AU - Reategui C
AD - Laboratorio ICEMR Amazonia y Enfermedades Emergentes,
Universidad Peruana
      Cayetano Heredia, Iquitos, Peru.
FAU - Abanto, Caroline
AU - Abanto C
AD - Laboratorio de Malaria: Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph
AU - Vinetz J
AD - Laboratorio ICEMR-Amazonia y Enfermedades Infecciosas
Emergentes,
      Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal

Medicine, Yale
      School of Medicine, New Haven, CT, United States.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio de Malaria: Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Torres, Katherine
AU - Torres K
AD - Laboratorio de Malaria, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20220831
PL - Switzerland
TA - Front Cell Infect Microbiol
JT - Frontiers in cellular and infection microbiology
JID - 101585359
SB - IM
MH - Asymptomatic Infections/epidemiology
MH - Humans
MH - *Malaria
MH - *Malaria, Vivax/epidemiology
MH - Peru/epidemiology
MH - Prevalence
PMC - PMC9471197
OTO - NOTNLM
OT - P. vivax
OT - asymptomatic
OT - biochemical
OT - hematological
OT - infection
OT - parameters
OT - parasitemia
COIS- This study received funding from the World Bank Group. The funder was not
      involved in the study design, collection, analysis, interpretation of
      data, the writing of this article or the decision to submit it for

publication. The authors declare that the research was conducted in the
absence of any commercial or financial relationships that could be
construed as a potential conflict of interest.
EDAT- 2022/09/20 06:00
MHDA- 2022/09/21 06:00
CRDT- 2022/09/19 04:03
PHST- 2022/03/21 00:00 [received]
PHST- 2022/07/26 00:00 [accepted]
PHST- 2022/09/19 04:03 [entrez]
PHST- 2022/09/20 06:00 [pubmed]
PHST- 2022/09/21 06:00 [medline]
AID - 10.3389/fcimb.2022.901423 [doi]
PST - epublish
SO - Front Cell Infect Microbiol. 2022 Aug 31;12:901423. doi:
10.3389/fcimb.2022.901423. eCollection 2022.

PMID- 36017364
OWN - NLM
STAT- MEDLINE
DCOM- 20220829
LR - 20230131
IS - 2235-2988 (Electronic)
IS - 2235-2988 (Linking)
VI - 12
DP - 2022
TI - Assessment of IgG3 as a serological exposure marker for Plasmodium vivax
in areas with moderate-high malaria transmission intensity.
PG - 950909
LID - 10.3389/fcimb.2022.950909 [doi]
AB - A more sensitive surveillance tool is needed to identify Plasmodium vivax
infections for treatment and to accelerate malaria elimination efforts.
To address this challenge, our laboratory has developed an eight-antigen
panel that detects total IgG as serological markers of P. vivax exposure
within the prior 9 months. The value of these markers has been
established for use in areas with low transmission. In moderate-high
transmission areas, there is evidence that total IgG is more long-lived
than in areas with low transmission, resulting in poorer performance of
these markers in these settings. Antibodies that are shorter-lived may be
better markers of recent infection for use in moderate-high transmission
areas. Using a multiplex assay, the antibody temporal kinetics of total
IgG, IgG1, IgG3, and IgM against 29 P. vivax antigens were

measured over
      36 weeks following asymptomatic P. vivax infection in Papua New Guinean
      children (n = 31), from an area with moderate-high transmission
      intensity. IgG3 declined faster to background than total IgG, IgG1, and
      IgM. Based on these kinetics, IgG3 performance was then assessed for
      classifying recent exposure in a cohort of Peruvian individuals (n = 590;
      age 3-85 years) from an area of moderate transmission intensity. Using
      antibody responses against individual antigens, the highest performance
      of IgG3 in classifying recent P. vivax infections in the prior 9 months
      was to one of the Pv-fam-a proteins assessed (PVX_125728) (AUC = 0.764).
      Surprisingly, total IgG was overall a better marker of recent P. vivax
      infection, with the highest individual classification performance to
      RBP2b1986-2653 (PVX_094255) (AUC = 0.838). To understand the acquisition
      of IgG3 in this Peruvian cohort, relevant epidemiological factors were
      explored using a regression model. IgG3 levels were positively associated
      with increasing age, living in an area with (relatively) higher
      transmission intensity, and having three or more PCR-detected blood-stage
      P. vivax infections within the prior 13 months. Overall, we found that
      IgG3 did not have high accuracy for detecting recent exposure to P. vivax
      in the Peruvian cohort, with our data suggesting that this is due to the
      high levels of prior exposure required to acquire high IgG3 antibody
      levels.

FAU - Tayipto, Yanie
AU - Tayipto Y
AD - Population Health and Immunity Division, Walter and Eliza Hall Institute
      of Medical Research, Melbourne, VIC, Australia.
AD - Department of Medical Biology, University of Melbourne, Melbourne, VIC,
      Australia.

FAU - Rosado, Jason
AU - Rosado J
AD - Unite Malaria: Parasites et Hotes, Departement Parasites et Insectes
      Vecteurs, Institut Pasteur, Paris, France.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio International Centers of Excellence for Malaria Research
      (ICEMR)-Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - White, Michael T
AU - White MT
AD - Unite Malaria: Parasites et Hotes, Departement Parasites et Insectes
      Vecteurs, Institut Pasteur, Paris, France.
FAU - Kiniboro, Benson
AU - Kiniboro B
AD - Vector Borne Disease Unit, Papua New Guinea Institute of Medical
      Research, Goroka, Papua New Guinea.
FAU - Healer, Julie
AU - Healer J
AD - Population Health and Immunity Division, Walter and Eliza Hall Institute
      of Medical Research, Melbourne, VIC, Australia.
FAU - Opi, D Herbert
AU - Opi DH
AD - Life Sciences, Burnet Institute, Melbourne, VIC, Australia.
AD - Department of Immunology and Pathology, Monash University, Melbourne,
      VIC, Australia.
AD - Department of Medicine, The Doherty Institute, The University of
      Melbourne, Melbourne, VIC, Australia.
FAU - Beeson, James G
AU - Beeson JG
AD - Life Sciences, Burnet Institute, Melbourne, VIC, Australia.
AD - Department of Immunology and Pathology, Monash University, Melbourne,
      VIC, Australia.
AD - Department of Medicine, The Doherty Institute, The University of
      Melbourne, Melbourne, VIC, Australia.
AD - Department of Microbiology and Central Clinical School, Monash
      University, Clayton, VIC, Australia.
FAU - Takashima, Eizo
AU - Takashima E
AD - Proteo-Science Center, Ehime University, Matsuyama, Japan.
FAU - Tsuboi, Takafumi
AU - Tsuboi T
AD - Proteo-Science Center, Ehime University, Matsuyama, Japan.

FAU - Harbers, Matthias
AU - Harbers M
AD - CellFree Sciences Co., Ltd., Yokohama, Japan.
AD - RIKEN Centre for Integrative Medical Sciences, Yokohama,
Japan.
FAU - Robinson, Leanne
AU - Robinson L
AD - Population Health and Immunity Division, Walter and Eliza Hall
Institute
      of Medical Research, Melbourne, VIC, Australia.
AD - Life Sciences, Burnet Institute, Melbourne, VIC, Australia.
FAU - Mueller, Ivo
AU - Mueller I
AD - Population Health and Immunity Division, Walter and Eliza Hall
Institute
      of Medical Research, Melbourne, VIC, Australia.
AD - Department of Medical Biology, University of Melbourne,
Melbourne, VIC,
      Australia.
FAU - Longley, Rhea J
AU - Longley RJ
AD - Population Health and Immunity Division, Walter and Eliza Hall
Institute
      of Medical Research, Melbourne, VIC, Australia.
AD - Department of Medical Biology, University of Melbourne,
Melbourne, VIC,
      Australia.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089686/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20220809
PL - Switzerland
TA - Front Cell Infect Microbiol
JT - Frontiers in cellular and infection microbiology
JID - 101585359
RN - 0 (Antibodies, Protozoan)
RN - 0 (Biomarkers)
RN - 0 (Immunoglobulin G)
RN - 0 (Immunoglobulin M)
SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Aged, 80 and over
MH - Antibodies, Protozoan
MH - Asymptomatic Infections
MH - Biomarkers
MH - Child
MH - Child, Preschool
MH - Humans
MH - Immunoglobulin G
MH - Immunoglobulin M

MH - *Malaria
MH - *Malaria, Falciparum
MH - *Malaria, Vivax/diagnosis
MH - Middle Aged
MH - Plasmodium falciparum
MH - Plasmodium vivax
MH - Young Adult
PMC - PMC9395743
OTO - NOTNLM
OT - IgG3
OT - Plasmodium vivax
OT - antibody
OT - malaria
OT - malaria elimination
OT - multiplex assay
OT - surveillance
COIS- RL, MW, TT, and IM are inventors on patent PCT/US17/67926 on a system,
      method, apparatus, and diagnostic test for P. vivax. Author MH was
      employed by CellFree Sciences Co., Ltd., Yokohama, Japan. The remaining
      authors declare that the research was conducted in the absence of any
      commercial or financial relationships that could be construed as a
      potential conflict of interest.
EDAT- 2022/08/27 06:00
MHDA- 2022/08/30 06:00
CRDT- 2022/08/26 02:32
PHST- 2022/05/23 00:00 [received]
PHST- 2022/07/15 00:00 [accepted]
PHST- 2022/08/26 02:32 [entrez]
PHST- 2022/08/27 06:00 [pubmed]
PHST- 2022/08/30 06:00 [medline]
AID - 10.3389/fcimb.2022.950909 [doi]
PST - epublish
SO - Front Cell Infect Microbiol. 2022 Aug 9;12:950909. doi:
      10.3389/fcimb.2022.950909. eCollection 2022.

PMID- 35895359
OWN - NLM
STAT- MEDLINE
DCOM- 20220729
LR - 20220802
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 107
IP - 1
DP - 2022 Jul 13
TI - Insights into Plasmodium vivax Asymptomatic Malaria Infections and Direct
      Skin-Feeding Assays to Assess Onward Malaria Transmission in the Amazon.

PG - 154-161
LID - 10.4269/ajtmh.21-1217 [doi]
AB - Understanding the reservoir and infectivity of Plasmodium gametocytes to
      vector mosquitoes is crucial to align strategies aimed at malaria
      transmission elimination. Yet, experimental information is scarce
      regarding the infectivity of Plasmodium vivax for mosquitoes in diverse
      epidemiological settings where the proportion of asymptomatically
      infected individuals varies at a microgeographic scale. We measured the
      transmissibility of clinical and subclinical P. vivax malaria parasite
      carriers to the major mosquito vector in the Amazon Basin, Nyssorhynchus
      darlingi (formerly Anopheles). A total of 105 participants with natural
      P. vivax malaria infection were recruited from a cohort study in Loreto
      Department, Peruvian Amazon. Four of 18 asymptomatic individuals with P.
      vivax positivity by blood smear infected colony-grown Ny. darlingi (22%),
      with 2.6% (19 of 728) mosquitoes infected. In contrast, 77% (44/57) of
      symptomatic participants were infectious to mosquitoes with 51% (890 of
      1,753) mosquitoes infected. Infection intensity was greater in
      symptomatic infections (mean, 17.8 oocysts/mosquito) compared with
      asymptomatic infections (mean, 0.28 oocysts/mosquito), attributed to
      parasitemia/gametocytemia level. Paired experiments (N = 27) using direct
      skin-feeding assays and direct membrane mosquito-feeding assays showed
      that infectivity to mosquitoes was similar for both methods. Longitudinal
      studies with longer follow-up of symptomatic and asymptomatic parasite
      infections are needed to determine the natural variations of disease
      transmissibility.
FAU - Moreno, Marta
AU - Moreno M
AD - Department of Biology, London School of Hygiene and Tropical Medicine,
      London, UK.
FAU - Torres, Katherine
AU - Torres K
AD - Instituto de Medicina Tropical "Alexander von Humboldt,"

Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Tong, Carlos
AU - Tong C
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Garcia Castillo, Stefano S
AU - Garcia Castillo SS
AD - Laboratorio de Malaria, Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Facultad de Salud Publica, Universidad Peruana Cayetano
Heredia, Lima,
      Peru.
FAU - Guedez, Gerson
AU - Guedez G
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Torres, Lutecio
AU - Torres L
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Herrera-Varela, Manuela
AU - Herrera-Varela M
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Guerra, Layne
AU - Guerra L
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AD - Instituto de Medicina Tropical "Alexander von Humboldt,"
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y

Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Wong, Daniel
AU - Wong D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Ramirez, Roberson
AU - Ramirez R
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Facultad de Salud Publica, Universidad Peruana Cayetano Heredia, Lima,
      Peru.
FAU - Conn, Jan E
AU - Conn JE
AD - Department of Biomedical Sciences, School of Public Health, University at
      Albany-State University of New York, Albany, New York.
AD - Wadsworth Center, New York State Department of Health, Albany, New York.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical "Alexander von Humboldt," Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio de Malaria, Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicina Tropical "Alexander von Humboldt," Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - S Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, California.
AD - Section of Infectious Diseases, Department of Internal Medicine, Yale
      School of Medicine, New Haven, Connecticut.
LA - eng

GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - R01 AI110112/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20220613
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Animals
MH - *Anopheles/parasitology
MH - Asymptomatic Infections/epidemiology
MH - Cohort Studies
MH - Humans
MH - *Malaria
MH - *Malaria, Vivax/parasitology
MH - Mosquito Vectors/parasitology
MH - Plasmodium vivax
PMC - PMC9294676
EDAT- 2022/07/28 06:00
MHDA- 2022/07/30 06:00
CRDT- 2022/07/27 12:33
PMCR- 2023/07/01 00:00
PHST- 2021/11/22 00:00 [received]
PHST- 2022/02/24 00:00 [accepted]
PHST- 2023/07/01 00:00 [pmc-release]
PHST- 2022/07/27 12:33 [entrez]
PHST- 2022/07/28 06:00 [pubmed]
PHST- 2022/07/30 06:00 [medline]
AID - 10.4269/ajtmh.21-1217 [doi]
PST - epublish
SO - Am J Trop Med Hyg. 2022 Jun 13;107(1):154-161. doi:
      10.4269/ajtmh.21-1217. Print 2022 Jul 13.

PMID- 35533146
OWN - NLM
STAT- MEDLINE
DCOM- 20220523
LR - 20230131
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 16
IP - 5
DP - 2022 May
TI - Malaria transmission structure in the Peruvian Amazon through
antibody
      signatures to Plasmodium vivax.
PG - e0010415
LID - 10.1371/journal.pntd.0010415 [doi]
AB - BACKGROUND: The landscape of malaria transmission in the
Peruvian Amazon
      is temporally and spatially heterogeneous, presenting
different micro-

geographies with particular epidemiologies. Most cases are asymptomatic and escape routine malaria surveillance based on light microscopy (LM). Following the implementation of control programs in this region, new approaches to stratify transmission and direct efforts at an individual and community level are needed. Antibody responses to serological exposure markers (SEM) to Plasmodium vivax have proven diagnostic performance to identify people exposed in the previous 9 months. METHODOLOGY: We measured antibody responses against 8 SEM to identify recently exposed people and determine the transmission dynamics of P. vivax in peri-urban (Iquitos) and riverine (Mazan) communities of Loreto, communities that have seen significant recent reductions in malaria transmission. Socio-demographic, geo-reference, LM and qPCR diagnosis data were collected from two cross-sectional surveys. Spatial and multilevel analyses were implemented to describe the distribution of seropositive cases and the risk factors associated with exposure to P. vivax. PRINCIPAL FINDINGS: Low local transmission was detected by qPCR in both Iquitos (5.3%) and Mazan (2.7%); however, seroprevalence indicated a higher level of (past) exposure to P. vivax in Mazan (56.5%) than Iquitos (38.2%). Age and being male were factors associated with high odds of being seropositive in both sites. Higher antibody levels were found in individuals >15 years old. The persistence of long-lived antibodies in these individuals could overestimate the detection of recent exposure. Antibody levels in younger populations (<15 years old) could be a better indicator of recent exposure to P. vivax. CONCLUSIONS: The large number of current and past infections detected by SEMs allows for detailed local epidemiological analyses, in contrast to data from qPCR prevalence surveys which did not produce statistically significant associations.

      Serological surveillance will be increasingly important in the
Peruvian
      Amazon as malaria transmission is reduced by continued control
and
      elimination efforts.
FAU - Rosado, Jason
AU - Rosado J
AUID- ORCID: 0000-0003-4834-2088
AD - Unit of Malaria: Parasites and hosts, Institut Pasteur, Paris,
France.
AD - Sorbonne Universite, ED 393, Paris, France.
AD - Infectious Disease Epidemiology and Analytics G5 Unit,
Institut Pasteur,
      Paris, France.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - School of Public Health, University of California San Diego,
La Jolla,
      California, United States of America.
AD - Health Innovation Laboratory, Instituto de Medicina Tropical
Alexander
      von Humboldt, Universidad Peruana Cayetano Heredia, Peru.
FAU - Nolasco, Oscar
AU - Nolasco O
AUID- ORCID: 0000-0002-5672-5516
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Garro, Katherine
AU - Garro K
AUID- ORCID: 0000-0003-0400-6533
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Rodriguez-Ferruci, Hugo
AU - Rodriguez-Ferruci H
AD - Universidad Nacional de la Amazonia Peruana, Loreto, Peru.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AUID- ORCID: 0000-0003-2662-2142
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Llanos-Cuentas, Alejandro

AU - Llanos-Cuentas A
AUID- ORCID: 0000-0002-7567-5534
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AUID- ORCID: 0000-0001-8344-2004
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal Medicine, Yale
      School of Medicine, New Haven, Connecticut, United States of America.
FAU - Nekkab, Narimane
AU - Nekkab N
AD - Unit of Malaria: Parasites and hosts, Institut Pasteur, Paris, France.
FAU - White, Michael T
AU - White MT
AD - Unit of Malaria: Parasites and hosts, Institut Pasteur, Paris, France.
AD - Infectious Disease Epidemiology and Analytics G5 Unit, Institut Pasteur,
      Paris, France.
FAU - Mueller, Ivo
AU - Mueller I
AD - Unit of Malaria: Parasites and hosts, Institut Pasteur, Paris, France.
AD - Department of Medical Biology, University of Melbourne, Melbourne,
      Australia.
AD - Population Health and Immunity Division, Walter and Eliza Hall Institute
      of Medical Research, Melbourne, Australia.
FAU - Gamboa, Dionicia
AU - Gamboa D
AUID- ORCID: 0000-0002-1420-7729
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y

      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20220509
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - Adolescent
MH - Cross-Sectional Studies
MH - Female
MH - Humans
MH - *Malaria
MH - *Malaria, Falciparum/epidemiology
MH - *Malaria, Vivax/epidemiology
MH - Male
MH - Peru/epidemiology
MH - Plasmodium falciparum
MH - Plasmodium vivax
MH - Prevalence
MH - Seroepidemiologic Studies
PMC - PMC9119515
COIS- I have read the journal's policy and the authors of this
manuscript have
      the following competing interests: MTW and IM are inventors on
patent
      PCT/US17/67926 on a system, method, apparatus and diagnostic
test for
      Plasmodium vivax. No other authors declare a conflict of
interest.
EDAT- 2022/05/10 06:00
MHDA- 2022/05/24 06:00
CRDT- 2022/05/09 13:42
PHST- 2021/09/17 00:00 [received]
PHST- 2022/04/12 00:00 [accepted]
PHST- 2022/05/19 00:00 [revised]
PHST- 2022/05/10 06:00 [pubmed]
PHST- 2022/05/24 06:00 [medline]
PHST- 2022/05/09 13:42 [entrez]
AID - 10.1371/journal.pntd.0010415 [doi]
AID - PNTD-D-21-01381 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2022 May 9;16(5):e0010415. doi:
      10.1371/journal.pntd.0010415. eCollection 2022 May.

PMID- 35663000
OWN - NLM
STAT- PubMed-not-MEDLINE
LR - 20230211
IS - 2667-193X (Electronic)

IS - 2667-193X (Linking)
VI - 9
DP - 2022 May
TI - Relative contribution of low-density and asymptomatic infections to
      Plasmodium vivax transmission in the Amazon: pooled analysis of
      individual participant data from population-based cross-sectional
      surveys.
LID - 100169 [pii]
LID - 10.1016/j.lana.2021.100169 [doi]
AB - Background: Low-density and asymptomatic Plasmodium vivax infections
      remain largely undetected and untreated and may contribute significantly
      to malaria transmission in the Amazon. Methods: We analysed individual
      participant data from population-based surveys that measured P vivax
      prevalence by microscopy and polymerase chain reaction (PCR) between 2002
      and 2015 and modelled the relationship between parasite density and
      infectiousness to vectors using membrane feeding assay data. We estimated
      the proportion of sub-patent (i.e., missed by microscopy) and
      asymptomatic P vivax infections and examined how parasite density relates
      to clinical manifestations and mosquito infection in Amazonian settings.
      Findings: We pooled 24,986 observations from six sites in Brazil and
      Peru. P vivax was detected in 6.8% and 2.1% of them by PCR and
      microscopy, respectively. 58.5% to 92.6% of P vivax infections were
      asymptomatic and 61.2% to 96.3% were sub-patent across study sites. P
      vivax density thresholds associated with clinical symptoms were one order
      of magnitude higher in children than in adults. We estimate that sub-
      patent parasite carriers are minimally infectious and contribute 12.7% to
      24.9% of the community-wide P vivax transmission, while asymptomatic
      carriers are the source of 28.2% to 79.2% of mosquito infections.
      Interpretation: Asymptomatic P vivax carriers constitute a vast
      infectious reservoir that, if targeted by malaria elimination strategies,
      could substantially reduce malaria transmission in the Amazon. Infected

      children may remain asymptomatic despite high parasite densities that
      elicit clinical manifestations in adults. Funding: US National Institutes
      of Health, Fundacao de Amparo a Pesquisa do Estado de Sao Paulo, and
      Belgium Development Cooperation.
FAU - Ferreira, Marcelo U
AU - Ferreira MU
AD - Department of Parasitology, Institute of Biomedical Sciences, University
      of Sao Paulo, Sao Paulo, Brazil.
AD - Global Health and Tropical Medicine, Institute of Hygiene and Tropical
      Medicine, Nova University of Lisbon, Lisbon, Portugal.
FAU - Corder, Rodrigo M
AU - Corder RM
AD - Department of Parasitology, Institute of Biomedical Sciences, University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Johansen, Igor C
AU - Johansen IC
AD - Department of Parasitology, Institute of Biomedical Sciences, University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Kattenberg, Johanna H
AU - Kattenberg JH
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Moreno, Marta
AU - Moreno M
AD - Department of Infection Biology, London School of Hygiene and Tropical
      Medicine, London, UK.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Institute of Health and Society, Universite catholique de Louvain,
      Brussels, Belgium.
FAU - Ladeia-Andrade, Simone
AU - Ladeia-Andrade S
AD - Laboratory of Parasitic Diseases, Oswaldo Cruz Institute, Fiocruz, Rio de
      Janeiro, Brazil.
FAU - Conn, Jan E
AU - Conn JE
AD - Department of Biomedical Sciences, School of Public Health, University at
      Albany, State University of New York, Albany, NY, USA.
AD - Wadsworth Center, New York State Department of Health, Albany, NY, USA.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A

AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal Medicine, Yale
      School of Medicine, New Haven, CT, USA.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20220105
PL - England
TA - Lancet Reg Health Am
JT - Lancet regional health. Americas
JID - 9918232503006676
PMC - PMC9161731
MID - NIHMS1810344
OTO - NOTNLM
OT - Amazon
OT - Plasmodium vivax
OT - asymptomatic infections
OT - fever threshold
OT - malaria
OT - sub-patent infections
EDAT- 2022/06/07 06:00
MHDA- 2022/06/07 06:01
CRDT- 2022/06/06 13:52
PHST- 2022/06/06 13:52 [entrez]
PHST- 2022/06/07 06:00 [pubmed]
PHST- 2022/06/07 06:01 [medline]
AID - 10.1016/j.lana.2021.100169 [doi]
PST - ppublish
SO - Lancet Reg Health Am. 2022 May;9. doi: 10.1016/

j.lana.2021.100169. Epub
      2022 Jan 5.

PMID- 35346342
OWN - NLM
STAT- MEDLINE
DCOM- 20220330
LR - 20220401
IS - 1756-3305 (Electronic)
IS - 1756-3305 (Linking)
VI - 15
IP - 1
DP - 2022 Mar 28
TI - Nyssorhynchus darlingi genome-wide studies related to
microgeographic
      dispersion and blood-seeking behavior.
PG - 106
LID - 10.1186/s13071-022-05219-5 [doi]
AB - BACKGROUND: In Brazil, malaria is concentrated in the Amazon
Basin, where
      more than 99% of the annual cases are reported. The main goal
of this
      study was to investigate the population structure and genetic
association
      of the biting behavior of Nyssorhynchus (also known as
Anopheles)
      darlingi, the major malaria vector in the Amazon region of
Brazil, using
      low-coverage genomic sequencing data. METHODS: Samples were
collected in
      the municipality of Mancio Lima, Acre state, Brazil between
2016 and
      2017. Different approaches using genotype imputation and no
gene
      imputation for data treatment and low-coverage sequencing
genotyping were
      performed. After the samples were genotyped, population
stratification
      analysis was performed. RESULTS: Weak but statistically
significant
      stratification signatures were identified between
subpopulations
      separated by distances of approximately 2-3 km. Genome-wide
association
      studies (GWAS) were performed to compare indoor/outdoor biting
behavior
      and blood-seeking at dusk/dawn. A statistically significant
association
      was observed between biting behavior and single nucleotide
polymorphism
      (SNP) markers adjacent to the gene associated with cytochrome
P450 (CYP)
      4H14, which is associated with insecticide resistance. A
statistically

      significant association between blood-seeking periodicity and SNP markers
      adjacent to genes associated with the circadian cycle was also observed.
      CONCLUSION: The data presented here suggest that low-coverage whole-
      genome sequencing with adequate processing is a powerful tool to
      genetically characterize vector populations at a microgeographic scale in
      malaria transmission areas, as well as for use in GWAS. Female mosquitoes
      entering houses to take a blood meal may be related to a specific CYP4H14
      allele, and female timing of blood-seeking is related to circadian rhythm
      genes.

FAU - Alvarez, Marcus Vinicius Niz
AU - Alvarez MVN
AD - Sao Paulo State University (UNESP), Botucatu, 18618-689, Brazil.
FAU - Alonso, Diego Peres
AU - Alonso DP
AD - Sao Paulo State University (UNESP), Botucatu, 18618-689, Brazil.
FAU - Kadri, Samir Moura
AU - Kadri SM
AD - Sao Paulo State University (UNESP), Botucatu, 18618-689, Brazil.
FAU - Rufalco-Moutinho, Paulo
AU - Rufalco-Moutinho P
AD - Nucleo de Medicina Tropical, Universidade de Brasilia, Brasilia, Brazil.
FAU - Bernardes, Isabella Ariadne Ferrari
AU - Bernardes IAF
AD - Sao Paulo State University (UNESP), Botucatu, 18618-689, Brazil.
FAU - de Mello, Ana Carolina Florindo
AU - de Mello ACF
AD - Sao Paulo State University (UNESP), Botucatu, 18618-689, Brazil.
FAU - Souto, Ana Carolina
AU - Souto AC
AD - Sao Paulo State University (UNESP), Botucatu, 18618-689, Brazil.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion Y Desarrollo,
      Facultad de Ciencias Y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Facultad de Salud Publica, Universidad Peruana Cayetano

Heredia, Lima,
      Peru.
FAU - Moreno, Marta
AU - Moreno M
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion Y
Desarrollo,
      Facultad de Ciencias Y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Department of Immunology and Infection, London School of
Hygiene and
      Tropical Medicine, London, UK.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion Y
Desarrollo,
      Facultad de Ciencias Y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares Y Moleculares, Facultad de
Ciencias Y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicina Tropical Alexander Von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion Y
Desarrollo,
      Facultad de Ciencias Y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander Von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal
Medicine, Yale
      School of Medicine, New Haven, CT, USA.
FAU - Conn, Jan E
AU - Conn JE
AD - Wadsworth Center, New York State Department of Health, Albany,
NY, USA.
AD - Department of Biomedical Sciences, School of Public Health,
State
      University of New York at Albany, Albany, NY, USA.
FAU - Ribolla, Paulo E M
AU - Ribolla PEM
AUID- ORCID: http://orcid.org/0000-0001-8735-6090
AD - Sao Paulo State University (UNESP), Botucatu, 18618-689,
Brazil.
      p.ribolla@unesp.br.
LA - eng
GR - 201460655/TDR/WHO
GR - D43 TW007120/TW/FIC NIH HHS/United States

GR - 2018/07406-6/FAPESP
GR - U19AI089681/ICEMR (NIH)
PT - Journal Article
DEP - 20220328
PL - England
TA - Parasit Vectors
JT - Parasites & vectors
JID - 101462774
SB - IM
MH - Animals
MH - *Anopheles/genetics
MH - Disease Vectors
MH - Female
MH - Genome-Wide Association Study
MH - *Malaria
MH - Mosquito Vectors/genetics
PMC - PMC8961893
EDAT- 2022/03/30 06:00
MHDA- 2022/03/31 06:00
CRDT- 2022/03/29 05:40
PHST- 2021/09/16 00:00 [received]
PHST- 2022/02/24 00:00 [accepted]
PHST- 2022/03/29 05:40 [entrez]
PHST- 2022/03/30 06:00 [pubmed]
PHST- 2022/03/31 06:00 [medline]
AID - 10.1186/s13071-022-05219-5 [doi]
AID - 10.1186/s13071-022-05219-5 [pii]
PST - epublish
SO - Parasit Vectors. 2022 Mar 28;15(1):106. doi: 10.1186/
s13071-022-05219-5.

PMID- 34290484
OWN - NLM
STAT- PubMed-not-MEDLINE
LR - 20220425
IS - 0971-7196 (Print)
IS - 0971-7196 (Linking)
VI - 45
IP - 2
DP - 2021 Jun
TI - Assessment of Plasmodium antigens and CRP in dried blood spots
with
      multiplex malaria array.
PG - 479-489
LID - 10.1007/s12639-020-01325-2 [doi]
AB - Dried blood spots (DBS) typically prepared on filter papers
are an ideal
      sample type for malaria surveillance by offering easy and
cost-effective
      methods in terms of sample collection, storage, and transport.
The
      objective of this study was to evaluate the applicability of
DBS with a
      commercial multiplex malaria assay, developed to concurrently

measure
      Plasmodium antigens, histidine-rich protein 2 (HRP2),
Plasmodium lactate
      dehydrogenase (pLDH), and a host inflammatory biomarker, C-
reactive
      protein (CRP), in whole blood. The assay conditions were
optimized for
      DBS, and thermal stability for measurement of Plasmodium
antigens and CRP
      in dried blood were determined. Performance of the multiplex
assay on
      matched DBS and whole blood pellet samples was also evaluated
using the
      clinical samples. The results indicate the acceptable
performance in
      multiplex antigen detection using DBS samples. At cutoff
levels for DBS,
      with a diagnostic specificity with a lower 95% confidence
bound > 92%,
      diagnostic sensitivities against polymerase chain reaction
      (PCR)-confirmed malaria for HRP2, Pf LDH, Pv LDH, and Pan LDH
were 93.5%,
      80.4%, 21.3%, and 55.6%, respectively. The half-life of pLDH
was
      significantly less than that of HRP2 in thermal stability
studies.
      Results with DBS samples collected from Peru indicate that the
      uncontrolled storage conditions of DBS can result in
inaccurate reporting
      for infection with P. falciparum parasites with hrp2/3
deletions. With
      careful consideration that minimizing the unfavorable DBS
storage
      environment is essential for ensuring integrity of heat-labile
Plasmodium
      antigens, DBS samples can be used as an alternative to liquid
whole blood
      to detect P. falciparum with hrp2/3 deletions in malaria
surveillance.
      SUPPLEMENTARY INFORMATION: The online version of this article
      (10.1007/s12639-020-01325-2) contains supplementary material,
which is
      available to authorized users.
CI - (c) The Author(s) 2021.
FAU - Jang, Ihn Kyung
AU - Jang IK
AUID- ORCID: 0000-0001-8899-7930
AD - Diagnostics Program, PATH, Seattle, WA USA.grid.415269.d0000
0000 8940
      7771
FAU - Aranda, Sara
AU - Aranda S
AD - Diagnostics Program, PATH, Seattle, WA USA.grid.415269.d0000
0000 8940

      7771
FAU - Barney, Rebecca
AU - Barney R
AD - Diagnostics Program, PATH, Seattle, WA USA.grid.415269.d0000
0000 8940
      7771
FAU - Rashid, Andrew
AU - Rashid A
AD - Diagnostics Program, PATH, Seattle, WA USA.grid.415269.d0000
0000 8940
      7771
FAU - Helwany, Muhammad
AU - Helwany M
AD - Diagnostics Program, PATH, Seattle, WA USA.grid.415269.d0000
0000 8940
      7771
FAU - Rek, John C
AU - Rek JC
AD - Infectious Diseases Research Collaboration, Kampala,
Uganda.grid.463352.5
FAU - Arinaitwe, Emmanuel
AU - Arinaitwe E
AD - Infectious Diseases Research Collaboration, Kampala,
Uganda.grid.463352.5
FAU - Adrama, Harriet
AU - Adrama H
AD - Infectious Diseases Research Collaboration, Kampala,
Uganda.grid.463352.5
FAU - Murphy, Maxwell
AU - Murphy M
AD - Department of Medicine, University of California at San
Francisco, San
      Francisco, CA USA.grid.266102.10000 0001 2297 6811
FAU - Imwong, Mallika
AU - Imwong M
AD - Faculty of Tropical Medicine, Department of Molecular Tropical
Medicine
      and Genetics, Mahidol University, Bangkok,
Thailand.grid.10223.320000
      0004 1937 0490
FAU - Proux, Stephane
AU - Proux S
AD - Faculty of Tropical Medicine, Mahidol-Oxford Tropical Medicine
Research
      Unit, Shoklo Malaria Research Unit, Mahidol University, Mae
Sot,
      Thailand.grid.10223.320000 0004 1937 0490
FAU - Haohankhunnatham, Warat
AU - Haohankhunnatham W
AD - Faculty of Tropical Medicine, Mahidol-Oxford Tropical Medicine
Research
      Unit, Shoklo Malaria Research Unit, Mahidol University, Mae
Sot,
      Thailand.grid.10223.320000 0004 1937 0490

FAU - Ding, Xavier C
AU - Ding XC
AD - The Foundation for Innovative New Diagnostics, Geneva,
      Switzerland.grid.452485.a0000 0001 1507 3147
FAU - Nosten, Francois
AU - Nosten F
AD - Faculty of Tropical Medicine, Mahidol-Oxford Tropical Medicine
Research
      Unit, Shoklo Malaria Research Unit, Mahidol University, Mae
Sot,
      Thailand.grid.10223.320000 0004 1937 0490
AD - Nuffield Department of Medicine, Centre for Tropical Medicine
and Global
      Health, University of Oxford, Oxford, UK.grid.4991.50000 0004
1936 8948
FAU - Greenhouse, Bryan
AU - Greenhouse B
AD - Department of Medicine, University of California at San
Francisco, San
      Francisco, CA USA.grid.266102.10000 0001 2297 6811
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Instituto de Medicina Tropical Alexander von
Humboldt,
      Universidad Peruana Cayetano Heredia, Lima,
Peru.grid.11100.310000 0001
      0673 9488
FAU - Domingo, Gonzalo J
AU - Domingo GJ
AD - Diagnostics Program, PATH, Seattle, WA USA.grid.415269.d0000
0000 8940
      7771
LA - eng
PT - Journal Article
DEP - 20210103
PL - India
TA - J Parasit Dis
JT - Journal of parasitic diseases : official organ of the Indian
Society for
      Parasitology
JID - 9713059
PMC - PMC8254675
OTO - NOTNLM
OT - Dried blood spot
OT - HRP2
OT - Immunoassay
OT - LDH
OT - Malaria
OT - Multiplex
COIS- Conflict of interestAll authors declare that they have no
conflicts of
      interest.

EDAT- 2021/07/23 06:00
MHDA- 2021/07/23 06:01
CRDT- 2021/07/22 06:29
PHST- 2020/07/07 00:00 [received]
PHST- 2020/11/21 00:00 [accepted]
PHST- 2021/07/22 06:29 [entrez]
PHST- 2021/07/23 06:00 [pubmed]
PHST- 2021/07/23 06:01 [medline]
AID - 10.1007/s12639-020-01325-2 [doi]
AID - 1325 [pii]
PST - ppublish
SO - J Parasit Dis. 2021 Jun;45(2):479-489. doi: 10.1007/s12639-020-01325-2.
      Epub 2021 Jan 3.

PMID- 34011373
OWN - NLM
STAT- MEDLINE
DCOM- 20210917
LR - 20210917
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 20
IP - 1
DP - 2021 May 19
TI - Multicopy targets for Plasmodium vivax and Plasmodium falciparum
      detection by colorimetric LAMP.
PG - 225
LID - 10.1186/s12936-021-03753-8 [doi]
AB - BACKGROUND: Loop-mediated isothermal amplification (LAMP) for malaria
      diagnosis at the point of care (POC) depends on the detection capacity of
      synthesized nucleic acids and the specificity of the amplification
      target. To improve malaria diagnosis, new colorimetric LAMP tests were
      developed using multicopy targets for Plasmodium vivax and Plasmodium
      falciparum detection. METHODS: The cytochrome oxidase I (COX1)
      mitochondrial gene and the non-coding sequence Pvr47 for P. vivax, and
      the sub-telomeric sequence of erythrocyte membrane protein 1 (EMP1) and
      the non-coding sequence Pfr364 for P. falciparum were targeted to design
      new LAMP primers. The limit of detection (LOD) of each colorimetric LAMP
      was established and assessed with DNA extracted by mini spin column kit
      and the Boil & Spin method from 28 microscopy infections, 101 malaria
      submicroscopic infections detected by real-time PCR only, and

183
      negatives infections by both microscopy and PCR. RESULTS: The LODs for
      the colorimetric LAMPs were estimated between 2.4 to 3.7 parasites/microL
      of whole blood. For P. vivax detection, the colorimetric LAMP using the
      COX1 target showed a better performance than the Pvr47 target, whereas
      the Pfr364 target was the most specific for P. falciparum detection. All
      microscopic infections of P. vivax were detected by PvCOX1-LAMP using the
      mini spin column kit DNA extraction method and 81% (17/21) were detected
      using Boil & Spin sample preparation. Moreover, all microscopic
      infections of P. falciparum were detected by Pfr364-LAMP using both
      sample preparation methods. In total, PvCOX1-LAMP and Pfr364-LAMP
      detected 80.2% (81 samples) of the submicroscopic infections using the
      DNA extraction method by mini spin column kit, while 36.6% (37 samples)
      were detected using the Boil & Spin sample preparation method.
      CONCLUSION: The colorimetric LAMPs with multicopy targets using the COX1
      target for P. vivax and the Pfr364 for P. falciparum have a high
      potential to improve POC malaria diagnosis detecting a greater number of
      submicroscopic Plasmodium infections.
FAU - Nolasco, Oscar
AU - Nolasco O
AUID- ORCID: http://orcid.org/0000-0002-5672-5516
AD - Instituto de Medicina Tropical "Alexander von Humboldt" Universidad
      Peruana Cayetano Heredia, Lima, Peru. oscar.nolasco.c@upch.pe.
AD - Laboratorios de Investigacion Y Desarrollo, Facultad de Ciencias Y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
      oscar.nolasco.c@upch.pe.
FAU - Montoya, Jhoel
AU - Montoya J
AD - Unidad de Posgrado de la Facultad de Ciencias Biologicas Universidad
      Nacional Mayor de San Marcos, Lima, Peru.
FAU - Rosales Rosas, Ana L
AU - Rosales Rosas AL
AD - Laboratorios de Investigacion Y Desarrollo, Facultad de Ciencias Y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Barrientos, Scarlett

AU - Barrientos S
AD - Laboratorios de Investigacion Y Desarrollo, Facultad de Ciencias Y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical "Alexander von Humboldt" Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion Y Desarrollo, Facultad de Ciencias Y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares Y Moleculares, Facultad de Ciencias Y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - 2D43TW007120-11A1/Translational Research Development for Endemic
      Infectious Diseases of Amazonia - FOGARTY
PT - Journal Article
DEP - 20210519
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Protozoan Proteins)
RN - EC 1.9.3.1 (Electron Transport Complex IV)
RN - LAMP assay
SB - IM
MH - Colorimetry/*methods
MH - Electron Transport Complex IV/analysis
MH - Malaria, Falciparum/*diagnosis
MH - Malaria, Vivax/*diagnosis
MH - Molecular Diagnostic Techniques/*methods
MH - Nucleic Acid Amplification Techniques/*methods
MH - Plasmodium falciparum/enzymology/*isolation & purification
MH - Plasmodium vivax/enzymology/*isolation & purification
MH - Protozoan Proteins/analysis
PMC - PMC8135177
OTO - NOTNLM
OT - Colorimetric LAMP
OT - Cox1
OT - Malaria
OT - Molecular diagnosis
OT - PfEMP1
OT - Pfr364
OT - Pvr47
EDAT- 2021/05/21 06:00
MHDA- 2021/09/18 06:00

CRDT- 2021/05/20 05:40
PHST- 2021/01/21 00:00 [received]
PHST- 2021/05/07 00:00 [accepted]
PHST- 2021/05/20 05:40 [entrez]
PHST- 2021/05/21 06:00 [pubmed]
PHST- 2021/09/18 06:00 [medline]
AID - 10.1186/s12936-021-03753-8 [doi]
AID - 10.1186/s12936-021-03753-8 [pii]
PST - epublish
SO - Malar J. 2021 May 19;20(1):225. doi: 10.1186/
s12936-021-03753-8.

PMID- 33906225
OWN - NLM
STAT- MEDLINE
DCOM- 20220113
LR - 20220113
IS - 1537-6613 (Electronic)
IS - 0022-1899 (Linking)
VI - 223
IP - 12 Suppl 2
DP - 2021 Apr 27
TI - Integrating Parasitological and Entomological Observations to
Understand
      Malaria Transmission in Riverine Villages in the Peruvian
Amazon.
PG - S99-S110
LID - 10.1093/infdis/jiaa496 [doi]
AB - BACKGROUND: Remote rural riverine villages account for most of
the
      reported malaria cases in the Peruvian Amazon. As transmission
decreases
      due to intensive standard control efforts, malaria strategies
in these
      villages will need to be more focused and adapted to local
epidemiology.
      METHODS: By integrating parasitological, entomological, and
environmental
      observations between January 2016 and June 2017, we provided
an in-depth
      characterization of malaria transmission dynamics in 4
riverine villages
      of the Mazan district, Loreto department. RESULTS: Despite
variation
      across villages, malaria prevalence by polymerase chain
reaction in March
      2016 was high (>25% in 3 villages), caused by Plasmodium vivax
mainly and
      composed of mostly submicroscopic infections. Housing without
complete
      walls was the main malaria risk factor, while households close
to forest
      edges were more commonly identified as spatial clusters of
malaria

prevalence. Villages in the basin of the Mazan River had a higher density
of adult Anopheles darlingi mosquitoes, and retained higher prevalence
and incidence rates compared to villages in the basin of the Napo River
despite test-and-treat interventions. CONCLUSIONS: High heterogeneity in
malaria transmission was found across and within riverine villages,
resulting from interactions between the microgeographic landscape driving
diverse conditions for vector development, housing structure, and human
behavior.

FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Research Institute of Health and Society, Universite catholique de
Louvain, Brussels, Belgium.
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima, Peru.
FAU - Moreno, Marta
AU - Moreno M
AD - Department of Infection Biology, London School of Hygiene and Tropical
Medicine, London, United Kingdom.
FAU - Moreno-Gutierrez, Diamantina
AU - Moreno-Gutierrez D
AD - Research Institute of Health and Society, Universite catholique de
Louvain, Brussels, Belgium.
AD - Facultad de Medicina Humana, Universidad Nacional de la Amazonia Peruana,
Loreto, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima, Peru.
AD - Facultad de Salud Publica y Administracion, Universidad Peruana Cayetano
Heredia, Lima, Peru.
FAU - Saavedra, Marlon
AU - Saavedra M
AD - International Centers of Excellence for Malaria Research-Amazonia,
Laboratorios de Investigacion y Desarrollo, Facultad de

Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - International Centers of Excellence for Malaria Research-
Amazonia,
      Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Barboza, Jose
AU - Barboza J
AD - International Centers of Excellence for Malaria Research-
Amazonia,
      Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - International Centers of Excellence for Malaria Research-
Amazonia,
      Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Aguirre, Kristhian
AU - Aguirre K
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Carrasco, Gabriel
AU - Carrasco G
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - International Centers of Excellence for Malaria Research-
Amazonia,
      Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California San Diego, La Jolla, California, USA.
FAU - Prussing, Catharine
AU - Prussing C
AD - School of Public Health, Department of Biomedical Sciences,
State
      University of New York, Albany, New York, USA.
AD - Wadsworth Center, New York State Department of Health, Albany,
New York,
      USA.
FAU - Vinetz, Joseph
AU - Vinetz J
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.

AD - International Centers of Excellence for Malaria Research-Amazonia,
      Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal Medicine, Yale
      School of Medicine, New Haven, Connecticut, USA.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Conn, Jan E
AU - Conn JE
AD - School of Public Health, Department of Biomedical Sciences, State
      University of New York, Albany, New York, USA.
AD - Wadsworth Center, New York State Department of Health, Albany, New York,
      USA.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society, Universite catholique de
      Louvain, Brussels, Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - International Centers of Excellence for Malaria Research-Amazonia,
      Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - R01 AI110112/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PL - United States
TA - J Infect Dis
JT - The Journal of infectious diseases
JID - 0413675
SB - IM
MH - Adult
MH - Animals
MH - Anopheles/*parasitology
MH - *Bites and Stings
MH - Humans

MH - Incidence
MH - Insect Vectors
MH - Malaria/epidemiology/*transmission
MH - Mosquito Control/*methods
MH - Mosquito Vectors/*parasitology
MH - Peru/epidemiology
MH - Plasmodium vivax/genetics/*isolation & purification
MH - Polymerase Chain Reaction
MH - Prevalence
PMC - PMC8079135
OTO - NOTNLM
OT - Amazon
OT - Peru
OT - entomological inoculation rate
OT - heterogeneity
OT - human biting rate
OT - incidence
OT - malaria
OT - prevalence
OT - transmission
EDAT- 2021/04/28 06:00
MHDA- 2022/01/14 06:00
CRDT- 2021/04/27 20:27
PHST- 2021/04/27 20:27 [entrez]
PHST- 2021/04/28 06:00 [pubmed]
PHST- 2022/01/14 06:00 [medline]
AID - 6255912 [pii]
AID - 10.1093/infdis/jiaa496 [doi]
PST - ppublish
SO - J Infect Dis. 2021 Apr 27;223(12 Suppl 2):S99-S110. doi:
      10.1093/infdis/jiaa496.

PMID- 32822474
OWN - NLM
STAT- MEDLINE
DCOM- 20220210
LR - 20220210
IS - 1537-6613 (Electronic)
IS - 0022-1899 (Linking)
VI - 223
IP - 8
DP - 2021 Apr 23
TI - Temporal and Microspatial Heterogeneity in Transmission
Dynamics of
      Coendemic Plasmodium vivax and Plasmodium falciparum in Two
Rural Cohort
      Populations in the Peruvian Amazon.
PG - 1466-1477
LID - 10.1093/infdis/jiaa526 [doi]
AB - BACKGROUND: Malaria is highly heterogeneous: its changing
malaria
      microepidemiology needs to be addressed to support malaria
elimination
      efforts at the regional level. METHODS: A 3-year, population-

based cohort
      study in 2 settings in the Peruvian Amazon (Lupuna, Cahuide) followed
      participants by passive and active case detection from January 2013 to
      December 2015. Incidence and prevalence rates were estimated using
      microscopy and polymerase chain reaction (PCR). RESULTS: Lupuna
      registered 1828 infections (1708 Plasmodium vivax, 120 Plasmodium
      falciparum; incidence was 80.7 infections/100 person-years (95%
      confidence interval [CI] , 77.1-84.5). Cahuide detected 1046 infections
      (1024 P vivax, 20 P falciparum, 2 mixed); incidence was 40.2
      infections/100 person-years (95% CI, 37.9-42.7). Recurrent P vivax
      infections predominated onwards from 2013. According to PCR data,
      submicroscopic predominated over microscopic infections, especially in
      periods of low transmission. The integration of parasitological,
      entomological, and environmental observations evidenced an intense and
      seasonal transmission resilient to standard control measures in Lupuna
      and a persistent residual transmission after severe outbreaks were
      intensively handled in Cahuide. CONCLUSIONS: In 2 exemplars of complex
      local malaria transmission, standard control strategies failed to
      eliminate submicroscopic and hypnozoite reservoirs, enabling persistent
      transmission.

FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Research Institute of Health and Society, Universite Catholique de
      Louvain, Brussels, Belgium.
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad

      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio International Centers of Excellence in Malaria
Research-
      Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad
de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Chuquiyauri, Raul
AU - Chuquiyauri R
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio International Centers of Excellence in Malaria
Research-
      Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad
de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Moreno, Marta
AU - Moreno M
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California San Diego, La Jolla, California, USA.
AD - London School of Hygiene and Tropical Medicine, Department of
Immunology
      and Infection, London, United Kingdom.
FAU - Manrique, Paulo
AU - Manrique P
AD - Laboratorio International Centers of Excellence in Malaria
Research-
      Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad
de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Ramirez, Roberson
AU - Ramirez R
AD - Laboratorio International Centers of Excellence in Malaria
Research-
      Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad
de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio International Centers of Excellence in Malaria
Research-
      Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad
de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine,

University of
      California San Diego, La Jolla, California, USA.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Direccion Regional de Salud Loreto DIRESA Loreto, Loreto,
Peru.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society, Universite
Catholique de
      Louvain, Brussels, Belgium.
FAU - Conn, Jan E
AU - Conn JE
AD - Wadsworth Center, New York State Department of Health, Albany,
New York,
      USA.
AD - Department of Biomedical Sciences, School of Public Health,
University at
      Albany, State University of New York, Albany, New York, USA.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio International Centers of Excellence in Malaria
Research-
      Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad
de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio International Centers of Excellence in Malaria
Research-
      Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad
de
      Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal
Medicine, Yale
      School of Medicine, New Haven, Connecticut, USA.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad

      Peruana Cayetano Heredia, Lima, Peru.
AD - Facultad de Salud Publica y Administracion, Universidad
Peruana Cayetano
      Heredia, Lima, Peru.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PL - United States
TA - J Infect Dis
JT - The Journal of infectious diseases
JID - 0413675
SB - IM
MH - Cohort Studies
MH - Humans
MH - *Malaria, Falciparum/epidemiology/transmission
MH - *Malaria, Vivax/epidemiology/transmission
MH - Peru/epidemiology
MH - Plasmodium falciparum
MH - Plasmodium vivax
MH - Prevalence
PMC - PMC8064053
OTO - NOTNLM
OT - Amazon
OT - Malaria
OT - Peru
OT - human biting rate
OT - transmission
EDAT- 2020/08/22 06:00
MHDA- 2022/02/11 06:00
CRDT- 2020/08/22 06:00
PHST- 2020/05/05 00:00 [received]
PHST- 2020/08/17 00:00 [accepted]
PHST- 2020/08/22 06:00 [pubmed]
PHST- 2022/02/11 06:00 [medline]
PHST- 2020/08/22 06:00 [entrez]
AID - 5895494 [pii]
AID - 10.1093/infdis/jiaa526 [doi]
PST - ppublish
SO - J Infect Dis. 2021 Apr 23;223(8):1466-1477. doi: 10.1093/
infdis/jiaa526.

PMID- 33831004
OWN - NLM
STAT- MEDLINE
DCOM- 20210913
LR - 20210920
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 16
IP - 4
DP - 2021
TI - Ecology and larval population dynamics of the primary malaria

vector
      Nyssorhynchus darlingi in a high transmission setting dominated by fish
      farming in western Amazonian Brazil.
PG - e0246215
LID - 10.1371/journal.pone.0246215 [doi]
AB - Vale do Rio Jurua in western Acre, Brazil, is a persistent malaria
      transmission hotspot partly due to fish farming development that was
      encouraged to improve local standards of living. Fish ponds can be
      productive breeding sites for Amazonian malaria vector species, including
      Nyssorhynchus darlingi, which, combined with high human density and
      mobility, add to the local malaria burden.This study reports
      entomological profile of immature and adult Ny. darlingi at three sites
      in Mancio Lima, Acre, during the rainy and dry season (February to
      September, 2017). From 63 fishponds, 10,859 larvae were collected,
      including 5,512 first-instar Anophelinae larvae and 4,927 second, third
      and fourth-instars, of which 8.5% (n = 420) were Ny. darlingi. This
      species was most abundant in not-abandoned fishponds and in the presence
      of emerging aquatic vegetation. Seasonal analysis of immatures in urban
      landscapes found no significant difference in the numbers of Ny.
      darlingi, corresponding to equivalent population density during the rainy
      to dry transition period. However, in the rural landscape, significantly
      higher numbers of Ny. darlingi larvae were collected in August (IRR =
      5.80, p = 0.037) and September (IRR = 6.62, p = 0.023) (dry season),
      compared to February (rainy season), suggesting important role of
      fishponds for vector population maintenance during the seasonal
      transition in this landscape type. Adult sampling detected mainly Ny.
      darlingi (~93%), with similar outdoor feeding behavior, but different
      abundance according to landscape profile: urban site 1 showed higher
      peaks of human biting rate in May (46 bites/person/hour), than February
      (4) and September (15), while rural site 3 shows similar HBR

during the
      same sampling period (22, 24 and 21, respectively). This study
      contributes to a better understanding of the larvae biology of
the main
      malaria vector in the Vale do Rio Jurua region and, ultimately
will
      support vector control efforts.
FAU - Rufalco-Moutinho, Paulo
AU - Rufalco-Moutinho P
AUID- ORCID: 0000-0003-2540-2869
AD - Departamento de Bioestatistica, Biologia Vegetal,
Parasitologia e
      Zoologia, Instituto de Biociencias de Botucatu, Universidade
Estadual
      Paulista, Botucatu, Sao Paulo, Brazil.
FAU - Moura Kadri, Samir
AU - Moura Kadri S
AD - Instituto de Biotecnologia, Universidade Estadual Paulista,
Botucatu, Sao
      Paulo, Brazil.
FAU - Peres Alonso, Diego
AU - Peres Alonso D
AD - Instituto de Biotecnologia, Universidade Estadual Paulista,
Botucatu, Sao
      Paulo, Brazil.
FAU - Moreno, Marta
AU - Moreno M
AD - Department of Infection Biology, London School of Hygiene &
Tropical
      Medicine, London, United Kingdom.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Prussing, Catharine
AU - Prussing C
AUID- ORCID: 0000-0001-6425-6839
AD - Department of Biomedical Sciences, School of Public Health,
State
      University of New York-Albany, Albany, NY, United States of
America.
AD - New York State Department of Health, Wadsworth Center, Albany,
NY, United
      States of America.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Facultad de Ciencias y Filosofia, Departamento de Ciencias
Celulares y
      Moleculares, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicinal Tropical "Alexander von Humboldt",
Universidad

      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Instituto de Medicinal Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Department of Internal Medicine, Section of Infectious
Diseases, Yale
      School of Medicine, New Haven, CT, United States of America.
FAU - Mureb Sallum, Maria Anice
AU - Mureb Sallum MA
AD - Faculdade de Saude Publica, Departamento de Epidemiologia,
Universidade
      de Sao Paulo, Sao Paulo, Brazil.
FAU - Conn, Jan E
AU - Conn JE
AD - Department of Biomedical Sciences, School of Public Health,
State
      University of New York-Albany, Albany, NY, United States of
America.
AD - New York State Department of Health, Wadsworth Center, Albany,
NY, United
      States of America.
FAU - Martins Ribolla, Paulo Eduardo
AU - Martins Ribolla PE
AD - Departamento de Bioestatistica, Biologia Vegetal,
Parasitologia e
      Zoologia, Instituto de Biociencias de Botucatu, Universidade
Estadual
      Paulista, Botucatu, Sao Paulo, Brazil.
AD - Instituto de Biotecnologia, Universidade Estadual Paulista,
Botucatu, Sao
      Paulo, Brazil.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20210408
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
SB - IM
MH - Animals
MH - Anopheles/*physiology
MH - *Aquaculture
MH - Brazil
MH - Larva/physiology

MH - *Malaria
MH - Mosquito Vectors/*physiology
MH - *Ponds
MH - Population Dynamics
MH - *Seasons
PMC - PMC8031405
COIS- The authors have declared that no competing interests exist.
EDAT- 2021/04/09 06:00
MHDA- 2021/09/14 06:00
CRDT- 2021/04/08 17:25
PHST- 2021/01/09 00:00 [received]
PHST- 2021/03/23 00:00 [accepted]
PHST- 2021/04/08 17:25 [entrez]
PHST- 2021/04/09 06:00 [pubmed]
PHST- 2021/09/14 06:00 [medline]
AID - 10.1371/journal.pone.0246215 [doi]
AID - PONE-D-21-00873 [pii]
PST - epublish
SO - PLoS One. 2021 Apr 8;16(4):e0246215. doi: 10.1371/journal.pone.0246215.
      eCollection 2021.

PMID- 33596478
OWN - NLM
STAT- MEDLINE
DCOM- 20210526
LR - 20210915
IS - 1878-3511 (Electronic)
IS - 1201-9712 (Linking)
VI - 105
DP - 2021 Apr
TI - Towards one standard treatment for uncomplicated Plasmodium falciparum
      and Plasmodium vivax malaria: Perspectives from and for the Peruvian
      Amazon.
PG - 293-297
LID - S1201-9712(21)00128-4 [pii]
LID - 10.1016/j.ijid.2021.02.042 [doi]
AB - Malaria continues to wreak havoc in the Peruvian Amazon. Lengthy research
      efforts have brought important lessons on its particular epidemiology:
      the heterogeneous levels of transmission, the large reservoir of both
      asymptomatic and submicroscopic infections, the co-transmission of
      Plasmodium vivax and Plasmodium falciparum in the same areas, and the
      limitations of current diagnostics. Based on these features, the national
      elimination program could greatly benefit from simplified standard
      treatment, with the use of artemisinin-based combination

therapy and even
      shorter schemes of primaquine maintaing the total dosing. It
is
      acknowledged that there is some uncertainty regarding the true
prevalence
      of glucose-6-phosphate dehydrogenase deficiency (G6PD) and
genetic
      polymorphisms related to cytochrome P-450 isozyme 2D6
functioning. Once
      we have a better understanding, tafenoquine, whether or not in
      combination with a rapid G6PD enzyme test, may become a future
pathway to
      eliminate the otherwise hidden reservoir of the P. vivax
hypnozoite
      through one standard Plasmodium treatment.

FAU - Fernandez-Minope, Carlos
AU - Fernandez-Minope C
AD - Global Health Institute, University of Antwerp, Antwerp,
Belgium;
      Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru. Electronic address:
      fernandezc4@gmail.com.
FAU - Delgado-Ratto, Christopher
AU - Delgado-Ratto C
AD - Global Health Institute, University of Antwerp, Antwerp,
Belgium;
      Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru. Electronic address:
      chris.delgadoratto@uantwerp.be.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru. Electronic address:
      juan.contreras.m@upch.pe.
FAU - Ferrucci, Hugo Rodriguez
AU - Ferrucci HR
AD - Ministry of Health, Loreto, Peru. Electronic address:
      hmrodriguezf@hotmail.com.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru. Electronic address:
      alejandro.llanos.c@upch.pe.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad

      Peruana Cayetano Heredia, Lima, Peru; Departamento de Ciencias Celulares
      y Moleculares, Facultad de Ciencias y Filosofia, Universidad Peruana
      Cayetano Heredia, Lima, Peru. Electronic address: dionigamboa@yahoo.com.
FAU - Van Geertruyden, Jean-Pierre
AU - Van Geertruyden JP
AD - Global Health Institute, University of Antwerp, Antwerp, Belgium.
      Electronic address: pierre.vangeertruyden@uantwerp.be.
LA - eng
PT - Journal Article
DEP - 20210215
PL - Canada
TA - Int J Infect Dis
JT - International journal of infectious diseases : IJID : official
      publication of the International Society for Infectious Diseases
JID - 9610933
RN - 0 (Aminoquinolines)
RN - 0 (Artemisinins)
RN - 262P8GS9L9 (tafenoquine)
RN - 9RMU91N5K2 (artemisinin)
RN - MVR3634GX1 (Primaquine)
SB - IM
MH - Adult
MH - Aminoquinolines/therapeutic use
MH - Artemisinins/therapeutic use
MH - Female
MH - Humans
MH - Malaria, Falciparum/*drug therapy/epidemiology
MH - Malaria, Vivax/*drug therapy
MH - Peru/epidemiology
MH - Plasmodium falciparum/*physiology
MH - Plasmodium vivax/*physiology
MH - Prevalence
MH - Primaquine/administration & dosage/therapeutic use
MH - Reference Standards
OTO - NOTNLM
OT - Control
OT - Elimination
OT - Peru
OT - Plasmodium falciparum
OT - Plasmodium vivax
OT - Policy
OT - South America
OT - Treatment
EDAT- 2021/02/18 06:00
MHDA- 2021/05/27 06:00
CRDT- 2021/02/17 20:05
PHST- 2020/10/30 00:00 [received]
PHST- 2021/02/09 00:00 [revised]
PHST- 2021/02/10 00:00 [accepted]

PHST- 2021/02/18 06:00 [pubmed]
PHST- 2021/05/27 06:00 [medline]
PHST- 2021/02/17 20:05 [entrez]
AID - S1201-9712(21)00128-4 [pii]
AID - 10.1016/j.ijid.2021.02.042 [doi]
PST - ppublish
SO - Int J Infect Dis. 2021 Apr;105:293-297. doi: 10.1016/
j.ijid.2021.02.042.
Epub 2021 Feb 15.

PMID- 33801386
OWN - NLM
STAT- PubMed-not-MEDLINE
LR - 20210920
IS - 2076-0817 (Print)
IS - 2076-0817 (Linking)
VI - 10
IP - 3
DP - 2021 Mar 2
TI - PvMSP8 as a Novel Plasmodium vivax Malaria Sero-Marker for the
Peruvian
Amazon.
LID - 282 [pii]
LID - 10.3390/pathogens10030282 [doi]
AB - The measurement of recent malaria exposure can support malaria
control
efforts. This study evaluated serological responses to an in-
house
Plasmodium vivax Merozoite Surface Protein 8 (PvMSP8)
expressed in a
Baculovirus system as sero-marker of recent exposure to P.
vivax (Pv) in
the Peruvian Amazon. In a first evaluation, IgGs against
PvMSP8 and
PvMSP10 proteins were measured by Luminex in a cohort of 422
Amazonian
individuals with known history of Pv exposure (monthly data of
infection
status by qPCR and/or microscopy over five months). Both
serological
responses were able to discriminate between exposed and non-
exposed
individuals in a good manner, with slightly higher performance
of anti-
PvMSP10 IgGs (area under the curve AUC = 0.78 [95% CI =
0.72-0.83]) than
anti-PvMSP8 IgGs (AUC = 0.72 [95% CI = 0.67-0.78]) (p = 0.01).
In a
second evaluation, the analysis by ELISA of 1251 plasma
samples,
collected during a population-based cross-sectional survey,
confirmed the
good performance of anti-PvMSP8 IgGs for discriminating
between

      individuals with Pv infection at the time of survey and/or
with
      antecedent of Pv in the past month (AUC = 0.79 [95% CI =
0.74-0.83]).
      Anti-PvMSP8 IgG antibodies can be considered as a good
biomarker of
      recent Pv exposure in low-moderate transmission settings of
the Peruvian
      Amazon.
FAU - Villasis, Elizabeth
AU - Villasis E
AUID- ORCID: 0000-0002-6824-2239
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      15102, Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima 15102, Peru.
FAU - Garro, Katherine
AU - Garro K
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      15102, Lima, Peru.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima 15102, Peru.
AD - Research Institute of Health and Society (IRSS). Universite
Catholique de
      Louvain, Clos Chapelle-aux-champs 30/B1.30.14 1200 Woluwe-
Saint-Lambert,
      Brussels 1200, Belgium.
FAU - Rodriguez, Pamela
AU - Rodriguez P
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      15102, Lima, Peru.
FAU - Rosado, Jason
AU - Rosado J
AD - Malaria: Parasites and Hosts Unit, Institut Pasteur, Paris
75015, France.
AD - Sorbonne Universite, Faculte des Sciences et Ingenierie, Ecole
Doctorale
      Pierre Louis - Sante Publique, Campus des Cordeliers, ED 393,
F-75005
      Paris, France.
FAU - Gave, Anthony

AU - Gave A
AD - Laboratorio de Malaria: Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima 15102, Peru.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima 15102, Peru.
FAU - Manrique, Paulo
AU - Manrique P
AUID- ORCID: 0000-0003-3412-0249
AD - Leishmania and Malaria Research Unit. Instituto de Medicina
Tropical
      Alexander von Humboldt, Universidad Peruana Cayetano Heredia,
Lima 15102,
      Peru.
FAU - White, Michael
AU - White M
AD - Malaria: Parasites and Hosts Unit, Institut Pasteur, Paris
75015, France.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS). Universite
Catholique de
      Louvain, Clos Chapelle-aux-champs 30/B1.30.14 1200 Woluwe-
Saint-Lambert,
      Brussels 1200, Belgium.
FAU - Vinetz, Joseph Michael
AU - Vinetz JM
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima 15102, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima 15102, Peru.
AD - Section of Infectious Diseases, Department of Internal
Medicine, Yale
      School of Medicine, New Haven, CT 06520, USA.
FAU - Torres, Katherine
AU - Torres K
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      15102, Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima 15102, Peru.

FAU - Gamboa, Dionicia
AU - Gamboa D
AUID- ORCID: 0000-0002-1420-7729
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 15102, Peru.
AD - Laboratorio de Malaria: Parasitos y Vectores, Laboratorios de
      Investigacion y Desarrollo, Facultad de Ciencias y Filosofia, Universidad
      Peruana Cayetano Heredia, Lima 15102, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima 15102, Peru.
LA - eng
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
GR - Contract 218-2015-FONDECYT/Fondo Nacional de Desarrollo Cientifico,
      Tecnologico y de Innovacion Tecnologica" (FONDECYT/CONCYTEC)
GR - U19AI089681/NH/NIH HHS/United States
GR - D43TW007120/TW/FIC NIH HHS/United States
PT - Journal Article
DEP - 20210302
PL - Switzerland
TA - Pathogens
JT - Pathogens (Basel, Switzerland)
JID - 101596317
PMC - PMC7999794
OTO - NOTNLM
OT - ELISA
OT - Luminex
OT - P. vivax
OT - PvMSP8
OT - antibodies
OT - malaria
EDAT- 2021/04/04 06:00
MHDA- 2021/04/04 06:01
CRDT- 2021/04/03 01:08
PHST- 2021/01/30 00:00 [received]
PHST- 2021/02/24 00:00 [revised]
PHST- 2021/02/24 00:00 [accepted]
PHST- 2021/04/03 01:08 [entrez]
PHST- 2021/04/04 06:00 [pubmed]
PHST- 2021/04/04 06:01 [medline]
AID - pathogens10030282 [pii]
AID - 10.3390/pathogens10030282 [doi]
PST - epublish
SO - Pathogens. 2021 Mar 2;10(3). pii: pathogens10030282. doi:
      10.3390/pathogens10030282.

PMID- 33632222
OWN - NLM
STAT- MEDLINE
DCOM- 20210813

LR - 20210813
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 20
IP - 1
DP - 2021 Feb 25
TI - Performance of a fully-automated system on a WHO malaria microscopy
      evaluation slide set.
PG - 110
LID - 10.1186/s12936-021-03631-3 [doi]
AB - BACKGROUND: Manual microscopy remains a widely-used tool for malaria
      diagnosis and clinical studies, but it has inconsistent quality in the
      field due to variability in training and field practices. Automated
      diagnostic systems based on machine learning hold promise to improve
      quality and reproducibility of field microscopy. The World Health
      Organization (WHO) has designed a 55-slide set (WHO 55) for their
      External Competence Assessment of Malaria Microscopists (ECAMM)
      programme, which can also serve as a valuable benchmark for automated
      systems. The performance of a fully-automated malaria diagnostic system,
      EasyScan GO, on a WHO 55 slide set was evaluated. METHODS: The WHO 55
      slide set is designed to evaluate microscopist competence in three areas
      of malaria diagnosis using Giemsa-stained blood films, focused on crucial
      field needs: malaria parasite detection, malaria parasite species
      identification (ID), and malaria parasite quantitation. The EasyScan GO
      is a fully-automated system that combines scanning of Giemsa-stained
      blood films with assessment algorithms to deliver malaria diagnoses. This
      system was tested on a WHO 55 slide set. RESULTS: The EasyScan GO
      achieved 94.3 % detection accuracy, 82.9 % species ID accuracy, and 50 %
      quantitation accuracy, corresponding to WHO microscopy competence Levels
      1, 2, and 1, respectively. This is, to our knowledge, the best
      performance of a fully-automated system on a WHO 55 set. CONCLUSIONS:
      EasyScan GO's expert ratings in detection and quantitation on the WHO 55

slide set point towards its potential value in drug efficacy use-cases,
as well as in some case management situations with less stringent species
ID needs. Improved runtime may enable use in general case management
settings.
FAU - Horning, Matthew P
AU - Horning MP
AUID- ORCID: http://orcid.org/0000-0002-1736-7090
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
matthew.horning@ghlabs.org.
FAU - Delahunt, Charles B
AU - Delahunt CB
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
AD - Applied Math Department, University of Washington, Seattle, WA, 98195,
USA.
FAU - Bachman, Christine M
AU - Bachman CM
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
FAU - Luchavez, Jennifer
AU - Luchavez J
AD - Research Institute for Tropical Medicine, Muntinlupa, Philippines.
FAU - Luna, Christian
AU - Luna C
AD - Research Institute for Tropical Medicine, Muntinlupa, Philippines.
FAU - Hu, Liming
AU - Hu L
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
FAU - Jaiswal, Mayoore S
AU - Jaiswal MS
AD - formerly Intellectual Ventures Laboratory, 3150 139th AVE SE, Bellevue,
WA, 98005, USA.
FAU - Thompson, Clay M
AU - Thompson CM
AD - Creative Creek LLC, Camano Island, WA, USA.
FAU - Kulhare, Sourabh
AU - Kulhare S
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
FAU - Janko, Samantha

AU - Janko S
AD - Arizona State University, Tempe, AZ, USA.
FAU - Wilson, Benjamin K
AU - Wilson BK
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
      Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
FAU - Ostbye, Travis
AU - Ostbye T
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
      Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
FAU - Mehanian, Martha
AU - Mehanian M
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
      Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
FAU - Gebrehiwot, Roman
AU - Gebrehiwot R
AD - formerly Intellectual Ventures Laboratory, 3150 139th AVE SE, Bellevue,
      WA, 98005, USA.
FAU - Yun, Grace
AU - Yun G
AD - formerly Intellectual Ventures Laboratory, 3150 139th AVE SE, Bellevue,
      WA, 98005, USA.
FAU - Bell, David
AU - Bell D
AD - Independent Consultant, Issaquah, WA, USA.
FAU - Proux, Stephane
AU - Proux S
AD - Shoklo Malaria Research Unit, Mahidol Oxford Tropical Medicine Research
      Unit, Faculty of Tropical Medicine, Mahidol University, Mae Sot,
      Thailand.
FAU - Carter, Jane Y
AU - Carter JY
AD - Amref Health Africa, Nairobi, Kenya.
FAU - Oyibo, Wellington
AU - Oyibo W
AD - University of Lagos, Lagos, Nigeria.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Dhorda, Mehul
AU - Dhorda M
AD - World Wide Antimalarial Resistance Network and Mahidol-Oxford Tropical
      Medicine Research Unit, Bangkok, Thailand.
FAU - Vongpromek, Ranitha

AU - Vongpromek R
AD - Infectious Diseases Data Observatory and World Wide Antimalarial
      Resistance Network, Asia- Pacific Regional Centre, Bangkok, Thailand.
FAU - Chiodini, Peter L
AU - Chiodini PL
AD - Hospital for Tropical Diseases and the London School of Hygiene and
      Tropical Medicine, London, UK.
FAU - Ogutu, Bernhards
AU - Ogutu B
AD - Kenya Medical Research Institute, Nairobi, Kenya.
FAU - Long, Earl G
AU - Long EG
AD - Centers for Disease Control and Prevention, Atlanta, GA, USA.
FAU - Tun, Kyaw
AU - Tun K
AD - Defence Services Medical Academy, Mingaladon, Myanmar.
FAU - Burkot, Thomas R
AU - Burkot TR
AD - Australian Institute of Tropical Health and Medicine, James Cook
      University, Cairns, Australia.
FAU - Lilley, Ken
AU - Lilley K
AD - Australian Defence Force Malaria and Infectious Disease Institute,
      Enoggera, Australia.
FAU - Mehanian, Courosh
AU - Mehanian C
AD - Global Health Labs (formerly at Intellectual Ventures Laboratory/Global
      Good), 14360 SE Eastgate Way, Bellevue, WA, 98007, USA.
LA - eng
PT - Journal Article
DEP - 20210225
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Automation, Laboratory
MH - Diagnostic Tests, Routine/instrumentation/*methods
MH - Humans
MH - Malaria/diagnosis
MH - Malaria, Falciparum/*diagnosis
MH - Microscopy/*instrumentation
MH - Plasmodium/isolation & purification
MH - Plasmodium falciparum/*isolation & purification
MH - Reproducibility of Results
MH - World Health Organization
PMC - PMC7905596
OTO - NOTNLM

OT - Automated diagnosis
OT - Machine learning
OT - Malaria
OT - Microscopy
OT - WHO
EDAT- 2021/02/27 06:00
MHDA- 2021/08/14 06:00
CRDT- 2021/02/26 05:38
PHST- 2020/10/17 00:00 [received]
PHST- 2021/02/06 00:00 [accepted]
PHST- 2021/02/04 00:00 [revised]
PHST- 2021/02/26 05:38 [entrez]
PHST- 2021/02/27 06:00 [pubmed]
PHST- 2021/08/14 06:00 [medline]
AID - 10.1186/s12936-021-03631-3 [doi]
AID - 10.1186/s12936-021-03631-3 [pii]
PST - epublish
SO - Malar J. 2021 Feb 25;20(1):110. doi: 10.1186/
s12936-021-03631-3.

PMID- 33591976
OWN - NLM
STAT- MEDLINE
DCOM- 20210610
LR - 20220201
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 15
IP - 2
DP - 2021 Feb
TI - Heterogeneity in response to serological exposure markers of
recent
      Plasmodium vivax infections in contrasting epidemiological
contexts.
PG - e0009165
LID - 10.1371/journal.pntd.0009165 [doi]
AB - BACKGROUND: Antibody responses as serological markers of
Plasmodium vivax
      infection have been shown to correlate with exposure, but
little is known
      about the other factors that affect antibody responses in
naturally
      infected people from endemic settings. To address this
question, we
      studied IgG responses to novel serological exposure markers
(SEMs) of P.
      vivax in three settings with different transmission intensity.
      METHODOLOGY: We validated a panel of 34 SEMs in a Peruvian
cohort with up
      to three years' longitudinal follow-up using a multiplex
platform and
      compared results to data from cohorts in Thailand and Brazil.
Linear
      regression models were used to characterize the association

between
      antibody responses and age, the number of detected blood-stage infections
      during follow-up, and time since previous infection. Receiver Operating
      Characteristic (ROC) analysis was used to test the performance of SEMs to
      identify P. vivax infections in the previous 9 months. PRINCIPAL
      FINDINGS: Antibody titers were associated with age, the number of blood-
      stage infections, and time since previous P. vivax infection in all three
      study sites. The association between antibody titers and time since
      previous P. vivax infection was stronger in the low transmission settings
      of Thailand and Brazil compared to the higher transmission setting in
      Peru. Of the SEMs tested, antibody responses to RBP2b had the highest
      performance for classifying recent exposure in all sites, with area under
      the ROC curve (AUC) = 0.83 in Thailand, AUC = 0.79 in Brazil, and AUC =
      0.68 in Peru. CONCLUSIONS: In low transmission settings, P. vivax SEMs
      can accurately identify individuals with recent blood-stage infections.
      In higher transmission settings, the accuracy of this approach diminishes
      substantially. We recommend using P. vivax SEMs in low transmission
      settings pursuing malaria elimination, but they are likely to be less
      effective in high transmission settings focused on malaria control.
FAU - Rosado, Jason
AU - Rosado J
AUID- ORCID: 0000-0003-4834-2088
AD - Unit of Malaria: Parasites and hosts, Institut Pasteur, Paris, France.
AD - Sorbonne Universite, ED 393, Paris, France.
FAU - White, Michael T
AU - White MT
AUID- ORCID: 0000-0002-7472-4138
AD - Unit of Malaria: Parasites and hosts, Institut Pasteur, Paris, France.
FAU - Longley, Rhea J
AU - Longley RJ
AUID- ORCID: 0000-0002-4510-5602
AD - Walter and Eliza Hall Institute of Medical Research, Melbourne,
      Australia.

AD - Department of Medical Biology, University of Melbourne,
Australia.
FAU - Lacerda, Marcus
AU - Lacerda M
AUID- ORCID: 0000-0003-3374-9985
AD - Instituto Leonidas & Maria Deane (Fiocruz), Manaus, Brazil.
AD - Tropical Medicine Foundation Dr Heitor Vieira Dourado, Manaus,
Amazonas,
      Brazil.
FAU - Monteiro, Wuelton
AU - Monteiro W
AD - Tropical Medicine Foundation Dr Heitor Vieira Dourado, Manaus,
Amazonas,
      Brazil.
FAU - Brewster, Jessica
AU - Brewster J
AD - Walter and Eliza Hall Institute of Medical Research,
Melbourne,
      Australia.
FAU - Sattabongkot, Jetsumon
AU - Sattabongkot J
AUID- ORCID: 0000-0002-3938-4588
AD - Vivax Research Unit, Faculty of Tropical Medicine, Mahidol
University,
      Bangkok, Thailand.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AUID- ORCID: 0000-0003-2662-2142
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AUID- ORCID: 0000-0002-7567-5534
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AUID- ORCID: 0000-0001-8344-2004
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal
Medicine, Yale
      School of Medicine, New Haven, Connecticut, United States of
America.

AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AUID- ORCID: 0000-0002-1420-7729
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Mueller, Ivo
AU - Mueller I
AD - Unit of Malaria: Parasites and hosts, Institut Pasteur, Paris, France.
AD - Walter and Eliza Hall Institute of Medical Research, Melbourne,
      Australia.
AD - Department of Medical Biology, University of Melbourne, Australia.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI129392/AI/NIAID NIH HHS/United States
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20210216
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
RN - 0 (Biomarkers)
RN - 0 (Immunoglobulin G)
SB - IM
MH - Antibody Formation
MH - Biomarkers/*blood
MH - Brazil/epidemiology
MH - Cohort Studies
MH - Humans
MH - Immunoglobulin G/blood
MH - Longitudinal Studies
MH - Malaria, Vivax/blood/*diagnosis/epidemiology/immunology
MH - Peru/epidemiology
MH - Plasmodium vivax
MH - Prevalence
MH - Serologic Tests/*methods/standards
MH - Thailand/epidemiology
PMC - PMC7909627
COIS- I have read the journal's policy and the authors of this

manuscript have
      the following competing interests: RJL, MTW, Takafumi Tsuboi and IM are
      inventors on patent PCT/US17/67926 on a system, method, apparatus and
      diagnostic test for Plasmodium vivax. No other authors declare a conflict
      of interest.
EDAT- 2021/02/17 06:00
MHDA- 2021/06/11 06:00
CRDT- 2021/02/16 17:10
PHST- 2020/08/31 00:00 [received]
PHST- 2021/01/21 00:00 [accepted]
PHST- 2021/02/26 00:00 [revised]
PHST- 2021/02/17 06:00 [pubmed]
PHST- 2021/06/11 06:00 [medline]
PHST- 2021/02/16 17:10 [entrez]
AID - 10.1371/journal.pntd.0009165 [doi]
AID - PNTD-D-20-01535 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2021 Feb 16;15(2):e0009165. doi:
      10.1371/journal.pntd.0009165. eCollection 2021 Feb.

PMID- 32885776
OWN - NLM
STAT- MEDLINE
DCOM- 20201123
LR - 20210920
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 103
IP - 5
DP - 2020 Nov
TI - Malaria Situation in the Peruvian Amazon during the COVID-19 Pandemic.
PG - 1773-1776
LID - 10.4269/ajtmh.20-0889 [doi]
AB - The Peruvian Ministry of Health reports a near absence of malaria cases
      in the Amazon region during the COVID-19 pandemic. However, the rapid
      increase in SARS-CoV-2 infections has overwhelmed the Peruvian health
      system, leading to national panic and closure of public medical
      facilities, casting doubt on how accurately malaria cases' numbers
      reflect reality. In the Amazon region of Loreto, where malaria cases are
      concentrated, COVID-19 has led to near-complete closure of the primary
      healthcare system, and diagnosis and treatment of acute febrile
      illnesses, including malaria, has plummeted. Here, we describe

the
      potential association of COVID-19 with a markedly reduced number of
      reported malaria cases due to the reduced control activities carried out
      by the Peruvian Malaria Zero Program, which could lead to malaria
      resurgence and an excess of morbidity and mortality.
FAU - Torres, Katherine
AU - Torres K
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - Direccion Regional de Salud Loreto (DIRESA), Iquitos, Peru.
AD - Laboratorio Amazonia-ICEMR y Enfermedades Emergentes Sede Iquitos,
      Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Soto-Calle, Veronica
AU - Soto-Calle V
AD - Direccion de Prevencion y Control de Enfermedades Metaxenicas y Zoonosis,
      Ministerio de Salud, Lima, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Universidad Nacional de la Amazonia Peruana, Iquitos, Peru.
FAU - Llacsahuanga, Lidia
AU - Llacsahuanga L
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph
AU - Vinetz J
AD - Laboratorio Amazonia-ICEMR y Enfermedades Emergentes Sede

Iquitos,
      Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal
Medicine, Yale
      School of Medicine, New Haven, Connecticut.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Betacoronavirus
MH - COVID-19
MH - Coronavirus Infections/*epidemiology
MH - Humans
MH - Malaria/*epidemiology/prevention & control
MH - Pandemics
MH - Peru/epidemiology
MH - Pneumonia, Viral/*epidemiology
MH - SARS-CoV-2
PMC - PMC7646770
EDAT- 2020/09/05 06:00
MHDA- 2020/11/24 06:00
CRDT- 2020/09/05 06:00
PHST- 2020/09/05 06:00 [pubmed]
PHST- 2020/11/24 06:00 [medline]
PHST- 2020/09/05 06:00 [entrez]
AID - 10.4269/ajtmh.20-0889 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2020 Nov;103(5):1773-1776. doi: 10.4269/
ajtmh.20-0889.

PMID- 32748776
OWN - NLM
STAT- MEDLINE
DCOM- 20201123
LR - 20220902
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 103
IP - 4
DP - 2020 Oct
TI - Diagnosis of Plasmodium vivax by Loop-Mediated Isothermal
Amplification
      in Febrile Patient Samples from Loreto, Peru.
PG - 1549-1552

LID - 10.4269/ajtmh.20-0212 [doi]
AB - Plasmodium vivax is co-endemic with Plasmodium falciparum in Peru, and
      optimum management requires distinguishing these two species in the blood
      of patients. For the differential identification of P. vivax and other
      Plasmodium spp., the Loopamp(TM) Malaria Pan Detection Kit in combination
      with the Loopamp Malaria Pv Detection Kit (Eiken Chemical Co. Ltd.,
      Tokyo, Japan) was used to evaluate 559 whole blood samples collected in
      2017 from febrile patients with suspected malaria attending different
      health facilities in the Loreto region. The Loopamp Malaria Pan Detection
      Kit showed a sensitivity of 87.7% (95% CI: 83.5-91.9) and a specificity
      of 94.4% (95% CI: 91.9-96.9) and good agreement with PCR (Cohen's kappa
      0.8266, 95% CI: 0.7792-0.874). By comparison, the Loopamp Malaria Pv
      Detection Kit showed a similar sensitivity (84.4%, 95% CI: 79.0-89.7) and
      specificity (92.4%, 95% CI: 89.7-95.0) and substantial agreement with PCR
      (Cohen's kappa: 0.7661, 95% CI: 0.7088-0.8234).
FAU - Nolasco, Oscar
AU - Nolasco O
AD - 1Instituto de Medicina Tropical "Alexander von Humboldt" Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Infante, Beronica
AU - Infante B
AD - 2Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - 1Instituto de Medicina Tropical "Alexander von Humboldt" Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Incardona, Sandra
AU - Incardona S
AD - 3Foundation for Innovative New Diagnostics, Geneva, Switzerland.
FAU - Ding, Xavier C
AU - Ding XC
AD - 3Foundation for Innovative New Diagnostics, Geneva, Switzerland.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - 1Instituto de Medicina Tropical "Alexander von Humboldt"

Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - 2Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - 4Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Torres, Katherine
AU - Torres K
AD - 1Instituto de Medicina Tropical "Alexander von Humboldt" Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - 2Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Fever
MH - Humans
MH - Malaria/*diagnosis/parasitology
MH - Malaria, Vivax/*diagnosis/parasitology
MH - Nucleic Acid Amplification Techniques
MH - Peru
MH - Plasmodium/genetics/*isolation & purification
MH - Plasmodium vivax/genetics/*isolation & purification
MH - Polymerase Chain Reaction
MH - Sensitivity and Specificity
PMC - PMC7543827
EDAT- 2020/08/05 06:00
MHDA- 2020/11/24 06:00
CRDT- 2020/08/05 06:00
PHST- 2020/08/05 06:00 [pubmed]
PHST- 2020/11/24 06:00 [medline]
PHST- 2020/08/05 06:00 [entrez]
AID - 10.4269/ajtmh.20-0212 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2020 Oct;103(4):1549-1552. doi: 10.4269/ajtmh.20-0212.

PMID- 33072692
OWN - NLM
STAT- MEDLINE
DCOM- 20210514
LR - 20210514
IS - 2296-2565 (Print)

IS - 2296-2565 (Linking)
VI - 8
DP - 2020
TI - Open-Source 3D Printable GPS Tracker to Characterize the Role of Human
      Population Movement on Malaria Epidemiology in River Networks: A Proof-
      of-Concept Study in the Peruvian Amazon.
PG - 526468
LID - 10.3389/fpubh.2020.526468 [doi]
AB - Human movement affects malaria epidemiology at multiple geographical
      levels; however, few studies measure the role of human movement in the
      Amazon Region due to the challenging conditions and cost of movement
      tracking technologies. We developed an open-source low-cost 3D printable
      GPS-tracker and used this technology in a cohort study to characterize
      the role of human population movement in malaria epidemiology in a rural
      riverine village in the Peruvian Amazon. In this pilot study of 20
      participants (mean age = 40 years old), 45,980 GPS coordinates were
      recorded over 1 month. Characteristic movement patterns were observed
      relative to the infection status and occupation of the participants.
      Applying two analytical animal movement ecology methods, utilization
      distributions (UDs) and integrated step selection functions (iSSF), we
      showed contrasting environmental selection and space use patterns
      according to infection status. These data suggested an important role of
      human movement in the epidemiology of malaria in the Peruvian Amazon due
      to high connectivity between villages of the same riverine network,
      suggesting limitations of current community-based control strategies. We
      additionally demonstrate the utility of this low-cost technology with
      movement ecology analysis to characterize human movement in resource-poor
      environments.

Llanos-
      Cuentas.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Health Innovation Laboratory, Institute of Tropical Medicine
"Alexander
      von Humboldt", Universidad Peruana Cayetano Heredia, Lima,
Peru.
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California, San Diego, La Jolla, CA, United States.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Fornace, Kimberly
AU - Fornace K
AD - Faculty of Infectious and Tropical Diseases, London School of
Hygiene and
      Tropical Medicine, London, United Kingdom.
FAU - Wong, Daniel
AU - Wong D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Padilla-Huamantinco, Pierre G
AU - Padilla-Huamantinco PG
AD - Health Innovation Laboratory, Institute of Tropical Medicine
"Alexander
      von Humboldt", Universidad Peruana Cayetano Heredia, Lima,
Peru.
AD - Departamento de Ingenieria, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Saldana-Lopez, Jose A
AU - Saldana-Lopez JA
AD - Departamento de Ingenieria, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Castillo-Meza, Ober E
AU - Castillo-Meza OE
AD - Departamento de Ingenieria, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Caballero-Andrade, Armando E
AU - Caballero-Andrade AE
AD - Departamento de Ingenieria, Facultad de Ciencias y Filosofia,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Manrique, Edgar
AU - Manrique E

AD - Health Innovation Laboratory, Institute of Tropical Medicine "Alexander
      von Humboldt", Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Ruiz-Cabrejos, Jorge
AU - Ruiz-Cabrejos J
AD - Health Innovation Laboratory, Institute of Tropical Medicine "Alexander
      von Humboldt", Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Barboza, Jose Luis
AU - Barboza JL
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Direccion Regional de Salud Loreto, Loreto, Peru.
FAU - Henostroza, German
AU - Henostroza G
AD - Department of Medicine, University of Alabama at Birmingham, Birmingham,
      AL, United States.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicinal Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Castro, Marcia C
AU - Castro MC
AD - Department of Global Health and Population, Harvard T. H. Chan School of
      Public Health, Boston, MA, United States.
FAU - Vinetz, Joseph M

AU - Vinetz JM
AD - Instituto de Medicinal Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Yale School of Medicine, New Haven, CT,
      United States.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicinal Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Facultad de Salud Publica y Administracion, Universidad Peruana Cayetano
      Heredia, Lima, Peru.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20200924
PL - Switzerland
TA - Front Public Health
JT - Frontiers in public health
JID - 101616579
MH - Adult
MH - Animals
MH - Cohort Studies
MH - Humans
MH - *Malaria/epidemiology
MH - Peru/epidemiology
MH - Pilot Projects
MH - *Rivers
PMC - PMC7542225
OTO - NOTNLM
OT - Amazon
OT - asymptomatic malaria
OT - connectivity
OT - human movement
OT - malaria
OT - movement ecology
OT - networks
OT - open-source
EDAT- 2020/10/20 06:00
MHDA- 2020/10/20 06:01
CRDT- 2020/10/19 05:58
PHST- 2020/01/13 00:00 [received]
PHST- 2020/08/21 00:00 [accepted]
PHST- 2020/10/19 05:58 [entrez]
PHST- 2020/10/20 06:00 [pubmed]
PHST- 2020/10/20 06:01 [medline]
AID - 10.3389/fpubh.2020.526468 [doi]
PST - epublish

SO - Front Public Health. 2020 Sep 24;8:526468. doi:
      10.3389/fpubh.2020.526468. eCollection 2020.

PMID- 32189616
OWN - NLM
STAT- MEDLINE
DCOM- 20200814
LR - 20210110
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 102
IP - 6
DP - 2020 Jun
TI - Multiplex Human Malaria Array: Quantifying Antigens for
Malaria Rapid
      Diagnostics.
PG - 1366-1369
LID - 10.4269/ajtmh.19-0763 [doi]
AB - Malaria antigen detection through rapid diagnostic tests
(RDTs) is widely
      used to diagnose malaria and estimate prevalence. To support
more
      sensitive next-generation RDT development and screen
asymptomatic
      malaria, we developed and evaluated the Q-Plex() Human Malaria
Array
      (Quansys Biosciences, Logan, UT), which quantifies the
antigens commonly
      used in RDTs-Plasmodium falciparum-specific histidine-rich
protein 2
      (HRP2), P. falciparum-specific lactate dehydrogenase (Pf LDH),
Plasmodium
      vivax -specific LDH (Pv LDH), and Pan malaria lactate
dehydrogenase (Pan
      LDH), and human C-reactive protein (CRP), a biomarker of
severity in
      malaria. At threshold levels yielding 99.5% or more diagnostic
      specificity, diagnostic sensitivities against polymerase chain
reaction-
      confirmed malaria for HRP2, Pf LDH, Pv LDH, and Pan LDH were
92.7%,
      71.5%, 46.1%, and 83.8%, respectively. P. falciparum culture
strains and
      samples from Peru indicated that HRP2 and Pf LDH combined
improves
      detection of P. falciparum parasites with hrp2 and hrp3
deletions. This
      array can be used for antigen-based malaria screening and
detecting
      hrp2/3 deletion mutants of P. falciparum.
FAU - Jang, Ihn Kyung
AU - Jang IK
AD - Diagnostics, PATH, Seattle, Washington.
FAU - Tyler, Abby

AU - Tyler A
AD - Quansys Biosciences, Logan, Utah.
FAU - Lyman, Chris
AU - Lyman C
AD - Quansys Biosciences, Logan, Utah.
FAU - Rek, John C
AU - Rek JC
AD - Infectious Diseases Research Collaboration, Kampala, Uganda.
FAU - Arinaitwe, Emmanuel
AU - Arinaitwe E
AD - Infectious Diseases Research Collaboration, Kampala, Uganda.
FAU - Adrama, Harriet
AU - Adrama H
AD - Infectious Diseases Research Collaboration, Kampala, Uganda.
FAU - Murphy, Maxwell
AU - Murphy M
AD - Department of Medicine, University of California at San Francisco, San
      Francisco, California.
FAU - Imwong, Mallika
AU - Imwong M
AD - Faculty of Tropical Medicine, Department of Molecular Tropical Medicine
      and Genetics, Mahidol University, Bangkok, Thailand.
FAU - Proux, Stephane
AU - Proux S
AD - Faculty of Tropical Medicine, Mahidol-Oxford Tropical Medicine Research
      Unit, Shoklo Malaria Research Unit, Mahidol University, Mae Sot,
      Thailand.
FAU - Haohankhunnatham, Warat
AU - Haohankhunnatham W
AD - Faculty of Tropical Medicine, Mahidol-Oxford Tropical Medicine Research
      Unit, Shoklo Malaria Research Unit, Mahidol University, Mae Sot,
      Thailand.
FAU - Barney, Rebecca
AU - Barney R
AD - Diagnostics, PATH, Seattle, Washington.
FAU - Rashid, Andrew
AU - Rashid A
AD - Diagnostics, PATH, Seattle, Washington.
FAU - Kalnoky, Michael
AU - Kalnoky M
AD - Diagnostics, PATH, Seattle, Washington.
FAU - Kahn, Maria
AU - Kahn M
AD - Diagnostics, PATH, Seattle, Washington.
FAU - Golden, Allison
AU - Golden A
AD - Diagnostics, PATH, Seattle, Washington.
FAU - Nosten, Francois

AU - Nosten F
AD - Nuffield Department of Medicine, Centre for Tropical Medicine and Global
      Health, University of Oxford, Oxford, United Kingdom.
AD - Faculty of Tropical Medicine, Mahidol-Oxford Tropical Medicine Research
      Unit, Shoklo Malaria Research Unit, Mahidol University, Mae Sot,
      Thailand.
FAU - Greenhouse, Bryan
AU - Greenhouse B
AD - Department of Medicine, University of California at San Francisco, San
      Francisco, California.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Department of Cellular and Molecular Sciences, Institute of Tropical
      Medicine Alexander von Humboldt, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Domingo, Gonzalo J
AU - Domingo GJ
AD - Diagnostics, PATH, Seattle, Washington.
LA - eng
GR - U19 AI089674/AI/NIAID NIH HHS/United States
PT - Journal Article
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
RN - 0 (Antigens, Protozoan)
RN - 0 (DNA, Protozoan)
SB - IM
MH - Antigens, Protozoan/genetics
MH - DNA, Protozoan/*genetics
MH - Diagnostic Tests, Routine
MH - Humans
MH - Malaria/*diagnosis
MH - Multiplex Polymerase Chain Reaction/*methods
MH - Plasmodium/*genetics
MH - Sensitivity and Specificity
MH - Species Specificity
PMC - PMC7253106
EDAT- 2020/03/20 06:00
MHDA- 2020/08/15 06:00
CRDT- 2020/03/20 06:00
PHST- 2020/03/20 06:00 [pubmed]
PHST- 2020/08/15 06:00 [medline]
PHST- 2020/03/20 06:00 [entrez]
AID - 10.4269/ajtmh.19-0763 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2020 Jun;102(6):1366-1369. doi: 10.4269/ajtmh.19-0763.

PMID- 32316981
OWN - NLM
STAT- MEDLINE
DCOM- 20201208
LR - 20201214
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 19
IP - 1
DP - 2020 Apr 21
TI - Economic costs analysis of uncomplicated malaria case management in the
      Peruvian Amazon.
PG - 161
LID - 10.1186/s12936-020-03233-5 [doi]
AB - BACKGROUND: Case management is one of the principal strategies for
      malaria control. This study aimed to estimate the economic costs of
      uncomplicated malaria case management and explore the influence of
      health-seeking behaviours on those costs. METHODS: A knowledge, attitudes
      and practices (KAP) survey was applied to 680 households of fifteen
      communities in Mazan-Loreto in March 2017, then a socio-economic survey
      was conducted in September 2017 among 161 individuals with confirmed
      uncomplicated malaria in the past 3 months. Total costs per episode were
      estimated from both provider (Ministry of Health, MoH) and patient
      perspectives. Direct costs were estimated using a standard costing
      estimation procedure, while the indirect costs considered the loss of
      incomes among patients, substitute labourers and companions due to
      illness in terms of the monthly minimum wage. Sensitivity analysis
      evaluated the uncertainty of the average cost per episode. RESULTS: The
      KAP survey showed that most individuals (79.3%) that had malaria went to
      a health facility for a diagnosis and treatment, 2.7% received those
      services from community health workers, and 8% went to a drugstore or
      were self-treated at home. The average total cost per episode in the
      Mazan district was US$ 161. The cost from the provider's perspective was

US$ 30.85 per episode while from the patient's perspective the estimated
cost was US$ 131 per episode. The average costs per Plasmodium falciparum
episode (US$ 180) were higher than those per Plasmodium vivax episode
(US$ 156) due to longer time lost from work by patients with P.
falciparum infections (22.2 days) than by patients with P. vivax
infections (17.0 days). The delayed malaria diagnosis (after 48 h of the
onset of symptoms) was associated with the time lost from work due to
illness (adjusted mean ratio 1.8; 95% CI 1.3, 2.6). The average cost per
malaria episode was most sensitive to the uncertainty around the lost
productivity cost due to malaria. CONCLUSIONS: Despite the provision of
free malaria case management by MoH, there is delay in seeking care and
the costs of uncomplicated malaria are mainly borne by the families.
These costs are not well perceived by the society and the substantial
financial impact of the disease can be frequently undervalued in public
policy planning.
FAU - Moreno-Gutierrez, Diamantina
AU - Moreno-Gutierrez D
AD - Facultad de Medicina Humana, Universidad Nacional de la Amazonia Peruana,
Iquitos, Loreto, 160, Peru. dlmorenog@gmail.com.
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
Louvain, 1200, Brussels, Belgium. dlmorenog@gmail.com.
AD - Centre for Health Economics Research and Modelling Infectious Diseases,
Vaccine and Infectious Disease Institute, University of Antwerp, 2000,
Antwerp, Belgium. dlmorenog@gmail.com.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
Louvain, 1200, Brussels, Belgium.
AD - Fund for Scientific Research FNRS, 1000, Brussels, Belgium.
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
Peruana Cayetano Heredia, Lima, 31, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical "Alexander von Humboldt",

Universidad
      Peruana Cayetano Heredia, Lima, 31, Peru.
AD - Facultad de Salud Publica y Administracion, Universidad
Peruana Cayetano
      Heredia, Lima, 31, Peru.
FAU - Bilcke, Joke
AU - Bilcke J
AD - Centre for Health Economics Research and Modelling Infectious
Diseases,
      Vaccine and Infectious Disease Institute, University of
Antwerp, 2000,
      Antwerp, Belgium.
FAU - Barboza, Jose Luis
AU - Barboza JL
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, 31, Peru.
FAU - Hayette, Marie-Pierre
AU - Hayette MP
AD - Department of Clinical Microbiology, Center for
Interdisciplinary
      Research on Medicines (CIRM), University Hospital of Liege,
4000, Liege,
      Belgium.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, 31, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, 31,
Peru.
FAU - Aguirre, Kristhian
AU - Aguirre K
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, 31, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, 31, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, 31,
Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, 31,
Peru.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Facultad de Medicina Humana, Universidad Nacional de la

Amazonia Peruana,
      Iquitos, Loreto, 160, Peru.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
      Louvain, 1200, Brussels, Belgium.
FAU - Beutels, Philippe
AU - Beutels P
AD - Centre for Health Economics Research and Modelling Infectious Diseases,
      Vaccine and Infectious Disease Institute, University of Antwerp, 2000,
      Antwerp, Belgium.
LA - eng
GR - ARES-CCD/Academie de recherche et d'enseignement superieur
GR - PRD Peru 2014-2019/Academie de recherche et d'enseignement superieur
GR - 008-2014-FONDECYT/Consejo Nacional de Ciencia, Tecnologia e Innovacion
      Tecnologica
PT - Journal Article
DEP - 20200421
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Aged, 80 and over
MH - Case Management/*economics
MH - Child
MH - Child, Preschool
MH - Female
MH - *Health Knowledge, Attitudes, Practice
MH - Humans
MH - Infant
MH - Malaria, Falciparum/*prevention & control
MH - Malaria, Vivax/*prevention & control
MH - Male
MH - Middle Aged
MH - Peru
MH - Young Adult
PMC - PMC7175533
OTO - NOTNLM
OT - Cost
OT - Economic
OT - Health care-seeking behaviour
OT - Malaria
OT - Management
OT - Peru
EDAT- 2020/04/23 06:00

MHDA- 2020/12/15 06:00
CRDT- 2020/04/23 06:00
PHST- 2019/11/28 00:00 [received]
PHST- 2020/04/10 00:00 [accepted]
PHST- 2020/04/23 06:00 [entrez]
PHST- 2020/04/23 06:00 [pubmed]
PHST- 2020/12/15 06:00 [medline]
AID - 10.1186/s12936-020-03233-5 [doi]
AID - 10.1186/s12936-020-03233-5 [pii]
PST - epublish
SO - Malar J. 2020 Apr 21;19(1):161. doi: 10.1186/
s12936-020-03233-5.

PMID- 32150544
OWN - NLM
STAT- MEDLINE
DCOM- 20200512
LR - 20200512
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 14
IP - 3
DP - 2020 Mar
TI - Human Plasmodium vivax diversity, population structure and
evolutionary
      origin.
PG - e0008072
LID - 10.1371/journal.pntd.0008072 [doi]
AB - More than 200 million malaria clinical cases are reported each
year due
      to Plasmodium vivax, the most widespread Plasmodium species in
the world.
      This species has been neglected and understudied for a long
time, due to
      its lower mortality in comparison with Plasmodium falciparum.
A renewed
      interest has emerged in the past decade with the discovery of
      antimalarial drug resistance and of severe and even fatal
human cases.
      Nonetheless, today there are still significant gaps in our
understanding
      of the population genetics and evolutionary history of P.
vivax,
      particularly because of a lack of genetic data from Africa. To
address
      these gaps, we genotyped 14 microsatellite loci in 834 samples
obtained
      from 28 locations in 20 countries from around the world. We
discuss the
      worldwide population genetic structure and diversity and the
evolutionary
      origin of P. vivax in the world and its introduction into the
Americas.
      This study demonstrates the importance of conducting genome-

wide analyses
      of P. vivax in order to unravel its complex evolutionary history.
FAU - Rougeron, Virginie
AU - Rougeron V
AUID- ORCID: 0000-0001-5873-5681
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD), CREES,
      Montpellier, France.
FAU - Elguero, Eric
AU - Elguero E
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD), CREES,
      Montpellier, France.
FAU - Arnathau, Celine
AU - Arnathau C
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD), CREES,
      Montpellier, France.
FAU - Acuna Hidalgo, Beatriz
AU - Acuna Hidalgo B
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD), CREES,
      Montpellier, France.
FAU - Durand, Patrick
AU - Durand P
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD), CREES,
      Montpellier, France.
FAU - Houze, Sandrine
AU - Houze S
AD - Service de Parasitologie-mycologie CNR du Paludisme, AP-HP Hopital
      Bichat, Paris, France.
FAU - Berry, Antoine
AU - Berry A
AD - Centre de Physiopathologie de Toulouse-Purpan (CPTP), Institut National
      de la Sante et de la Recherche Medicale (INSERM) UMR1043, CNRS UMR5282,
      Universite de Toulouse Paul Sabatier, F-31300 Toulouse, France.
AD - Service de Parasitologie-Mycologie, Institut Federatif de Biologie,
      Centre Hospitalier Universitaire de Toulouse, F-31300 Toulouse, France.
FAU - Zakeri, Sedigheh
AU - Zakeri S
AD - Malaria and Vector Research Group (MVRG), Biotechnology Research Center
      (BRC), Pasteur Institute of Iran, Tehran, Iran.
FAU - Haque, Rashidul
AU - Haque R
AD - Emerging Infections & Parasitology Laboratory, icddr,b,

Mohakhali, Dhaka,
      Bangladesh.
FAU - Shafiul Alam, Mohammad
AU - Shafiul Alam M
AUID- ORCID: 0000-0001-8330-5499
AD - Emerging Infections & Parasitology Laboratory, icddr,b,
Mohakhali, Dhaka,
      Bangladesh.
FAU - Nosten, Francois
AU - Nosten F
AUID- ORCID: 0000-0002-7951-0745
AD - Centre for Tropical Medicine and Global Health,Oxford, United
Kingdom.
AD - Shoklo Malaria Research Unit, Mahidol-Oxford Tropical Medicine
Research
      Unit, Faculty of Tropical Medicine, Mahidol University, Mae
Sot,
      Thailand.
FAU - Severini, Carlo
AU - Severini C
AD - Department of Infectious Diseases, Istituto Superiore di
Sanita, Rome,
      Italy.
FAU - Gebru Woldearegai, Tamirat
AU - Gebru Woldearegai T
AUID- ORCID: 0000-0001-9508-1787
AD - Institute of Tropical Medicine, University of Tubingen,
Tubingen,
      Germany.
AD - German Centre for Infection Research (DZIF), partner site
Tubingen,
      Tubingen, Germany.
AD - Department of Medical Laboratory Sciences, College of Medical
and Health
      Sciences, Haramaya University, Harar, Ethiopia.
FAU - Mordmuller, Benjamin
AU - Mordmuller B
AUID- ORCID: 0000-0001-9101-2768
AD - Institute of Tropical Medicine, University of Tubingen,
Tubingen,
      Germany.
AD - German Centre for Infection Research (DZIF), partner site
Tubingen,
      Tubingen, Germany.
FAU - Kremsner, Peter Gottfried
AU - Kremsner PG
AD - Institute of Tropical Medicine, University of Tubingen,
Tubingen,
      Germany.
FAU - Gonzalez-Ceron, Lilia
AU - Gonzalez-Ceron L
AUID- ORCID: 0000-0002-2347-5581
AD - Regional Centre of Research in Public Health, National
Institute of

      Public Health, Tapachula, Chiapas, Mexico.
FAU - Fontecha, Gustavo
AU - Fontecha G
AD - Microbiology Research Institute, Universidad Nacional Autonoma
de
      Honduras, Tegucigalpa, Honduras.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander Von Humboldt,
Universidad
      Peruana Cayetano Heredia, AP, Lima, Peru.
FAU - Musset, Lise
AU - Musset L
AD - Unit, Institut Pasteur de Guyane, BP6010, French Guiana.
FAU - Legrand, Eric
AU - Legrand E
AD - Malaria Genetic and Resistance Group, Biology of Host-Parasite
      Interactions Unit, Institut Pasteur, Paris, France.
FAU - Noya, Oscar
AU - Noya O
AD - Centro para Estudios Sobre Malaria, Instituto de Altos
Estudios en Salud
      "Dr. Arnoldo Gabaldon", Ministerio del Poder Popular para la
Salud and
      Instituto de Medicina Tropical, Universidad Central de
Venezuela,
      Maracay, Caracas, Venezuela.
FAU - Pumpaibool, Tepanata
AU - Pumpaibool T
AD - Biomedical Science, Graduate School, Chulalongkorn University,
Bangkok,
      Thailand.
AD - Malaria Research Programme, College of Public Health Science,
      Chulalongkorn University, Bangkok, Thailand.
FAU - Harnyuttanakorn, Pingchai
AU - Harnyuttanakorn P
AD - Malaria Research Programme, College of Public Health Science,
      Chulalongkorn University, Bangkok, Thailand.
AD - Department of Biology, Faculty of Science, Chulalongkorn
University,
      Bangkok, Thailand.
FAU - Lekweiry, Khadijetou Mint
AU - Lekweiry KM
AD - UR-Genomes et milieux, Faculte des Sciences et Techniques,
Universite de
      Nouakchott Al-Aasriya, Mauritania.
FAU - Mohamad Albsheer, Musab
AU - Mohamad Albsheer M
AD - Department of Parasitology and Medical Entomology, Medical
Campus,
      University of Khartoum, Sudan.
FAU - Mahdi Abdel Hamid, Muzamil
AU - Mahdi Abdel Hamid M
AD - Department of Parasitology and Medical Entomology, Medical

Campus,
      University of Khartoum, Sudan.
FAU - Boukary, Ali Ould Mohamed Salem
AU - Boukary AOMS
AD - UR-Genomes et milieux, Faculte des Sciences et Techniques,
Universite de
      Nouakchott Al-Aasriya, Mauritania.
AD - Aix Marseille Univ, IRD, AP-HM, SSA, VITROME, Marseille,
France.
FAU - Trape, Jean-Francois
AU - Trape JF
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD),
CREES,
      Montpellier, France.
FAU - Renaud, Francois
AU - Renaud F
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD),
CREES,
      Montpellier, France.
FAU - Prugnolle, Franck
AU - Prugnolle F
AD - Laboratoire MIVEGEC (Universite de Montpellier-CNRS-IRD),
CREES,
      Montpellier, France.
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20200309
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - *Genetic Variation
MH - *Genotype
MH - Genotyping Techniques
MH - Global Health
MH - Humans
MH - Malaria, Vivax/*parasitology
MH - Plasmodium vivax/*classification/*genetics/isolation &
purification
PMC - PMC7082039
COIS- The authors have declared that no competing interests exist.
EDAT- 2020/03/10 06:00
MHDA- 2020/05/13 06:00
CRDT- 2020/03/10 06:00
PHST- 2019/03/15 00:00 [received]
PHST- 2020/01/18 00:00 [accepted]
PHST- 2020/03/19 00:00 [revised]
PHST- 2020/03/10 06:00 [pubmed]
PHST- 2020/05/13 06:00 [medline]
PHST- 2020/03/10 06:00 [entrez]
AID - 10.1371/journal.pntd.0008072 [doi]
AID - PNTD-D-19-00275 [pii]

PST - epublish
SO - PLoS Negl Trop Dis. 2020 Mar 9;14(3):e0008072. doi:
      10.1371/journal.pntd.0008072. eCollection 2020 Mar.

PMID- 31770108
OWN - NLM
STAT- MEDLINE
DCOM- 20210510
LR - 20210510
IS - 2379-3708 (Electronic)
IS - 2379-3708 (Linking)
VI - 5
IP - 1
DP - 2020 Jan 16
TI - Anti-MSP-10 IgG indicates recent exposure to Plasmodium vivax
infection
      in the Peruvian Amazon.
LID - 10.1172/jci.insight.130769 [doi]
LID - 130769 [pii]
AB - BACKGROUNDSerological tools for the accurate detection of
recent malaria
      exposure are needed to guide and monitor malaria control
efforts. IgG
      responses against Plasmodium vivax and P. falciparum merozoite
surface
      protein-10 (MSP10) were measured as a potential way to
identify recent
      malaria exposure in the Peruvian Amazon.METHODSA field-based
study
      included 470 participants in a longitudinal cohort who
completed a
      comprehensive evaluation: light microscopy and PCR on
enrollment, at
      least 1 monthly follow-up by light microscopy, a second PCR,
and serum
      and dried blood spots for serological analysis at the end of
the follow-
      up. IgG titers against novel mammalian cell-produced
recombinant PvMSP10
      and PfMSP10 were determined by ELISA.RESULTSDuring the follow-
up period,
      205 participants were infected, including 171 with P. vivax,
26 with P.
      falciparum, 6 with infections by both species but at different
times, and
      2 with mixed infections. Exposure to P. vivax was more
accurately
      identified when serological responses to PvMSP10 were obtained
from serum
      (sensitivity, 58.1%; specificity, 81.8%; AUC: 0.76) than from
dried blood
      spots (sensitivity, 35.2; specificity, 83.5%; AUC: 0.64) (PAUC
< 0.001).
      Sensitivity was highest (serum, 82.9%; dried blood spot,

45.7%) with
      confirmed P. vivax infections occurring 7-30 days before sample
      collection; sensitivity decreased significantly in relation to time since
      last documented infection. PvMSP10 serological data did not show evidence
      of interspecies cross-reactivity. Anti-PfMSP10 responses poorly
      discriminated between P. falciparum-exposed and nonexposed individuals
      (AUC = 0.59; P > 0.05).CONCLUSIONAnti-PvMSP10 IgG indicates recent
      exposure to P. vivax at the population level in the Amazon region. Serum,
      not dried blood spots, should be used for such serological
      tests.FUNDINGCooperative agreement U19AI089681 from the United States
      Public Health Service, NIH/National Institute of Allergy and Infectious
      Diseases, as the Amazonian International Center of Excellence in Malaria
      Research.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Fund for Scientific Research FNRS, Brussels, Belgium.
AD - Research Institute of Health and Society, Universite catholique de
      Louvain, Brussels, Belgium.
AD - Instituto de Medicina, Tropical "Alexander von Humboldt," Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Patra, Kailash P
AU - Patra KP
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego School of Medicine, La Jolla, California, USA.
FAU - Calderon, Maritza
AU - Calderon M
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, and.
FAU - Torres, Katherine
AU - Torres K
AD - Instituto de Medicina, Tropical "Alexander von Humboldt," Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina, Tropical "Alexander von Humboldt,"

Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, and.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Arocutipa, Edith
AU - Arocutipa E
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, and.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Malaga, Edith
AU - Malaga E
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, and.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Garro, Katherine
AU - Garro K
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Fernandez, Carlos
AU - Fernandez C
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Trompeter, Grace
AU - Trompeter G
AD - Program in Global Disease Epidemiology and Control, Department of
      International Health, Bloomberg School of Public Health, Johns Hopkins
      University, Baltimore, Maryland, USA.
FAU - Alnasser, Yossef
AU - Alnasser Y
AD - Program in Global Disease Epidemiology and Control, Department of
      International Health, Bloomberg School of Public Health, Johns Hopkins
      University, Baltimore, Maryland, USA.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina, Tropical "Alexander von Humboldt," Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Gilman, Robert H

AU - Gilman RH
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, and.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Program in Global Disease Epidemiology and Control, Department of
      International Health, Bloomberg School of Public Health, Johns Hopkins
      University, Baltimore, Maryland, USA.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego School of Medicine, La Jolla, California, USA.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, and.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20200116
PL - United States
TA - JCI Insight
JT - JCI insight
JID - 101676073
RN - 0 (Antigens, Protozoan)
RN - 0 (Immunoglobulin G)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Adolescent
MH - Adult
MH - Antigens, Protozoan/genetics/*immunology
MH - Child
MH - Child, Preschool
MH - Cohort Studies
MH - Female
MH - Humans
MH - Immunoglobulin G/*blood
MH - Malaria, Falciparum/immunology
MH - Malaria, Vivax/diagnosis/epidemiology/*immunology
MH - Male
MH - Multivariate Analysis
MH - Peru/epidemiology
MH - Plasmodium falciparum
MH - Plasmodium vivax/*immunology

MH - Protozoan Proteins/genetics/*immunology
MH - Young Adult
PMC - PMC7030819
OTO - NOTNLM
OT - Diagnostics
OT - Epidemiology
OT - Immunology
OT - Infectious disease
OT - Malaria
EDAT- 2019/11/27 06:00
MHDA- 2021/05/11 06:00
CRDT- 2019/11/27 06:00
PHST- 2019/06/03 00:00 [received]
PHST- 2019/11/25 00:00 [accepted]
PHST- 2019/11/27 06:00 [pubmed]
PHST- 2021/05/11 06:00 [medline]
PHST- 2019/11/27 06:00 [entrez]
AID - 130769 [pii]
AID - 10.1172/jci.insight.130769 [doi]
PST - epublish
SO - JCI Insight. 2020 Jan 16;5(1). pii: 130769. doi:
      10.1172/jci.insight.130769.

PMID- 31918718
OWN - NLM
STAT- MEDLINE
DCOM- 20200817
LR - 20200817
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 19
IP - 1
DP - 2020 Jan 9
TI - Quantification of malaria antigens PfHRP2 and pLDH by
quantitative
      suspension array technology in whole blood, dried blood spot
and plasma.
PG - 12
LID - 10.1186/s12936-019-3083-5 [doi]
AB - BACKGROUND: Malaria diagnostics by rapid diagnostic test (RDT)
relies
      primarily on the qualitative detection of Plasmodium
falciparum
      histidine-rich protein 2 (PfHRP2) and Plasmodium spp lactate
      dehydrogenase (pLDH). As novel RDTs with increased sensitivity
are being
      developed and implemented as point of care diagnostics, highly
sensitive
      laboratory-based assays are needed for evaluating RDT
performance. Here,
      a quantitative suspension array technology (qSAT) was
developed,
      validated and applied for the simultaneous detection of PfHRP2
and pLDH

in a variety of biological samples (whole blood, plasma and dried blood spots) from individuals living in different endemic countries. RESULTS: The qSAT was specific for the target antigens, with analytical ranges of 6.8 to 762.8 pg/ml for PfHRP2 and 78.1 to 17076.6 pg/ml for P. falciparum LDH (Pf-LDH). The assay detected Plasmodium vivax LDH (Pv-LDH) at a lower sensitivity than Pf-LDH (analytical range of 1093.20 to 187288.5 pg/ml). Both PfHRP2 and pLDH levels determined using the qSAT showed to positively correlate with parasite densities determined by quantitative PCR (Spearman r = 0.59 and 0.75, respectively) as well as microscopy (Spearman r = 0.40 and 0.75, respectively), suggesting the assay to be a good predictor of parasite density. CONCLUSION: This immunoassay can be used as a reference test for the detection and quantification of PfHRP2 and pLDH, and could serve for external validation of RDT performance, to determine antigen persistence after parasite clearance, as well as a complementary tool to assess malaria burden in endemic settings.

FAU - Martianez-Vendrell, Xavier
AU - Martianez-Vendrell X
AD - ISGlobal, Hospital Clinic of Barcelona, Universitat de Barcelona, Carrer Rossello 153 (CEK building), 08036, Barcelona, Spain.
FAU - Jimenez, Alfons
AU - Jimenez A
AD - ISGlobal, Hospital Clinic of Barcelona, Universitat de Barcelona, Carrer Rossello 153 (CEK building), 08036, Barcelona, Spain.
AD - Spanish Consortium for Research in Epidemiology and Public Health (CIBERESP), Madrid, Spain.
FAU - Vasquez, Ana
AU - Vasquez A
AD - Grupo Malaria, Facultad de Medicina, Universidad de Antioquia, Medellin, Colombia.
FAU - Campillo, Ana
AU - Campillo A
AD - FIND, Geneva, Switzerland.
FAU - Incardona, Sandra
AU - Incardona S
AD - FIND, Geneva, Switzerland.

FAU - Gonzalez, Raquel
AU - Gonzalez R
AD - ISGlobal, Hospital Clinic of Barcelona, Universitat de Barcelona, Carrer
      Rossello 153 (CEK building), 08036, Barcelona, Spain.
AD - Spanish Consortium for Research in Epidemiology and Public Health
      (CIBERESP), Madrid, Spain.
AD - Centro de Investigacao em Saude da Manhica (CISM), Maputo, Mozambique.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Torres, Katherine
AU - Torres K
AD - Laboratorio de Malaria, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Oyibo, Wellington
AU - Oyibo W
AD - ANDI Centre of Excellence for Malaria Diagnosis, College of Medicine,
      University of Lagos, Idi-Aaraba, Lagos, Nigeria.
FAU - Faye, Babacar
AU - Faye B
AD - Service de Parasitologie-Mycologie, Faculte de Medecine, Pharmacie et
      Odontologie, Universite Cheikh Anta Diop de Dakar, Dakar, Senegal.
FAU - Macete, Eusebio
AU - Macete E
AD - Centro de Investigacao em Saude da Manhica (CISM), Maputo, Mozambique.
FAU - Menendez, Clara
AU - Menendez C
AD - ISGlobal, Hospital Clinic of Barcelona, Universitat de Barcelona, Carrer
      Rossello 153 (CEK building), 08036, Barcelona, Spain.
AD - Spanish Consortium for Research in Epidemiology and Public Health
      (CIBERESP), Madrid, Spain.
AD - Centro de Investigacao em Saude da Manhica (CISM), Maputo, Mozambique.
FAU - Ding, Xavier C
AU - Ding XC
AD - FIND, Geneva, Switzerland.
FAU - Mayor, Alfredo
AU - Mayor A
AUID- ORCID: http://orcid.org/0000-0003-3890-2897
AD - ISGlobal, Hospital Clinic of Barcelona, Universitat de

Barcelona, Carrer
      Rossello 153 (CEK building), 08036, Barcelona, Spain.
      alfredo.mayor@isglobal.org.
AD - Spanish Consortium for Research in Epidemiology and Public
Health
      (CIBERESP), Madrid, Spain. alfredo.mayor@isglobal.org.
AD - Centro de Investigacao em Saude da Manhica (CISM), Maputo,
Mozambique.
      alfredo.mayor@isglobal.org.
LA - eng
PT - Journal Article
DEP - 20200109
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antigens, Protozoan)
RN - 0 (HRP-2 antigen, Plasmodium falciparum)
RN - 0 (Protozoan Proteins)
RN - 6SO6U10H04 (Biotin)
RN - EC 1.1.1.27 (L-Lactate Dehydrogenase)
SB - IM
MH - Adolescent
MH - Adult
MH - Africa
MH - Animals
MH - Antigens, Protozoan/*blood
MH - Biotin
MH - Calibration
MH - Child
MH - Cross-Sectional Studies
MH - Female
MH - High-Throughput Nucleotide Sequencing/methods
MH - Humans
MH - L-Lactate Dehydrogenase/*blood
MH - Malaria, Falciparum/blood/*diagnosis
MH - Malaria, Vivax/blood/*diagnosis
MH - Mice
MH - Microspheres
MH - Parasitemia/blood/diagnosis
MH - Pregnancy
MH - Protozoan Proteins/*blood
MH - Real-Time Polymerase Chain Reaction
MH - South America
MH - Spain
MH - Young Adult
PMC - PMC6953214
OTO - NOTNLM
OT - Histidine-rich protein 2
OT - Luminex
OT - Malaria
OT - Parasite lactate dehydrogenase
OT - Quantitative suspension array technology
OT - Rapid diagnostic test

EDAT- 2020/01/11 06:00
MHDA- 2020/08/18 06:00
CRDT- 2020/01/11 06:00
PHST- 2019/07/10 00:00 [received]
PHST- 2019/12/21 00:00 [accepted]
PHST- 2020/01/11 06:00 [entrez]
PHST- 2020/01/11 06:00 [pubmed]
PHST- 2020/08/18 06:00 [medline]
AID - 10.1186/s12936-019-3083-5 [doi]
AID - 10.1186/s12936-019-3083-5 [pii]
PST - epublish
SO - Malar J. 2020 Jan 9;19(1):12. doi: 10.1186/s12936-019-3083-5.

PMID- 31394079
OWN - NLM
STAT- MEDLINE
DCOM- 20200128
LR - 20200128
IS - 1873-6254 (Electronic)
IS - 0001-706X (Linking)
VI - 200
DP - 2019 Dec
TI - A pilot evaluation of alternative procedures to simplify LAMP-based
      malaria diagnosis in field conditions.
PG - 105125
LID - S0001-706X(19)30617-5 [pii]
LID - 10.1016/j.actatropica.2019.105125 [doi]
AB - Highly-sensitive and field-friendly diagnostic tools are needed for
      accurate detection of low-density malaria infections. Although loop-
      mediated isothermal amplification (LAMP) fulfills these conditions,
      operational challenges are still encountered during pilot population
      screenings in remote settings when employing Loopamp MALARIA Pan/Pf
      detection kit (Eiken Chemical Co.). This study evaluates different
      procedures for the simplification of sample preparation and result
      reading steps of current LAMP protocols. The reference 'Boil & Spin'
      (B&S) pre-amplification procedure was compared to three alternative
      methods, along with a colorimetric staining protocol based on malachite
      green. Results suggested that the B&S supernatant transference step may
      be omitted without an impact on test performance, even when colorimetry
      was incorporated to facilitate results visualization. Procedures skipping

centrifugation and/or heat-incubation were proved to be compatible with LAMP-based malaria DNA detection, but resulted in a low-to-moderate decrease in sensitivity and ambiguous result interpretation for the most straightforward protocol. Nevertheless, all simplified LAMP methods could still reach lower limits of detection than the currently used tools for malaria mass-screening (i.e. microscopy and rapid tests), indicating that these alternative strategies may deserve further consideration. This evaluation, therefore, demonstrates the feasibility of skipping some of the main procedural bottlenecks of LAMP-malaria protocols, a much-needed achievement to make point-of-care implementation of molecular diagnostics a reality.

FAU - Serra-Casas, Elisa
AU - Serra-Casas E
AD - Department of Biomedical Sciences, Institute of Tropical Medicine (Antwerp), Nationalestraat 155, 2000, Antwerp, Belgium.
FAU - Guetens, Pieter
AU - Guetens P
AD - Department of Biomedical Sciences, Institute of Tropical Medicine (Antwerp), Nationalestraat 155, 2000, Antwerp, Belgium.
FAU - Chiheb, Driss
AU - Chiheb D
AD - Department of Biomedical Sciences, Institute of Tropical Medicine (Antwerp), Nationalestraat 155, 2000, Antwerp, Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Department of Biomedical Sciences, Institute of Tropical Medicine (Antwerp), Nationalestraat 155, 2000, Antwerp, Belgium; Instituto de Medicina Tropical Alexander von Humboldt, Universidad Peruana Cayetano Heredia, AP 4314, Lima 100, Peru.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine (Antwerp), Nationalestraat 155, 2000, Antwerp, Belgium. Electronic address: arosanas@itg.be.
LA - eng

PT - Comparative Study
PT - Journal Article
DEP - 20190805
PL - Netherlands
TA - Acta Trop
JT - Acta tropica
JID - 0370374
SB - IM
MH - Diagnostic Tests, Routine/*methods
MH - Humans
MH - Malaria/*diagnosis
MH - Mass Screening/*methods
MH - Nucleic Acid Amplification Techniques/*methods
MH - Pilot Projects
MH - Plasmodium/*isolation & purification
MH - *Point-of-Care Systems
MH - Sensitivity and Specificity
OTO - NOTNLM
OT - Loop-mediated isothermal amplification (LAMP)
OT - Malaria infection
OT - Plasmodium
OT - Point-of-care diagnosis
OT - Sample preparation
EDAT- 2019/08/09 06:00
MHDA- 2020/01/29 06:00
CRDT- 2019/08/09 06:00
PHST- 2019/05/07 00:00 [received]
PHST- 2019/08/01 00:00 [revised]
PHST- 2019/08/02 00:00 [accepted]
PHST- 2019/08/09 06:00 [pubmed]
PHST- 2020/01/29 06:00 [medline]
PHST- 2019/08/09 06:00 [entrez]
AID - S0001-706X(19)30617-5 [pii]
AID - 10.1016/j.actatropica.2019.105125 [doi]
PST - ppublish
SO - Acta Trop. 2019 Dec;200:105125. doi: 10.1016/
j.actatropica.2019.105125.
      Epub 2019 Aug 5.

PMID- 31710604
OWN - NLM
STAT- MEDLINE
DCOM- 20200211
LR - 20201213
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 13
IP - 11
DP - 2019 Nov
TI - Microsatellite analysis reveals connectivity among
geographically distant
      transmission zones of Plasmodium vivax in the Peruvian Amazon:
A critical
      barrier to regional malaria elimination.

PG - e0007876
LID - 10.1371/journal.pntd.0007876 [doi]
AB - Despite efforts made over decades by the Peruvian government to eliminate
malaria, Plasmodium vivax remains a challenge for public health decision-
makers in the country. The uneven distribution of its incidence, plus its
complex pattern of dispersion, has made ineffective control measures
based on global information that lack the necessary detail to understand
transmission fully. In this sense, population genetic tools can
complement current surveillance. This study describes the genetic
diversity and population structure from September 2012 to March 2015 in
three geographically distant settlements, Cahuide (CAH), Lupuna (LUP) and
Santa Emilia (STE), located in the Peruvian Amazon. A total 777 P. vivax
mono-infections, out of 3264, were genotyped. Among study areas, LUP
showed 19.7% of polyclonal infections, and its genetic diversity (Hexp)
was 0.544. Temporal analysis showed a significant increment of polyclonal
infections and Hexp, and the introduction and persistence of a new
parasite population since March 2013. In STE, 40.1% of infections were
polyclonal, with Hexp = 0.596. The presence of four genetic clusters
without signals of clonal expansion and infections with lower parasite
densities compared against the other two areas were also found. At least
four parasite populations were present in CAH in 2012, where, after June
2014, malaria cases decreased from 213 to 61, concomitant with a decrease
in polyclonal infections (from 0.286 to 0.18), and expectedly variable
Hexp. Strong signals of gene flow were present in the study areas and
wide geographic distribution of highly diverse parasite populations were
found. This study suggests that movement of malaria parasites by human
reservoirs connects geographically distant malaria transmission areas in
the Peruvian Amazon. The maintenance of high levels of parasite genetic

      diversity through human mobility is a critical barrier to
malaria
      elimination in this region.
FAU - Manrique, Paulo
AU - Manrique P
AUID- ORCID: 0000-0003-3412-0249
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Miranda-Alban, Julio
AU - Miranda-Alban J
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Alarcon-Baldeon, Jhonatan
AU - Alarcon-Baldeon J
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Ramirez, Roberson
AU - Ramirez R
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Herrera, Henry
AU - Herrera H
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AUID- ORCID: 0000-0003-2662-2142
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y

Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AUID- ORCID: 0000-0002-3271-7028
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Fund for Scientific Research FNRS, Brussels, Belgium.
AD - Research Institute of Health and Society (IRSS), Universite catholique de
      Louvain, Brussels, Belgium.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Facultad de Salud Publica y Administracion, Universidad Peruana Cayetano
      Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Yale School of Medicine, Section of Infectious Diseases, Department of
      Internal Medicine, New Haven, Connecticut, United States of America.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Escalante, Ananias A
AU - Escalante AA
AD - Institute for Genomics and Evolutionary Medicine (IGEM), Temple
      University, Philadelphia, Pennsylvania, United States of America.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofa, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad

      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20191111
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Aged, 80 and over
MH - Child
MH - Child, Preschool
MH - *Disease Transmission, Infectious
MH - Female
MH - *Genotype
MH - Genotyping Techniques
MH - Humans
MH - Incidence
MH - Infant
MH - Infant, Newborn
MH - Longitudinal Studies
MH - Malaria, Vivax/*epidemiology/*parasitology/transmission
MH - Male
MH - Microsatellite Repeats
MH - Middle Aged
MH - Molecular Epidemiology
MH - Peru/epidemiology
MH - Plasmodium vivax/*classification/*genetics/isolation & purification
MH - Young Adult
PMC - PMC6874088
COIS- The authors have declared that no competing interests exist.
EDAT- 2019/11/12 06:00
MHDA- 2020/02/12 06:00
CRDT- 2019/11/12 06:00
PHST- 2019/07/04 00:00 [received]
PHST- 2019/10/25 00:00 [accepted]
PHST- 2019/11/21 00:00 [revised]
PHST- 2019/11/12 06:00 [pubmed]
PHST- 2020/02/12 06:00 [medline]
PHST- 2019/11/12 06:00 [entrez]
AID - 10.1371/journal.pntd.0007876 [doi]
AID - PNTD-D-19-01028 [pii]
PST - epublish

SO - PLoS Negl Trop Dis. 2019 Nov 11;13(11):e0007876. doi:
      10.1371/journal.pntd.0007876. eCollection 2019 Nov.

PMID- 31547821
OWN - NLM
STAT- MEDLINE
DCOM- 20191226
LR - 20200225
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 18
IP - 1
DP - 2019 Sep 23
TI - Evaluation of Plasmodium falciparum MSP10 and its development as a
      serological tool for the Peruvian Amazon region.
PG - 327
LID - 10.1186/s12936-019-2959-8 [doi]
AB - BACKGROUND: Different antigens are needed to characterize Plasmodium
      falciparum infection in terms of seroreactivity and targets for invasion
      inhibition, in order to guide and identify the proper use of such
      proteins as tools for the development of serological markers and/or as
      vaccine candidates. METHODS: IgG responses in 84 serum samples from
      individuals with P. falciparum infection [classified as symptomatic (Sym)
      or asymptomatic (Asym)], or acute Plasmodium vivax infection, from the
      Peruvian Amazon region, were evaluated by enzyme-linked immunosorbent
      assays specific for a baculovirus-produced recombinant protein P.
      falciparum Merozoite Surface Protein 10 (rMSP10) and for non-EGF region
      selected peptides of PfMSP10 selected by a bioinformatics tool
      (PfMSP10-1, PfMSP10-2 and PfMSP10-3). Monoclonal antibodies against the
      selected peptides were evaluated by western blotting, confocal microscopy
      and inhibition invasion assays. RESULTS: Seroreactivity analysis of the
      P. falciparum Sym- and Asym-infected individuals against rMSP10 showed a
      higher response as compared to the individuals with P. vivax acute
      infection. IgG responses against peptide PfMSP10-1 were weak.
      Interestingly high IgG response was found against peptide PfMSP10-2 and
      the combination of peptides PfMSP10-1 + PfMSP10-2. Monoclonal antibodies

were capable of detecting native PfMSP10 on purified schizonts by western blot and confocal microscopy. A low percentage of inhibition of merozoite invasion of erythrocytes in vitro was observed when the monoclonal antibodies were compared with the control antibody against AMA-1 antigen. Further studies are needed to evaluate the role of PfMSP10 in the merozoite invasion. CONCLUSIONS: The rMSP10 and the PfMSP10-2 peptide synthesized for this study may be useful antigens for evaluation of P. falciparum malaria exposure in Sym and Asym individuals from the Peruvian Amazon region. Moreover, these antigens can be used for further investigation of the role of this protein in other malaria-endemic areas.

FAU - Bendezu, Jorge
AU - Bendezu J
AUID- ORCID: http://orcid.org/0000-0001-7102-3144
AD - Laboratorios de Investigacion y Desarrollo, FARVET, Carretera Panamericana Sur No 766 km 198.5, Chincha Alta, Ica, Peru. eduar156@yahoo.es.
FAU - Villasis, Elizabeth
AU - Villasis E
AD - Laboratorios de Investigacion y Desarrollo "Abraham Vaisberg Wolach," Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt-Universidad Peruana Cayetano Heredia, Av. Honorio Delgado 430, San Martin de Porres, Lima, Peru.
FAU - Morales Ruiz, Sandra
AU - Morales Ruiz S
AUID- ORCID: http://orcid.org/0000-0003-0986-0798
AD - Laboratorios de Investigacion y Desarrollo, FARVET, Carretera Panamericana Sur No 766 km 198.5, Chincha Alta, Ica, Peru.
FAU - Garro, Katherine
AU - Garro K
AD - Laboratorios de Investigacion y Desarrollo "Abraham Vaisberg Wolach," Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Infante, Beronica
AU - Infante B
AD - Laboratorios de Investigacion y Desarrollo "Abraham Vaisberg Wolach,

      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Gutierrez-Loli, Renzo
AU - Gutierrez-Loli R
AD - Laboratorios de Investigacion y Desarrollo "Abraham Vaisberg Wolach,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Rodriguez, Pamela
AU - Rodriguez P
AD - Laboratorios de Investigacion y Desarrollo "Abraham Vaisberg Wolach,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Fernandez-Diaz, Manolo
AU - Fernandez-Diaz M
AUID- ORCID: http://orcid.org/0000-0001-6289-0270
AD - Laboratorios de Investigacion y Desarrollo, FARVET, Carretera
      Panamericana Sur No 766 km 198.5, Chincha Alta, Ica, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AUID- ORCID: http://orcid.org/0000-0002-1420-7729
AD - Laboratorios de Investigacion y Desarrollo "Abraham Vaisberg Wolach,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical Alexander von Humboldt-Universidad Peruana
      Cayetano Heredia, Av. Honorio Delgado 430, San Martin de Porres, Lima,
      Peru.
FAU - Torres, Katherine
AU - Torres K
AD - Laboratorios de Investigacion y Desarrollo "Abraham Vaisberg Wolach,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru. katherine.torres.f@upch.pe.
AD - Instituto de Medicina Tropical Alexander von Humboldt-Universidad Peruana
      Cayetano Heredia, Av. Honorio Delgado 430, San Martin de Porres, Lima,
      Peru. katherine.torres.f@upch.pe.
LA - eng
GR - 178-FINCyT-IB-2013/INNOVATE PERU
GR - 218-2015-FONDECYT/FONDECYT / CONCYTEC
GR - U19AI089681/NHI-USA
GR - D43TW007120/TW/FIC NIH HHS/United States
PT - Journal Article
DEP - 20190923

PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antigens, Protozoan)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Antigens, Protozoan/*analysis
MH - Humans
MH - Malaria, Falciparum/*diagnosis
MH - Peru
MH - Plasmodium falciparum/*isolation & purification
MH - Population Surveillance/*methods
MH - Protozoan Proteins/*analysis
MH - Seroepidemiologic Studies
PMC - PMC6757379
OTO - NOTNLM
OT - Monoclonal antibodies
OT - Peptides
OT - PfMSP10
OT - Plasmodium falciparum
EDAT- 2019/09/25 06:00
MHDA- 2019/12/27 06:00
CRDT- 2019/09/25 06:00
PHST- 2019/04/14 00:00 [received]
PHST- 2019/09/11 00:00 [accepted]
PHST- 2019/09/25 06:00 [entrez]
PHST- 2019/09/25 06:00 [pubmed]
PHST- 2019/12/27 06:00 [medline]
AID - 10.1186/s12936-019-2959-8 [doi]
AID - 10.1186/s12936-019-2959-8 [pii]
PST - epublish
SO - Malar J. 2019 Sep 23;18(1):327. doi: 10.1186/
s12936-019-2959-8.

PMID- 31511562
OWN - NLM
STAT- MEDLINE
DCOM- 20201028
LR - 20210110
IS - 2045-2322 (Electronic)
IS - 2045-2322 (Linking)
VI - 9
IP - 1
DP - 2019 Sep 11
TI - A multiplex qPCR approach for detection of pfhrp2 and pfhrp3
gene
      deletions in multiple strain infections of Plasmodium
falciparum.
PG - 13107
LID - 10.1038/s41598-019-49389-2 [doi]
AB - The rapid and accurate diagnosis of Plasmodium falciparum
malaria
      infection is an essential factor in malaria control.

Currently, malaria
      diagnosis in the field depends heavily on using rapid
diagnostic tests
      (RDTs) many of which detect circulating parasite-derived
histidine-rich
      protein 2 antigen (PfHRP2) in capillary blood. P. falciparum
strains
      lacking PfHRP2, due to pfhrp2 gene deletions, are an emerging
threat to
      malaria control programs. The novel assay described here,
named
      qHRP2/3-del, is well suited for high-throughput screening of
P.
      falciparum isolates to identify these gene deletions. The
qHRP2/3-del
      assay identified pfhrp2 and pfhrp3 deletion status correctly
in 93.4% of
      samples with parasitemia levels higher than 5 parasites/microL
when
      compared to nested PCR. The qHRP2/3-del assay can correctly
identify
      pfhrp2 and pfhrp3 gene deletions in multiple strain co-
infections,
      particularly prevalent in Sub-Saharan countries. Deployment of
this
      qHRP2/3-del assay will provide rapid insight into the
prevalence and
      potential spread of P. falciparum isolates that escape
surveillance by
      RDTs.
FAU - Schindler, Tobias
AU - Schindler T
AUID- ORCID: http://orcid.org/0000-0002-5961-095X
AD - Department of Medical Parasitology and Infection Biology,
Swiss Tropical
      and Public Health Institute, Basel, Switzerland.
      tobias.schindler@unibas.ch.
AD - University of Basel, Basel, Switzerland.
tobias.schindler@unibas.ch.
FAU - Deal, Anna C
AU - Deal AC
AD - Department of Medical Parasitology and Infection Biology,
Swiss Tropical
      and Public Health Institute, Basel, Switzerland.
AD - University of Basel, Basel, Switzerland.
FAU - Fink, Martina
AU - Fink M
AD - Department of Medical Parasitology and Infection Biology,
Swiss Tropical
      and Public Health Institute, Basel, Switzerland.
AD - University of Basel, Basel, Switzerland.
FAU - Guirou, Etienne
AU - Guirou E
AUID- ORCID: http://orcid.org/0000-0002-8576-328X

AD - Department of Medical Parasitology and Infection Biology, Swiss Tropical
      and Public Health Institute, Basel, Switzerland.
AD - University of Basel, Basel, Switzerland.
FAU - Moser, Kara A
AU - Moser KA
AD - Institute for Genome Sciences, University of Maryland School of Medicine,
      Baltimore, Maryland, USA.
FAU - Mwakasungula, Solomon M
AU - Mwakasungula SM
AD - Bagamoyo Research and Training Centre, Ifakara Health Institute,
      Bagamoyo, United Republic of Tanzania.
FAU - Mihayo, Michael G
AU - Mihayo MG
AD - Bagamoyo Research and Training Centre, Ifakara Health Institute,
      Bagamoyo, United Republic of Tanzania.
FAU - Jongo, Said A
AU - Jongo SA
AD - Bagamoyo Research and Training Centre, Ifakara Health Institute,
      Bagamoyo, United Republic of Tanzania.
FAU - Chaki, Prosper P
AU - Chaki PP
AD - Bagamoyo Research and Training Centre, Ifakara Health Institute,
      Bagamoyo, United Republic of Tanzania.
FAU - Abdulla, Salim
AU - Abdulla S
AD - Bagamoyo Research and Training Centre, Ifakara Health Institute,
      Bagamoyo, United Republic of Tanzania.
FAU - Valverde, Paulo C Manrique
AU - Valverde PCM
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia & Instituto de Medicina Tropical, Alexander von Humboldt
      Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Torres, Katherine
AU - Torres K
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia & Instituto de Medicina Tropical, Alexander von Humboldt
      Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Bijeri, Jose R
AU - Bijeri JR
AD - Equatorial Guinea Malaria Vaccine Initiative, Malabo, Equatorial Guinea.
FAU - Silva, Joana C
AU - Silva JC

AUID- ORCID: http://orcid.org/0000-0001-6502-7026
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia & Instituto de Medicina Tropical, Alexander von Humboldt
      Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Hoffman, Stephen L
AU - Hoffman SL
AD - Sanaria Inc., Rockville, Maryland, USA.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia & Instituto de Medicina Tropical, Alexander von Humboldt
      Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Tanner, Marcel
AU - Tanner M
AD - Department of Medical Parasitology and Infection Biology, Swiss Tropical
      and Public Health Institute, Basel, Switzerland.
AD - University of Basel, Basel, Switzerland.
FAU - Daubenberger, Claudia
AU - Daubenberger C
AD - Department of Medical Parasitology and Infection Biology, Swiss Tropical
      and Public Health Institute, Basel, Switzerland.
      claudia.daubenberger@swisstph.ch.
AD - University of Basel, Basel, Switzerland.
      claudia.daubenberger@swisstph.ch.
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI110820/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20190911
PL - England
TA - Sci Rep
JT - Scientific reports
JID - 101563288
RN - 0 (Antigens, Protozoan)
RN - 0 (HRP-2 antigen, Plasmodium falciparum)
RN - 0 (HRP3 protein, Plasmodium falciparum)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Antigens, Protozoan/*genetics/*metabolism
MH - *Gene Deletion
MH - Plasmodium falciparum/*genetics/physiology
MH - Polymerase Chain Reaction/*methods
MH - Protozoan Proteins/*genetics/*metabolism
PMC - PMC6739368
EDAT- 2019/09/13 06:00
MHDA- 2020/10/29 06:00

CRDT- 2019/09/13 06:00
PHST- 2019/05/13 00:00 [received]
PHST- 2019/08/24 00:00 [accepted]
PHST- 2019/09/13 06:00 [entrez]
PHST- 2019/09/13 06:00 [pubmed]
PHST- 2020/10/29 06:00 [medline]
AID - 10.1038/s41598-019-49389-2 [doi]
AID - 10.1038/s41598-019-49389-2 [pii]
PST - epublish
SO - Sci Rep. 2019 Sep 11;9(1):13107. doi: 10.1038/
s41598-019-49389-2.

PMID- 31358033
OWN - NLM
STAT- MEDLINE
DCOM- 20191202
LR - 20200327
IS - 1756-3305 (Electronic)
IS - 1756-3305 (Linking)
VI - 12
IP - 1
DP - 2019 Jul 29
TI - Higher risk of malaria transmission outdoors than indoors by
Nyssorhynchus darlingi in riverine communities in the Peruvian
Amazon.
PG - 374
LID - 10.1186/s13071-019-3619-0 [doi]
AB - BACKGROUND: Malaria remains an important public health problem
in Peru
where incidence has been increasing since 2011. Of over 55,000
cases
reported in 2017, Plasmodium vivax was the predominant species
(76%),
with P. falciparum responsible for the remaining 24%.
Nyssorhynchus
darlingi (previously Anopheles darlingi) is the main vector in
Amazonian
Peru, where hyperendemic Plasmodium transmission pockets have
been found.
Mazan district has pronounced spatial heterogeneity of P.
vivax malaria.
However, little is known about behavior, ecology or seasonal
dynamics of
Ny. darlingi in Mazan. This study aimed to gather baseline
information
about bionomics of malaria vectors and transmission risk
factors in a
hyperendemic malaria area of Amazonian Peru. METHODS: To
assess vector
biology metrics, five surveys (two in the dry and three in the
rainy
season), including collection of sociodemographic information,
were
conducted in four communities in 2016-2017 on the Napo (Urco

Mirano, URC;
Salvador, SAL) and Mazan Rivers (Visto Bueno, VIB; Libertad, LIB). Human-
biting rate (HBR), entomological inoculation rate (EIR) and human blood
index (HBI) were measured to test the hypothesis of differences in
entomological indices of Ny. darlingi between watersheds. A generalized
linear mixed effect model (GLMM) was constructed to model the
relationship between household risk factors and the EIR. RESULTS:
Nyssorhynchus darlingi comprised 95% of 7117 Anophelinae collected and
its abundance was significantly higher along the Mazan River. The highest
EIRs (3.03-4.54) were detected in March and June in URC, LIB and VIB, and
significantly more Ny. darlingi were infected outdoors than indoors.
Multivariate analysis indicated that the EIR was >12 times higher in URC
compared with SAL. The HBI ranged from 0.42-0.75; humans were the most
common blood source, followed by Galliformes and cows. There were
dramatic differences in peak biting time and malaria incidence with
similar bednet coverage in the villages. CONCLUSIONS: Nyssorhynchus
darlingi is the predominant contributor to malaria transmission in the
Mazan District, Peru. Malaria risk in these villages is higher in the
peridomestic area, with pronounced heterogeneities between and within
villages on the Mazan and the Napo Rivers. Spatiotemporal identification
and quantification of the prevailing malaria transmission would provide
new evidence to orient specific control measures for vulnerable or at
high risk populations.
FAU - Saavedra, Marlon P
AU - Saavedra MP
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Conn, Jan E
AU - Conn JE
AUID- ORCID: http://orcid.org/0000-0002-5301-7020
AD - Department of Biomedical Sciences, School of Public Health,

State
      University of New York-Albany, Albany, NY, USA.
jan.conn@health.ny.gov.
AD - Wadsworth Center, New York State Department of Health, Albany,
NY, USA.
      jan.conn@health.ny.gov.
FAU - Alava, Freddy
AU - Alava F
AD - Ministry of Health, Iquitos, Peru.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Prussing, Catharine
AU - Prussing C
AD - Department of Biomedical Sciences, School of Public Health,
State
      University of New York-Albany, Albany, NY, USA.
FAU - Bickersmith, Sara A
AU - Bickersmith SA
AD - Wadsworth Center, New York State Department of Health, Albany,
NY, USA.
FAU - Sangama, Jorge L
AU - Sangama JL
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Fernandez-Minope, Carlos
AU - Fernandez-Minope C
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Guzman, Mitchel
AU - Guzman M
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Tong, Carlos
AU - Tong C
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Valderrama, Carlos

AU - Valderrama C
AD - Ministry of Health, Iquitos, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, USA.
AD - Section of Infectious Diseases, Yale University School of Medicine, New
      Haven, CT, USA.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicinal Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Moreno, Marta
AU - Moreno M
AUID- ORCID: http://orcid.org/0000-0002-9091-5612
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, USA. Marta.moreno@lshtm.ac.uk.
AD - Department of Infection Biology, London School of Hygiene & Tropical
      Medicine, London, UK. Marta.moreno@lshtm.ac.uk.
LA - eng
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
GR - U19AI089681/National Institute of Allergy and Infectious Diseases
GR - R01 AI110112/AI/NIAID NIH HHS/United States
GR - RO1AI110112/National Institute of Allergy and Infectious Diseases
GR - T32AI05532901/Biodefense and Emerging Infectious Disease Training
      fellowship
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - 201460655/TDR/WHO
PT - Journal Article
DEP - 20190729
PL - England
TA - Parasit Vectors

JT - Parasites & vectors
JID - 101462774
SB - IM
MH - Adolescent
MH - Adult
MH - Animals
MH - Anopheles/*parasitology/*physiology
MH - Bites and Stings
MH - Child
MH - Child, Preschool
MH - Female
MH - *Housing
MH - Humans
MH - Incidence
MH - Malaria/epidemiology/*transmission
MH - Malaria, Falciparum/epidemiology/transmission
MH - Malaria, Vivax/epidemiology/transmission
MH - Male
MH - Mosquito Vectors/*parasitology
MH - Peru/epidemiology
MH - Risk Factors
MH - *Rivers
MH - Seasons
MH - Young Adult
PMC - PMC6664538
OTO - NOTNLM
OT - Blood meal source
OT - Entomological inoculation rate
OT - GLMM
OT - Human blood index
OT - Mazan District
OT - Nyssorhynchus darlingi
OT - Peruvian Amazon
OT - Plasmodium
EDAT- 2019/07/31 06:00
MHDA- 2019/12/04 06:00
CRDT- 2019/07/31 06:00
PHST- 2018/12/04 00:00 [received]
PHST- 2019/07/19 00:00 [accepted]
PHST- 2019/07/31 06:00 [entrez]
PHST- 2019/07/31 06:00 [pubmed]
PHST- 2019/12/04 06:00 [medline]
AID - 10.1186/s13071-019-3619-0 [doi]
AID - 10.1186/s13071-019-3619-0 [pii]
PST - epublish
SO - Parasit Vectors. 2019 Jul 29;12(1):374. doi: 10.1186/
s13071-019-3619-0.

PMID- 31221984
OWN - NLM
STAT- MEDLINE
DCOM- 20201027
LR - 20220302
IS - 2045-2322 (Electronic)

IS - 2045-2322 (Linking)
VI - 9
IP - 1
DP - 2019 Jun 20
TI - Complement Receptor 1 availability on red blood cell surface modulates
      Plasmodium vivax invasion of human reticulocytes.
PG - 8943
LID - 10.1038/s41598-019-45228-6 [doi]
AB - Plasmodium vivax parasites preferentially invade reticulocyte cells in a
      multistep process that is still poorly understood. In this study, we used
      ex vivo invasion assays and population genetic analyses to investigate
      the involvement of complement receptor 1 (CR1) in P. vivax invasion.
      First, we observed that P. vivax invasion of reticulocytes was
      consistently reduced when CR1 surface expression was reduced through
      enzymatic cleavage, in the presence of naturally low-CR1-expressing cells
      compared with high-CR1-expressing cells, and with the addition of soluble
      CR1, a known inhibitor of P. falciparum invasion. Immuno-precipitation
      experiments with P. vivax Reticulocyte Binding Proteins showed no
      evidence of complex formation. In addition, analysis of CR1 genetic data
      for worldwide human populations with different exposure to malaria
      parasites show significantly higher frequency of CR1 alleles associated
      with low receptor expression on the surface of RBCs and higher linkage
      disequilibrium in human populations exposed to P. vivax malaria compared
      with unexposed populations. These results are consistent with a positive
      selection of low-CR1-expressing alleles in vivax-endemic areas.
      Collectively, our findings demonstrate that CR1 availability on the
      surface of RBCs modulates P. vivax invasion. The identification of new
      molecular interactions is crucial to guiding the rational development of
      new therapeutic interventions against vivax malaria.
FAU - Prajapati, Surendra Kumar
AU - Prajapati SK
AUID- ORCID: http://orcid.org/0000-0003-1188-668X
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,

      Antwerp, Belgium.
AD - Department of Microbiology and Immunology, Uniformed Services
University
      of Health Sciences, Bethesda, USA.
FAU - Borlon, Celine
AU - Borlon C
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium.
FAU - Rovira-Vallbona, Eduard
AU - Rovira-Vallbona E
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium.
FAU - Gruszczyk, Jakub
AU - Gruszczyk J
AUID- ORCID: http://orcid.org/0000-0003-4536-2964
AD - The Walter and Eliza Hall Institute of Medical Research,
Parkville,
      Victoria, Australia.
FAU - Menant, Sebastien
AU - Menant S
AUID- ORCID: http://orcid.org/0000-0003-1979-0367
AD - The Walter and Eliza Hall Institute of Medical Research,
Parkville,
      Victoria, Australia.
FAU - Tham, Wai-Hong
AU - Tham WH
AUID- ORCID: http://orcid.org/0000-0001-7950-8699
AD - The Walter and Eliza Hall Institute of Medical Research,
Parkville,
      Victoria, Australia.
AD - Department of Medical Biology, The University of Melbourne,
Parkville,
      Victoria, Australia.
FAU - Kattenberg, Johanna Helena
AU - Kattenberg JH
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium.
FAU - Villasis, Elizabeth
AU - Villasis E
AD - Departamento de Ciencias Celulares y Moleculares, Universidad
Peruana
      Cayetano Heredia, Lima, Peru.
FAU - De Meulenaere, Katlijn
AU - De Meulenaere K
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium.
AD - Adrem Data Lab, University of Antwerp, Antwerp, Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Departamento de Ciencias Celulares y Moleculares, Universidad

Peruana
      Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph
AU - Vinetz J
AD - Departamento de Ciencias Celulares y Moleculares, Universidad Peruana
      Cayetano Heredia, Lima, Peru.
AD - Section of Infectious Diseases, Department of Internal Medicine, Yale
      School of Medicine, New Haven, USA.
FAU - Fujita, Ricardo
AU - Fujita R
AD - Centro de Genetica y Biologia Molecular, Universidad de San Martin de
      Porres, Lima, Peru.
FAU - Xuan, Xa Nguyen
AU - Xuan XN
AD - National Institute of Malariology, Parasitology and Entomology, Hanoi,
      Vietnam.
FAU - Urbano Ferreira, Marcelo
AU - Urbano Ferreira M
AD - Departamento de Parasitologia, Universidade de Sao Paulo, Sao Paulo,
      Brazil.
FAU - Nino, Carlos H
AU - Nino CH
AD - Molecular Biology and Immunology Department, Fundacion Instituto de
      Inmunologia de Colombia (FIDIC), Bogota, Colombia.
FAU - Patarroyo, Manuel A
AU - Patarroyo MA
AUID- ORCID: http://orcid.org/0000-0002-4751-2500
AD - Molecular Biology and Immunology Department, Fundacion Instituto de
      Inmunologia de Colombia (FIDIC), Bogota, Colombia.
AD - Basic Sciences Department, Universidad del Rosario, Bogota, Colombia.
FAU - Spanakos, Gregory
AU - Spanakos G
AD - Hellenic Centre for Diseases Control and Prevention, Maroussi, Greece.
FAU - Kestens, Luc
AU - Kestens L
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Abbeele, Jan Van Den
AU - Abbeele JVD
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A

AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium. arosanas@itg.be.
LA - eng
GR - 208693/Z/17/Z/WT_/Wellcome Trust/United Kingdom
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20190620
PL - England
TA - Sci Rep
JT - Scientific reports
JID - 101563288
RN - 0 (Receptors, Complement)
SB - IM
MH - Erythrocyte Membrane/*metabolism
MH - Gene Frequency
MH - Humans
MH - Linkage Disequilibrium
MH - Malaria, Vivax/parasitology/transmission
MH - Plasmodium vivax/*physiology
MH - Receptors, Complement/genetics/*metabolism
MH - Reticulocytes/*parasitology
PMC - PMC6586822
EDAT- 2019/06/22 06:00
MHDA- 2020/10/28 06:00
CRDT- 2019/06/22 06:00
PHST- 2017/11/01 00:00 [received]
PHST- 2019/06/03 00:00 [accepted]
PHST- 2019/06/22 06:00 [entrez]
PHST- 2019/06/22 06:00 [pubmed]
PHST- 2020/10/28 06:00 [medline]
AID - 10.1038/s41598-019-45228-6 [doi]
AID - 10.1038/s41598-019-45228-6 [pii]
PST - epublish
SO - Sci Rep. 2019 Jun 20;9(1):8943. doi: 10.1038/
s41598-019-45228-6.

PMID- 31091236
OWN - NLM
STAT- MEDLINE
DCOM- 20191024
LR - 20200327
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 13
IP - 5
DP - 2019 May
TI - Malaria vector species in Amazonian Peru co-occur in larval
habitats but
      have distinct larval microbial communities.
PG - e0007412
LID - 10.1371/journal.pntd.0007412 [doi]
AB - In Amazonian Peru, the primary malaria vector, Nyssorhynchus

darlingi
(formerly Anopheles darlingi), is difficult to target using standard
vector control methods because it mainly feeds and rests outdoors. Larval
source management could be a useful supplementary intervention, but to
determine its feasibility, more detailed studies on the larval ecology of
Ny. darlingi are essential. We conducted a multi-level study of the
larval ecology of Anophelinae mosquitoes in the peri-Iquitos region of
Amazonian Peru, examining the environmental characteristics of the larval
habitats of four species, comparing the larval microbiota among species
and habitats, and placing Ny. darlingi larval habitats in the context of
spatial heterogeneity in human malaria transmission. We collected Ny.
darlingi, Nyssorhynchus rangeli (formerly Anopheles rangeli),
Nyssorhynchus triannulatus s.l. (formerly Anopheles triannulatus s.l.),
and Nyssorhynchus sp. nr. konderi (formerly Anopheles sp. nr. konderi)
from natural and artificial water bodies throughout the rainy and dry
seasons. We found that, consistent with previous studies in this region
and in Brazil, the presence of Ny. darlingi was significantly associated
with water bodies in landscapes with more recent deforestation and lower
light intensity. Nyssorhynchus darlingi presence was also significantly
associated with a lower vegetation index, other Anophelinae species, and
emergent vegetation. Though they were collected in the same water bodies,
the microbial communities of Ny. darlingi larvae were distinct from those
of Ny. rangeli and Ny. triannulatus s.l., providing evidence either for a
species-specific larval microbiome or for segregation of these species in
distinct microhabitats within each water body. We demonstrated that
houses with more reported malaria cases were located closer to Ny.
darlingi larval habitats; thus, targeted control of these sites could
help ameliorate malaria risk. The co-occurrence of Ny. darlingi larvae in

water bodies with other putative malaria vectors increases the potential
impact of larval source management in this region.
FAU - Prussing, Catharine
AU - Prussing C
AUID- ORCID: 0000-0001-6425-6839
AD - Department of Biomedical Sciences, School of Public Health, University at
Albany-State University of New York, Albany, NY, United States of
America.
FAU - Saavedra, Marlon P
AU - Saavedra MP
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Bickersmith, Sara A
AU - Bickersmith SA
AD - Wadsworth Center, New York State Department of Health, Albany, NY, United
States of America.
FAU - Alava, Freddy
AU - Alava F
AD - Ministry of Health, Iquitos, Peru.
FAU - Guzman, Mitchel
AU - Guzman M
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Manrique, Edgar
AU - Manrique E
AUID- ORCID: 0000-0002-0196-0818
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
AD - Facultad de Salud Publica, Universidad Peruana Cayetano Heredia, Lima,
Peru.
FAU - Moreno, Marta
AU - Moreno M

AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, United States of America.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, United States of America.
FAU - Conn, Jan E
AU - Conn JE
AD - Department of Biomedical Sciences, School of Public Health, University at
      Albany-State University of New York, Albany, NY, United States of
      America.
AD - Wadsworth Center, New York State Department of Health, Albany, NY, United
      States of America.
LA - eng
GR - R01 AI110112/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - UL1 TR001863/TR/NCATS NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20190515
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - Animals
MH - Anopheles/classification/*microbiology
MH - Bacteria/classification/genetics/*isolation & purification
MH - Brazil
MH - Ecosystem

MH - Humans
MH - Larva/classification/*microbiology
MH - Malaria/*transmission
MH - *Microbiota
MH - Mosquito Vectors/classification/*microbiology
MH - Peru
PMC - PMC6538195
COIS- The authors have declared that no competing interests exist.
EDAT- 2019/05/16 06:00
MHDA- 2019/10/28 06:00
CRDT- 2019/05/16 06:00
PHST- 2018/11/21 00:00 [received]
PHST- 2019/04/24 00:00 [accepted]
PHST- 2019/05/28 00:00 [revised]
PHST- 2019/05/16 06:00 [pubmed]
PHST- 2019/10/28 06:00 [medline]
PHST- 2019/05/16 06:00 [entrez]
AID - 10.1371/journal.pntd.0007412 [doi]
AID - PNTD-D-18-01822 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2019 May 15;13(5):e0007412. doi:
      10.1371/journal.pntd.0007412. eCollection 2019 May.

PMID- 30697487
OWN - NLM
STAT- PubMed-not-MEDLINE
LR - 20201001
IS - 2167-8359 (Print)
IS - 2167-8359 (Linking)
VI - 7
DP - 2019
TI - Use of open mobile mapping tool to assess human mobility
traceability in
      rural offline populations with contrasting malaria dynamics.
PG - e6298
LID - 10.7717/peerj.6298 [doi]
AB - Infectious disease dynamics are affected by human mobility
more
      powerfully than previously thought, and thus reliable
traceability data
      are essential. In rural riverine settings, lack of
infrastructure and
      dense tree coverage deter the implementation of cutting-edge
technology
      to collect human mobility data. To overcome this challenge,
this study
      proposed the use of a novel open mobile mapping tool, GeoODK.
This study
      consists of a purposive sampling of 33 participants in six
villages with
      contrasting patterns of malaria transmission that demonstrates
a feasible
      approach to map human mobility. The self-reported traceability
data

allowed the construction of the first human mobility framework in rural riverine villages in the Peruvian Amazon. The mobility spectrum in these areas resulted in travel profiles ranging from 2 hours to 19 days; and distances between 10 to 167 km. Most Importantly, occupational-related mobility profiles with the highest displacements (in terms of time and distance) were observed in commercial, logging, and hunting activities. These data are consistent with malaria transmission studies in the area that show villages in watersheds with higher human movement are concurrently those with greater malaria risk. The approach we describe represents a potential tool to gather critical information that can facilitate malaria control activities.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine, University of California, San Diego, La Jolla, CA, United States of America.
FAU - Castro, Marcia C
AU - Castro MC
AD - Department of Global Health and Population, Harvard T.H. Chan School of Public Health, Boston, MA, United States of America.
FAU - Barboza, Jose Luis
AU - Barboza JL
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Ruiz-Cabrejos, Jorge
AU - Ruiz-Cabrejos J
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicinal Tropical Alexander von Humboldt, Universidad

      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicinal Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Department of Infectious diseases, School of Medicine, Yale University,
      New Haven, CT, United States of America.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicinal Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
SI - figshare/10.6084/m9.figshare.7091075.v1
PT - Journal Article
DEP - 20190122
PL - United States
TA - PeerJ
JT - PeerJ
JID - 101603425
PMC - PMC6346981
OTO - NOTNLM
OT - Amazon
OT - Contact network
OT - Epidemics
OT - Human mobility
OT - Infectious diseases
OT - Malaria
OT - Network
COIS- The authors declare there are no competing interests.
EDAT- 2019/01/31 06:00
MHDA- 2019/01/31 06:01
CRDT- 2019/01/31 06:00
PHST- 2018/10/23 00:00 [received]
PHST- 2018/12/18 00:00 [accepted]
PHST- 2019/01/31 06:00 [entrez]
PHST- 2019/01/31 06:00 [pubmed]
PHST- 2019/01/31 06:01 [medline]
AID - 10.7717/peerj.6298 [doi]
AID - 6298 [pii]
PST - epublish
SO - PeerJ. 2019 Jan 22;7:e6298. doi: 10.7717/peerj.6298. eCollection 2019.

PMID- 30653491
OWN - NLM
STAT- MEDLINE
DCOM- 20190211
LR - 20200225
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 13
IP - 1
DP - 2019 Jan
TI - High-accuracy detection of malaria vector larval habitats using drone-
      based multispectral imagery.
PG - e0007105
LID - 10.1371/journal.pntd.0007105 [doi]
AB - Interest in larval source management (LSM) as an adjunct intervention to
      control and eliminate malaria transmission has recently increased mainly
      because long-lasting insecticidal nets (LLINs) and indoor residual spray
      (IRS) are ineffective against exophagic and exophilic mosquitoes. In
      Amazonian Peru, the identification of the most productive, positive water
      bodies would increase the impact of targeted mosquito control on aquatic
      life stages. The present study explores the use of unmanned aerial
      vehicles (drones) for identifying Nyssorhynchus darlingi (formerly
      Anopheles darlingi) breeding sites with high-resolution imagery
      (~0.02m/pixel) and their multispectral profile in Amazonian Peru. Our
      results show that high-resolution multispectral imagery can discriminate
      a profile of water bodies where Ny. darlingi is most likely to breed
      (overall accuracy 86.73%- 96.98%) with a moderate differentiation of
      spectral bands. This work provides proof-of-concept of the use of high-
      resolution images to detect malaria vector breeding sites in Amazonian
      Peru and such innovative methodology could be crucial for LSM malaria
      integrated interventions.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano

Heredia,
      Lima, Peru.
AD - Facultad de Salud Publica, Universidad Peruana Cayetano
Heredia, Lima,
      Peru.
FAU - Manrique, Edgar
AU - Manrique E
AUID- ORCID: 0000-0002-0196-0818
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Ruiz-Cabrejos, Jorge
AU - Ruiz-Cabrejos J
AUID- ORCID: 0000-0002-2055-3396
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Facultad de Salud Publica, Universidad Peruana Cayetano
Heredia, Lima,
      Peru.
FAU - Saavedra, Marlon
AU - Saavedra M
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - Ministry of Health, Iquitos, Peru.
FAU - Bickersmith, Sara
AU - Bickersmith S
AD - Wadsworth Center, New York State Department of Health, Albany,
New York,
      United States of America.
FAU - Prussing, Catharine
AU - Prussing C
AUID- ORCID: 0000-0001-6425-6839
AD - Department of Biomedical Sciences, School of Public Health,
State
      University of New York-Albany, Albany, New York, United States
of
      America.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California San Diego, La Jolla, California, United States of
America.
AD - Instituto de Medicinal Tropical Alexander von Humboldt,

Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Conn, Jan E
AU - Conn JE
AD - Wadsworth Center, New York State Department of Health, Albany, New York,
      United States of America.
AD - Department of Biomedical Sciences, School of Public Health, State
      University of New York-Albany, Albany, New York, United States of
      America.
FAU - Moreno, Marta
AU - Moreno M
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, California, United States of America.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicinal Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - R01 AI110112/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20190117
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - Animals
MH - Anopheles/*growth & development
MH - *Ecosystem
MH - Entomology/*methods
MH - Female
MH - Image Processing, Computer-Assisted/*methods
MH - Mosquito Vectors/*growth & development
MH - Optical Imaging/*methods
MH - Peru
MH - Proof of Concept Study
PMC - PMC6353212

COIS- The authors declare that the research was conducted in the absence of any
      commercial or financial relationships that could be construed as a
      potential conflict of interest.
EDAT- 2019/01/18 06:00
MHDA- 2019/02/12 06:00
CRDT- 2019/01/18 06:00
PHST- 2018/06/08 00:00 [received]
PHST- 2018/12/20 00:00 [accepted]
PHST- 2019/01/30 00:00 [revised]
PHST- 2019/01/18 06:00 [pubmed]
PHST- 2019/02/12 06:00 [medline]
PHST- 2019/01/18 06:00 [entrez]
AID - 10.1371/journal.pntd.0007105 [doi]
AID - PNTD-D-18-00902 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2019 Jan 17;13(1):e0007105. doi:
      10.1371/journal.pntd.0007105. eCollection 2019 Jan.

PMID- 30517211
OWN - NLM
STAT- MEDLINE
DCOM- 20190206
LR - 20190215
IS - 1678-8060 (Electronic)
IS - 0074-0276 (Linking)
VI - 113
IP - 12
DP - 2018 Dec 3
TI - Nyssorhynchus dunhami: bionomics and natural infection by Plasmodium
      falciparum and P. vivax in the Peruvian Amazon.
PG - e180380
LID - S0074-02762018001200300 [pii]
LID - 10.1590/0074-02760180380 [doi]
AB - BACKGROUND Nyssorhynchus dunhami, a member of the Nuneztovari Complex,
      has been collected in Brazil, Colombia, and Peru and described as
      zoophilic. Although to date Ny. dunhami has not been documented to be
      naturally infected by Plasmodium, it is frequently misidentified as other
      Oswaldoi subgroup species that are local or regional malaria vectors.
      OBJECTIVES The current study seeks to verify the morphological
      identification of Nuneztovari Complex species collected in the peri-
      Iquitos region of Amazonian Peru, to determine their Plasmodium infection
      status, and to describe ecological characteristics of their larval
      habitats. METHODS We collected Ny. nuneztovari s.l. adults in

2011-2012,
      and Ny. nuneztovari s.l. larvae and adults in 2016-2017. When possible,
      samples were identified molecularly using cytochrome c oxidase subunit I
      (COI) barcode sequencing. Adult Ny. nuneztovari s.l. from 2011-2012 were
      tested for Plasmodium using real-time PCR. Environmental characteristics
      associated with Ny. nuneztovari s.l. larvae-positive water bodies were
      evaluated. FINDINGS We collected 590 Ny. nuneztovari s.l. adults and 116
      larvae from eight villages in peri-Iquitos. Of these, 191 adults and 111
      larvae were identified by COI sequencing; all were Ny. dunhami. Three Ny.
      dunhami were infected with P. falciparum, and one with P. vivax, all
      collected from one village on one night. Ny. dunhami larvae were
      collected from natural and artificial water bodies, and their presence
      was positively associated with other Anophelinae larvae and amphibians,
      and negatively associated with people living within 250m. MAIN
      CONCLUSIONS Of Nuneztovari Complex species, we identified only Ny.
      dunhami across multiple years in eight peri-Iquitos localities. This
      study is, to our knowledge, the first report of natural infection of
      molecularly identified Ny. dunhami with Plasmodium. We advocate the use
      of molecular identification methods in this region to monitor Ny. dunhami
      and other putative secondary malaria vectors to more precisely evaluate
      their importance in malaria transmission.
FAU - Prussing, Catharine
AU - Prussing C
AD - University at Albany, State University of New York, School of Public
      Health, Department of Biomedical Sciences, Albany, NY, USA.
FAU - Bickersmith, Sara A
AU - Bickersmith SA
AD - Wadsworth Center, New York State Department of Health, Albany, NY, USA.
FAU - Moreno, Marta
AU - Moreno M
AD - University of California San Diego, Department of Medicine, Division of
      Infectious Diseases, La Jolla, CA, USA.
FAU - Saavedra, Marlon P

AU - Saavedra MP
AD - Universidad Peruana Cayetano Heredia, Facultad de Ciencias y Filosofia,
      Laboratorios de Investigacion y Desarrollo, Laboratorio ICEMR-Amazonia,
      Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - Ministry of Health, Iquitos, Peru.
FAU - Sallum, Maria Anice Mureb
AU - Sallum MAM
AD - Universidade de Sao Paulo, Faculdade de Saude Publica, Departamento de
      Epidemiologia, Sao Paulo, SP, Brasil.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Universidad Peruana Cayetano Heredia, Facultad de Ciencias y Filosofia,
      Laboratorios de Investigacion y Desarrollo, Laboratorio ICEMR-Amazonia,
      Lima, Peru.
AD - Universidad Peruana Cayetano Heredia, Instituto de Medicina Tropical
      Alexander von Humboldt, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - University of California San Diego, Department of Medicine, Division of
      Infectious Diseases, La Jolla, CA, USA.
AD - Universidad Peruana Cayetano Heredia, Facultad de Ciencias y Filosofia,
      Laboratorios de Investigacion y Desarrollo, Laboratorio ICEMR-Amazonia,
      Lima, Peru.
AD - Universidad Peruana Cayetano Heredia, Instituto de Medicina Tropical
      Alexander von Humboldt, Lima, Peru.
FAU - Conn, Jan E
AU - Conn JE
AD - University at Albany, State University of New York, School of Public
      Health, Department of Biomedical Sciences, Albany, NY, USA.
AD - Wadsworth Center, New York State Department of Health, Albany, NY, USA.
LA - eng
GR - R01 AI110112/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20181203
PL - Brazil
TA - Mem Inst Oswaldo Cruz
JT - Memorias do Instituto Oswaldo Cruz
JID - 7502619
SB - IM

MH - Animals
MH - Anopheles/classification/*parasitology
MH - Brazil
MH - Colombia
MH - Ecology
MH - Malaria, Falciparum/transmission
MH - Malaria, Vivax/transmission
MH - Mosquito Vectors/classification/*parasitology
MH - Peru
MH - Plasmodium falciparum/*isolation & purification
MH - Plasmodium vivax/*isolation & purification
PMC - PMC6276023
EDAT- 2018/12/06 06:00
MHDA- 2019/02/07 06:00
CRDT- 2018/12/06 06:00
PHST- 2018/08/08 00:00 [received]
PHST- 2018/10/30 00:00 [accepted]
PHST- 2018/12/06 06:00 [entrez]
PHST- 2018/12/06 06:00 [pubmed]
PHST- 2019/02/07 06:00 [medline]
AID - S0074-02762018001200300 [pii]
AID - 10.1590/0074-02760180380 [doi]
PST - epublish
SO - Mem Inst Oswaldo Cruz. 2018 Dec 3;113(12):e180380. doi:
      10.1590/0074-02760180380.

PMID- 30486449
OWN - NLM
STAT- MEDLINE
DCOM- 20190226
LR - 20200225
IS - 1660-4601 (Electronic)
IS - 1660-4601 (Linking)
VI - 15
IP - 12
DP - 2018 Nov 27
TI - Effectiveness of a Malaria Surveillance Strategy Based on
Active Case
      Detection during High Transmission Season in the Peruvian
Amazon.
LID - E2670 [pii]
LID - 10.3390/ijerph15122670 [doi]
AB - Background: Faced with the resurgence of malaria, malaria
surveillance in
      the Peruvian Amazon incorporated consecutive active case
detection (ACD)
      interventions using light microscopy (LM) as reactive measure
in
      communities with an unusual high number of cases during high
transmission
      season (HTS). We assessed the effectiveness in malaria
detection of this
      local ACD-based strategy. Methods: A cohort study was
conducted in

June(-)July 2015 in Mazan, Loreto. Four consecutive ACD interventions at intervals of 10 days were conducted in four riverine communities (Gamitanacocha, Primero de Enero, Libertad and Urco Mirano). In each intervention, all inhabitants were visited at home, and finger-prick blood samples collected for immediate diagnosis by LM and on filter paper for later analysis by quantitative real-time polymerase chain reaction (qPCR). Effectiveness was calculated by dividing the number of malaria infections detected using LM by the number of malaria infections detected by delayed qPCR. Results: Most community inhabitants (88.1%, 822/933) were present in at least one of the four ACD interventions. A total of 451 infections were detected by qPCR in 446 participants (54.3% of total participants); five individuals had two infections. Plasmodium vivax was the predominant species (79.8%), followed by P. falciparum (15.3%) and P. vivax-P. falciparum co-infections (4.9%). Most qPCR-positive infections were asymptomatic (255/448, 56.9%). The ACD-strategy using LM had an effectiveness of 22.8% (detection of 103 of the total qPCR-positive infections). Children aged 5(-)14 years, and farming as main economic activity were associated with P. vivax infections. Conclusions: Although the ACD-strategy using LM increased the opportunity of detecting and treating malaria infections during HTS, the number of detected infections was considerably lower than the real burden of infections (those detected by qPCR).
FAU - Moreno-Gutierrez, Diamantina
AU - Moreno-Gutierrez D
AD - Facultad de Medicina Humana, Universidad Nacional de la Amazonia Peruana, Loreto 160, Peru. dlmorenog@gmail.com.
AD - Research Institute of Health and Society (IRSS), Universite catholique de Louvain, 1200 Brussels, Belgium. dlmorenog@gmail.com.
AD - Centre for Health Economics Research and Modelling Infectious Diseases, Vaccine and Infectious Disease Institute, University of

Antwerp, 2000
      Antwerp, Belgium. dlmorenog@gmail.com.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima 31, Peru. alejandro.llanos.c@upch.pe.
AD - Facultad de Salud Publica y Administracion, Universidad Peruana Cayetano
      Heredia, Lima 31, Peru. alejandro.llanos.c@upch.pe.
FAU - Luis Barboza, Jose
AU - Luis Barboza J
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima 31, Peru. biobarbox@gmail.com.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima 31, Peru. juan.contreras.m@upch.pe.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima 31, Peru.
      juan.contreras.m@upch.pe.
FAU - Gamboa, Dionicia
AU - Gamboa D
AUID- ORCID: 0000-0002-1420-7729
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima 31, Peru. dionigamboa@yahoo.com.
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima 31, Peru.
      dionigamboa@yahoo.com.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima 31, Peru.
      dionigamboa@yahoo.com.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Facultad de Medicina Humana, Universidad Nacional de la Amazonia Peruana,
      Loreto 160, Peru. hmrodriguezf@hotmail.com.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - Laboratorios de Investigacion y Desarrollo, Facultad de Ciencias y

      Filosofia, Universidad Peruana Cayetano Heredia, Lima 31,
Peru.
      gabriel.carrasco@upch.pe.
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California San Diego, La Jolla, CA 92093, USA.
gabriel.carrasco@upch.pe.
FAU - Boreux, Raphael
AU - Boreux R
AD - Department of Clinical Microbiology, Center for
Interdisciplinary
      Research on Medicines (CIRM), University Hospital of Liege,
4000 Liege,
      Belgium. raphael.boreux@chuliege.be.
FAU - Hayette, Marie-Pierre
AU - Hayette MP
AUID- ORCID: 0000-0002-9025-6493
AD - Department of Clinical Microbiology, Center for
Interdisciplinary
      Research on Medicines (CIRM), University Hospital of Liege,
4000 Liege,
      Belgium. mphayette@chuliege.be.
FAU - Beutels, Philippe
AU - Beutels P
AD - Centre for Health Economics Research and Modelling Infectious
Diseases,
      Vaccine and Infectious Disease Institute, University of
Antwerp, 2000
      Antwerp, Belgium. philippe.beutels@uantwerpen.be.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite
catholique de
      Louvain, 1200 Brussels, Belgium. niko.speybroeck@uclouvain.be.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Research Institute of Health and Society (IRSS), Universite
catholique de
      Louvain, 1200 Brussels, Belgium. angelrosasa@gmail.com.
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima 31, Peru.
angelrosasa@gmail.com.
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20181127
PL - Switzerland
TA - Int J Environ Res Public Health
JT - International journal of environmental research and public
health
JID - 101238455
SB - IM
MH - Adolescent

MH - Adult
MH - Aged
MH - Aged, 80 and over
MH - Child
MH - Child, Preschool
MH - Cohort Studies
MH - Farms/*statistics & numerical data
MH - Female
MH - Humans
MH - Infant
MH - Infant, Newborn
MH - Malaria, Falciparum/*epidemiology
MH - Malaria, Vivax/*epidemiology
MH - Male
MH - Middle Aged
MH - Peru/epidemiology
MH - Plasmodium falciparum/*isolation & purification
MH - Plasmodium vivax/*isolation & purification
MH - Population Surveillance/*methods
MH - *Seasons
MH - Young Adult
PMC - PMC6314008
OTO - NOTNLM
OT - Peru
OT - active case detection
OT - asymptomatic
OT - diagnosis
OT - malaria
EDAT- 2018/11/30 06:00
MHDA- 2019/02/27 06:00
CRDT- 2018/11/30 06:00
PHST- 2018/10/23 00:00 [received]
PHST- 2018/11/15 00:00 [revised]
PHST- 2018/11/21 00:00 [accepted]
PHST- 2018/11/30 06:00 [entrez]
PHST- 2018/11/30 06:00 [pubmed]
PHST- 2019/02/27 06:00 [medline]
AID - ijerph15122670 [pii]
AID - 10.3390/ijerph15122670 [doi]
PST - epublish
SO - Int J Environ Res Public Health. 2018 Nov 27;15(12). pii:
ijerph15122670.
      doi: 10.3390/ijerph15122670.

PMID- 30253764
OWN - NLM
STAT- MEDLINE
DCOM- 20181211
LR - 20181211
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 17
IP - 1
DP - 2018 Sep 25

TI - Automated microscopy for routine malaria diagnosis: a field comparison on
      Giemsa-stained blood films in Peru.
PG - 339
LID - 10.1186/s12936-018-2493-0 [doi]
AB - BACKGROUND: Microscopic examination of Giemsa-stained blood films remains
      a major form of diagnosis in malaria case management, and is a reference
      standard for research. However, as with other visualization-based
      diagnoses, accuracy depends on individual technician performance, making
      standardization difficult and reliability poor. Automated image
      recognition based on machine-learning, utilizing convolutional neural
      networks, offers potential to overcome these drawbacks. A prototype
      digital microscope device employing an algorithm based on machine-
      learning, the Autoscope, was assessed for its potential in malaria
      microscopy. Autoscope was tested in the Iquitos region of Peru in 2016 at
      two peripheral health facilities, with routine microscopy and PCR as
      reference standards. The main outcome measures include sensitivity and
      specificity of diagnosis of malaria from Giemsa-stained blood films,
      using PCR as reference. METHODS: A cross-sectional, observational trial
      was conducted at two peripheral primary health facilities in Peru. 700
      participants were enrolled with the criteria: (1) age between 5 and 75
      years, (2) history of fever in the last 3 days or elevated temperature on
      admission, (3) informed consent. The main outcome measures included
      sensitivity and specificity of diagnosis of malaria from Giemsa-stained
      blood films, using PCR as reference. RESULTS: At the San Juan clinic,
      sensitivity of Autoscope for diagnosing malaria was 72% (95% CI 64-80%),
      and specificity was 85% (95% CI 79-90%). Microscopy performance was
      similar to Autoscope, with sensitivity 68% (95% CI 59-76%) and
      specificity 100% (95% CI 98-100%). At San Juan, 85% of prepared slides
      had a minimum of 600 WBCs imaged, thus meeting Autoscope's design

assumptions. At the second clinic, Santa Clara, the sensitivity of
Autoscope was 52% (95% CI 44-60%) and specificity was 70% (95% CI
64-76%). Microscopy performance at Santa Clara was 42% (95% CI 34-51) and
specificity was 97% (95% CI 94-99). Only 39% of slides from Santa Clara
met Autoscope's design assumptions regarding WBCs imaged.
CONCLUSIONS:
Autoscope's diagnostic performance was on par with routine microscopy
when slides had adequate blood volume to meet its design assumptions, as
represented by results from the San Juan clinic. Autoscope's diagnostic
performance was poorer than routine microscopy on slides from the Santa
Clara clinic, which generated slides with lower blood volumes. Results of
the study reflect both the potential for artificial intelligence to
perform tasks currently conducted by highly-trained experts, and the
challenges of replicating the adaptiveness of human thought processes.
FAU - Torres, Katherine
AU - Torres K
AD - Universidad Peruana Cayetano Heredia, Laboratorio de Malaria,
Laboratiorios de Investigacion y Dessarrollo, Facultad de Ciencias y
Filosofia, Av. Honorio Delgado 430 SMP, Lima, Peru.
FAU - Bachman, Christine M
AU - Bachman CM
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005, USA.
christineb@intven.com.
FAU - Delahunt, Charles B
AU - Delahunt CB
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005, USA.
FAU - Alarcon Baldeon, Jhonatan
AU - Alarcon Baldeon J
AD - Universidad Peruana Cayetano Heredia, Laboratorio de Malaria,
Laboratiorios de Investigacion y Dessarrollo, Facultad de Ciencias y
Filosofia, Av. Honorio Delgado 430 SMP, Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - Universidad Peruana Cayetano Heredia, Laboratorio de Malaria,
Laboratiorios de Investigacion y Dessarrollo, Facultad de Ciencias y
Filosofia, Av. Honorio Delgado 430 SMP, Lima, Peru.
FAU - Gamboa Vilela, Dionicia

AU - Gamboa Vilela D
AD - Universidad Peruana Cayetano Heredia, Laboratorio de Malaria,
      Laboratiorios de Investigacion y Dessarrollo, Facultad de
Ciencias y
      Filosofia, Av. Honorio Delgado 430 SMP, Lima, Peru.
FAU - Proux, Stephane
AU - Proux S
AD - Shoklo Malaria Research Unit, Mahidol-Oxford Tropical Medicine
Research
      Unit, Faculty of Tropical Medicine, Mahidol University, Mae
Sot,
      Thailand.
FAU - Mehanian, Courosh
AU - Mehanian C
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
FAU - McGuire, Shawn K
AU - McGuire SK
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
FAU - Thompson, Clay M
AU - Thompson CM
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
FAU - Ostbye, Travis
AU - Ostbye T
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
FAU - Hu, Liming
AU - Hu L
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
FAU - Jaiswal, Mayoore S
AU - Jaiswal MS
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
FAU - Hunt, Victoria M
AU - Hunt VM
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
FAU - Bell, David
AU - Bell D
AD - Intellectual Ventures, 3150 139 AVE SE, Bellevue, WA, 98005,
USA.
LA - eng
PT - Comparative Study
PT - Journal Article
DEP - 20180925
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Adolescent

MH - Adult
MH - Aged
MH - Child
MH - Child, Preschool
MH - Cross-Sectional Studies
MH - Diagnostic Tests, Routine/instrumentation/*methods
MH - Humans
MH - Malaria, Falciparum/*diagnosis
MH - Malaria, Vivax/*diagnosis
MH - Microscopy/instrumentation/*methods
MH - Middle Aged
MH - Peru
MH - Plasmodium falciparum/isolation & purification
MH - Plasmodium vivax/isolation & purification
MH - Prospective Studies
MH - Reproducibility of Results
MH - Sensitivity and Specificity
MH - Young Adult
PMC - PMC6157053
OTO - NOTNLM
OT - Artificial intelligence
OT - Convolutional neural networks
OT - Digital microscopy
OT - Malaria
OT - Microscopy
EDAT- 2018/09/27 06:00
MHDA- 2018/12/12 06:00
CRDT- 2018/09/27 06:00
PHST- 2018/06/17 00:00 [received]
PHST- 2018/09/21 00:00 [accepted]
PHST- 2018/09/27 06:00 [entrez]
PHST- 2018/09/27 06:00 [pubmed]
PHST- 2018/12/12 06:00 [medline]
AID - 10.1186/s12936-018-2493-0 [doi]
AID - 10.1186/s12936-018-2493-0 [pii]
PST - epublish
SO - Malar J. 2018 Sep 25;17(1):339. doi: 10.1186/
s12936-018-2493-0.

PMID- 29703192
OWN - NLM
STAT- MEDLINE
DCOM- 20190110
LR - 20190110
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 17
IP - 1
DP - 2018 Apr 27
TI - Acceptability of a herd immunity-focused, transmission-
blocking malaria
      vaccine in malaria-endemic communities in the Peruvian Amazon:
an
      exploratory study.

PG - 179
LID - 10.1186/s12936-018-2328-z [doi]
AB - BACKGROUND: A transmission-blocking vaccine (TBV) to prevent malaria-
      infected humans from infecting mosquitoes has been increasingly
      considered as a tool for malaria control and elimination. This study
      tested the hypothesis that a malaria TBV would be acceptable among
      residents of a malaria-hypoendemic region. METHODS: The study was carried
      out in six Spanish-speaking rural villages in the Department of Loreto in
      the Peruvian Amazon. These villages comprise a cohort of 430 households
      associated with the Peru-Brazil International Centre for Excellence in
      Malaria Research. Individuals from one-third (143) of enrolled households
      in an ongoing longitudinal, prospective cohort study in 6 communities in
      Loreto, Peru, were randomly selected to participate by answering a pre-
      validated questionnaire. RESULTS: All 143 participants expressed desire
      for a malaria vaccine in general; only 1 (0.7%) expressed unwillingness
      to receive a transmission-blocking malaria vaccine. Injection was
      considered most acceptable for adults (97.2%); for children drops in the
      mouth were preferred (96.8%). Acceptability waned marginally with the
      prospect of multiple injections (83.8%) and different projected
      efficacies at 70 and 50% (90.1 and 71.8%, respectively). Respondents
      demonstrated clear understanding that the vaccine was for community,
      rather than personal, protection against malaria infection. DISCUSSION:
      In this setting of the Peruvian Amazon, a transmission-blocking malaria
      vaccine was found to be almost universally acceptable. This study is the
      first to report that residents of a malaria-endemic region have been
      queried regarding a malaria vaccine strategy that policy-makers in the
      industrialized world often dismiss as altruistic.
FAU - White, Sara E
AU - White SE
AD - Division of Infectious Diseases, Department of Medicine,

University of
      California, San Diego School of Medicine, 9500 Gilman Drive
0760,
      Biomedical Research Facility Room 4A16, La Jolla, CA,
92093-0760, USA.
FAU - Harvey, Steven A
AU - Harvey SA
AD - Department of International Health, Johns Hopkins Bloomberg
School of
      Public Health, 615 N. Wolfe St. E5030, Baltimore, MD, 21205,
USA.
      steven.harvey@jhu.edu.
FAU - Meza, Graciela
AU - Meza G
AD - Facultad de Medicina Humana, Universidad Nacional de la
Amazonia Peruana,
      Iquitos, Peru.
FAU - Llanos, Alejandro
AU - Llanos A
AD - Malaria and Leishmaniasis Division, Instituto de Medicina
Tropical
      Alexander von Humboldt, Av. Honorio Delgado 430, San Martin de
Porres,
      Lima, Peru.
FAU - Guzman, Mitchel
AU - Guzman M
AD - Malaria and Leishmaniasis Division, Instituto de Medicina
Tropical
      Alexander von Humboldt, Av. Honorio Delgado 430, San Martin de
Porres,
      Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Malaria and Leishmaniasis Division, Instituto de Medicina
Tropical
      Alexander von Humboldt, Av. Honorio Delgado 430, San Martin de
Porres,
      Lima, Peru.
AD - Department of Cellular and Molecular Sciences, Faculty of
Sciences and
      Laboratory of Research and Development, Universidad Peruana
Cayetano
      Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California, San Diego School of Medicine, 9500 Gilman Drive
0760,
      Biomedical Research Facility Room 4A16, La Jolla, CA,
92093-0760, USA.
      jvinetz@ucsd.edu.
AD - Malaria and Leishmaniasis Division, Instituto de Medicina
Tropical

      Alexander von Humboldt, Av. Honorio Delgado 430, San Martin de Porres,
      Lima, Peru. jvinetz@ucsd.edu.
AD - Department of Cellular and Molecular Sciences, Faculty of Sciences and
      Laboratory of Research and Development, Universidad Peruana Cayetano
      Heredia, Lima, Peru. jvinetz@ucsd.edu.
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
GR - R01AI067727/National Institutes of Health
GR - U19AI089681/National Institutes of Health
GR - K24AI068903/National Institutes of Health
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - D43TW007120/National Institutes of Health
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - K24 AI068903/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20180427
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Malaria Vaccines)
SB - IM
MH - Adult
MH - Aged
MH - Female
MH - Humans
MH - *Immunity, Herd
MH - Longitudinal Studies
MH - Malaria Vaccines/*immunology
MH - Malaria, Falciparum/*prevention & control
MH - Malaria, Vivax/*prevention & control
MH - Male
MH - Middle Aged
MH - Plasmodium falciparum/*immunology
MH - Plasmodium vivax/*immunology
MH - Prospective Studies
MH - Young Adult
PMC - PMC5921293
OTO - NOTNLM
OT - Amazon
OT - Malaria
OT - Peru
OT - Social acceptability
OT - Transmission-blocking vaccine (TBV)
EDAT- 2018/04/29 06:00
MHDA- 2019/01/11 06:00
CRDT- 2018/04/29 06:00
PHST- 2017/12/29 00:00 [received]
PHST- 2018/04/18 00:00 [accepted]
PHST- 2018/04/29 06:00 [entrez]
PHST- 2018/04/29 06:00 [pubmed]

PHST- 2019/01/11 06:00 [medline]
AID - 10.1186/s12936-018-2328-z [doi]
AID - 10.1186/s12936-018-2328-z [pii]
PST - epublish
SO - Malar J. 2018 Apr 27;17(1):179. doi: 10.1186/s12936-018-2328-z.

PMID- 29465219
OWN - NLM
STAT- MEDLINE
DCOM- 20190618
LR - 20191228
IS - 2373-8227 (Electronic)
IS - 2373-8227 (Linking)
VI - 4
IP - 4
DP - 2018 Apr 13
TI - Continuous Supply of Plasmodium vivax Sporozoites from Colonized
Anopheles darlingi in the Peruvian Amazon.
PG - 541-548
LID - 10.1021/acsinfecdis.7b00195 [doi]
AB - In vitro culture of Plasmodium vivax liver stages underlies key
understandings of the fundamental biology of this parasite, particularly
the latent, hyponozoite stage, toward drug and vaccine development. Here,
we report systematic production of Plasmodium vivax sporozoites in
colonized Anopheles darlingi mosquitoes in the Peruvian Amazon. Human
subject-derived P. vivax-infected blood was fed to Anopheles darlingi
females using standard membrane feedings assays. Optimizing A. darlingi
infection and sporozoite production included replacement of infected
patient donor serum with naive donor serum, comparing anticoagulants in
processing blood samples, and addition of penicillin-streptomycin and ATP
to infectious blood meals. Replacement of donor serum by naive serum in
the P. vivax donor blood increased oocysts in the mosquito midgut, and
heparin, as anticoagulant, was associated with the highest sporozoite
yields. Maintaining blood-fed mosquitoes on penicillin-streptomycin in
sugar significantly extended mosquito survival which enabled greater
sporozoite yield. In this study, we have shown that a robust P. vivax

sporozoite production is feasible in a malaria-endemic setting where
infected subjects and a stable A. darlingi colony are brought together,
with optimized laboratory conditions.
FAU - Moreno, Marta
AU - Moreno M
AUID- ORCID: 0000-0002-9091-5612
AD - Division of Infectious Diseases, Department of Medicine, School of
Medicine , University of California, San Diego , 9500 Gilman Drive , La
Jolla , California 92093 , United States.
FAU - Tong-Rios, Carlos
AU - Tong-Rios C
AUID- ORCID: 0000-0002-7241-9957
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia , Universidad Peruana Cayetano Heredia ,
Av. Honorio Delgado 430 , San Martin de Porres, Lima , 15102 , Peru.
FAU - Orjuela-Sanchez, Pamela
AU - Orjuela-Sanchez P
AUID- ORCID: 0000-0002-1093-9105
AD - Department of Pediatrics , University of California, San Diego , 9500
Gilman Drive , La Jolla , California 92093 , United States.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia , Universidad Peruana Cayetano Heredia ,
Av. Honorio Delgado 430 , San Martin de Porres, Lima , 15102 , Peru.
FAU - Campo, Brice
AU - Campo B
AUID- ORCID: 0000-0002-6425-5577
AD - Medicines for Malaria Venture , Route de Pre-Bois 20 , Meyrin , 1215 ,
Switzerland.
FAU - Gamboa, Dionicia
AU - Gamboa D
AUID- ORCID: 0000-0002-1420-7729
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia , Universidad Peruana Cayetano Heredia ,
Av. Honorio Delgado 430 , San Martin de Porres, Lima , 15102 , Peru.
AD - Instituto de Medicina Tropical "Alexander von Humboldt" , Universidad

      Peruana Cayetano Heredia , Lima , 15102 , Peru.
FAU - Winzeler, Elizabeth A
AU - Winzeler EA
AUID- ORCID: 0000-0002-4049-2113
AD - Department of Pediatrics , University of California, San Diego , 9500
      Gilman Drive , La Jolla , California 92093 , United States.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AUID- ORCID: 0000-0001-8344-2004
AD - Division of Infectious Diseases, Department of Medicine, School of
      Medicine , University of California, San Diego , 9500 Gilman Drive , La
      Jolla , California 92093 , United States.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia , Universidad Peruana Cayetano Heredia ,
      Av. Honorio Delgado 430 , San Martin de Porres, Lima , 15102 , Peru.
AD - Instituto de Medicina Tropical "Alexander von Humboldt" , Universidad
      Peruana Cayetano Heredia , Lima , 15102 , Peru.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20180315
PL - United States
TA - ACS Infect Dis
JT - ACS infectious diseases
JID - 101654580
SB - IM
MH - Animals
MH - Anopheles/*parasitology
MH - Female
MH - Gastrointestinal Tract/parasitology
MH - Parasitology/*methods
MH - Peru
MH - Plasmodium vivax/*growth & development/isolation & purification
MH - Sporozoites/*growth & development/isolation & purification
PMC - PMC5902790
OTO - NOTNLM
OT - Anopheles darlingi
OT - Peruvian Amazon
OT - Plasmodium vivax
OT - membrane feeding assays
OT - sporozoite
EDAT- 2018/02/22 06:00
MHDA- 2019/06/19 06:00

CRDT- 2018/02/22 06:00
PHST- 2018/02/22 06:00 [pubmed]
PHST- 2019/06/19 06:00 [medline]
PHST- 2018/02/22 06:00 [entrez]
AID - 10.1021/acsinfecdis.7b00195 [doi]
PST - ppublish
SO - ACS Infect Dis. 2018 Apr 13;4(4):541-548. doi:
      10.1021/acsinfecdis.7b00195. Epub 2018 Mar 15.

PMID- 29463241
OWN - NLM
STAT- MEDLINE
DCOM- 20181218
LR - 20190124
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 17
IP - 1
DP - 2018 Feb 20
TI - Decreasing proportion of Anopheles darlingi biting outdoors between long-
      lasting insecticidal net distributions in peri-Iquitos, Amazonian Peru.
PG - 86
LID - 10.1186/s12936-018-2234-4 [doi]
AB - BACKGROUND: In Loreto Department, Peru, a successful 2005-2010 malaria
      control programme (known as PAMAFRO) included massive distribution of
      long-lasting insecticidal nets (LLINs). Additional local distribution of
      LLINs occurred in individual villages, but not between 2012 and 2015. A
      2011-2012 study of the primary regional malaria vector Anopheles darlingi
      detected a trend of increased exophagy compared with pre-PAMAFRO
      behaviour. For the present study, An. darlingi were collected in three
      villages in Loreto in 2013-2015 to test two hypotheses: (1) that between
      LLIN distributions, An. darlingi reverted to pre-intervention biting
      behaviour; and, (2) that there are separate sub-populations of An.
      darlingi in Loreto with distinct biting behaviour. RESULTS: In 2013-2015
      An. darlingi were collected by human landing catch during the rainy and
      dry seasons in the villages of Lupuna and Cahuide. The abundance of An.
      darlingi varied substantially across years, villages and time periods,
      and there was a twofold decrease in the ratio of

exophagic:endophagic An.
      darlingi over the study period. Unexpectedly, there was evidence of a
      rainy season population decline in An. darlingi. Plasmodium-infected An.
      darlingi were detected indoors and outdoors throughout the night, and the
      monthly An. darlingi human biting rate was correlated with the number of
      malaria cases. Using nextRAD genotyping-by-sequencing, 162 exophagic and
      endophagic An. darlingi collected at different times during the night
      were genotyped at 1021 loci. Based on model-based and non-model-based
      analyses, all genotyped An. darlingi belonged to a homogeneous
      population, with no evidence for genetic differentiation by biting
      location or time. CONCLUSIONS: This study identified a decreasing
      proportion of exophagic An. darlingi in two villages in the years between
      LLIN distributions. As there was no evidence for genetic differentiation
      between endophagic and exophagic An. darlingi, this shift in biting
      behaviour may be the result of behavioural plasticity in An. darlingi,
      which shifted towards increased exophagy due to repellence by
      insecticides used to impregnate LLINs and subsequently reverted to
      increased endophagy as the nets aged. This study highlights the need to
      target vector control interventions to the biting behaviour of local
      vectors, which, like malaria risk, shows high temporal and spatial
      heterogeneity.
FAU - Prussing, Catharine
AU - Prussing C
AD - Department of Biomedical Sciences, School of Public Health, University at
      Albany - State University of New York, Albany, NY, USA.
FAU - Moreno, Marta
AU - Moreno M
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, USA.
FAU - Saavedra, Marlon P
AU - Saavedra MP
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,

      Lima, Peru.
FAU - Bickersmith, Sara A
AU - Bickersmith SA
AD - Wadsworth Center, New York State Department of Health, Albany, NY, USA.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - Ministry of Health, Iquitos, Peru.
FAU - Schlichting, Carl D
AU - Schlichting CD
AD - Department of Ecology and Evolutionary Biology, University of
      Connecticut, Storrs, CT, USA.
FAU - Emerson, Kevin J
AU - Emerson KJ
AD - Department of Biology, St. Mary's College of Maryland, St. Mary's City,
      MD, USA.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, USA.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Conn, Jan E
AU - Conn JE
AUID- ORCID: http://orcid.org/0000-0002-5301-7020
AD - Department of Biomedical Sciences, School of Public Health, University at
      Albany - State University of New York, Albany, NY, USA.
      jan.conn@health.ny.gov.
AD - Wadsworth Center, New York State Department of Health, Albany, NY, USA.
      jan.conn@health.ny.gov.
LA - eng
GR - R01AI110112/National Institute of Allergy and Infectious Diseases
GR - U19AI089681/National Institute of Allergy and Infectious Diseases
GR - R01 AI110112/AI/NIAID NIH HHS/United States
GR - T32AI05532901/National Institute of Allergy and Infectious

Diseases
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20180220
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Animals
MH - Anopheles/genetics/*physiology
MH - Bites and Stings/*epidemiology
MH - Feeding Behavior
MH - Insecticide-Treated Bednets/*statistics & numerical data
MH - Mosquito Vectors/genetics/*physiology
MH - Peru/epidemiology
PMC - PMC5819687
OTO - NOTNLM
OT - Anopheles darlingi
OT - Biting behaviour
OT - LLINs
OT - NextRAD genotyping
OT - Peruvian Amazon
OT - Population genetic structure
EDAT- 2018/02/22 06:00
MHDA- 2018/12/19 06:00
CRDT- 2018/02/22 06:00
PHST- 2017/09/29 00:00 [received]
PHST- 2018/02/13 00:00 [accepted]
PHST- 2018/02/22 06:00 [entrez]
PHST- 2018/02/22 06:00 [pubmed]
PHST- 2018/12/19 06:00 [medline]
AID - 10.1186/s12936-018-2234-4 [doi]
AID - 10.1186/s12936-018-2234-4 [pii]
PST - epublish
SO - Malar J. 2018 Feb 20;17(1):86. doi: 10.1186/s12936-018-2234-4.

PMID- 29187975
OWN - NLM
STAT- PubMed-not-MEDLINE
LR - 20220408
IS - 2045-7758 (Print)
IS - 2045-7758 (Linking)
VI - 7
IP - 22
DP - 2017 Nov
TI - Evolutionary structure of Plasmodium falciparum major variant
surface
      antigen genes in South America: Implications for epidemic
transmission
      and surveillance.
PG - 9376-9390
LID - 10.1002/ece3.3425 [doi]
AB - Strong founder effects resulting from human migration out of

Africa have led to geographic variation in single nucleotide polymorphisms (SNPs) and microsatellites (MS) of the malaria parasite, Plasmodium falciparum. This is particularly striking in South America where two major founder populations of P. falciparum have been identified that are presumed to have arisen from the transatlantic slave trade. Given the importance of the major variant surface antigen of the blood stages of P. falciparum as both a virulence factor and target of immunity, we decided to investigate the population genetics of the genes encoding "Plasmodium falciparum Erythrocyte Membrane Protein 1" (Pf EMP1) among several countries in South America, in order to evaluate the transmission patterns of malaria in this continent. Deep sequencing of the DBLalpha domain of var genes from 128 P. falciparum isolates from five locations in South America was completed using a 454 high throughput sequencing protocol. Striking geographic variation in var DBLalpha sequences, similar to that seen for SNPs and MS markers, was observed. Colombia and French Guiana had distinct var DBLalpha sequences, whereas Peru and Venezuela showed an admixture. The importance of such geographic variation to herd immunity and malaria vaccination is discussed.

FAU - Rougeron, Virginie
AU - Rougeron V
AUID- ORCID: 0000-0001-5873-5681
AD - Department of Microbiology Division of Parasitology New York University School of Medicine New York NY USA.
AD - MIVEGEC (Laboratoire Maladies Infectieuses et Vecteurs, Ecologie, Genetique, Evolution et Controle), UMR CNRS 5290/IRD 224 Universite Montpellier 1 Universite Montpellier 2 Montpellier France.
FAU - Tiedje, Kathryn E
AU - Tiedje KE
AD - Department of Microbiology Division of Parasitology New York University School of Medicine New York NY USA.
AD - School of BioSciences Bio21 Institute/University of Melbourne Parkville

      Vic. Australia.
FAU - Chen, Donald S
AU - Chen DS
AD - Department of Microbiology Division of Parasitology New York University
      School of Medicine New York NY USA.
FAU - Rask, Thomas S
AU - Rask TS
AD - Department of Microbiology Division of Parasitology New York University
      School of Medicine New York NY USA.
AD - School of BioSciences Bio21 Institute/University of Melbourne Parkville
      Vic. Australia.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander Von Humboldt and Departamento de
      Ciencias Celulares y Moleculares Facultad de Ciencias y Filosofia
      Universidad Peruana Cayetano Heredia Lima Peru.
FAU - Maestre, Amanda
AU - Maestre A
AD - Grupo Salud y Comunidad Facultad de Medicina Universidad de Antioquia
      Medellin Colombia.
FAU - Musset, Lise
AU - Musset L
AD - Parasitology UnitInstitut Pasteur de Guyane Cayenne Cedex French Guiana.
FAU - Legrand, Eric
AU - Legrand E
AD - Parasitology UnitInstitut Pasteur de Guyane Cayenne Cedex French Guiana.
AD - Unit of Genetics and Genomics on Insect Vectors Institut Pasteur Paris
      France.
FAU - Noya, Oscar
AU - Noya O
AD - Centro para Estudios Sobre Malaria Instituto de Altos Estudios en Salud
      "Dr. Arnoldo Gabaldon" Ministerio del Poder Popular para la Salud and
      Instituto de Medicina Tropical Universidad Central de Venezuela Caracas
      Venezuela.
FAU - Yalcindag, Erhan
AU - Yalcindag E
AD - MIVEGEC (Laboratoire Maladies Infectieuses et Vecteurs, Ecologie,
      Genetique, Evolution et Controle), UMR CNRS 5290/IRD 224 Universite
      Montpellier 1 Universite Montpellier 2 Montpellier France.
FAU - Renaud, Francois

AU - Renaud F
AD - MIVEGEC (Laboratoire Maladies Infectieuses et Vecteurs, Ecologie,
      Genetique, Evolution et Controle), UMR CNRS 5290/IRD 224 Universite
      Montpellier 1 Universite Montpellier 2 Montpellier France.
FAU - Prugnolle, Franck
AU - Prugnolle F
AD - MIVEGEC (Laboratoire Maladies Infectieuses et Vecteurs, Ecologie,
      Genetique, Evolution et Controle), UMR CNRS 5290/IRD 224 Universite
      Montpellier 1 Universite Montpellier 2 Montpellier France.
FAU - Day, Karen P
AU - Day KP
AD - Department of Microbiology Division of Parasitology New York University
      School of Medicine New York NY USA.
AD - School of BioSciences Bio21 Institute/University of Melbourne Parkville
      Vic. Australia.
LA - eng
GR - R01 AI084156/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20171008
PL - England
TA - Ecol Evol
JT - Ecology and evolution
JID - 101566408
PMC - PMC5696401
OTO - NOTNLM
OT - Plasmodium falciparum
OT - Plasmodium falciparum Erythrocyte Membrane Protein 1
OT - evolutionary structure
OT - population genomics
OT - var genes
EDAT- 2017/12/01 06:00
MHDA- 2017/12/01 06:01
CRDT- 2017/12/01 06:00
PHST- 2016/11/02 00:00 [received]
PHST- 2017/07/07 00:00 [revised]
PHST- 2017/08/19 00:00 [accepted]
PHST- 2017/12/01 06:00 [entrez]
PHST- 2017/12/01 06:00 [pubmed]
PHST- 2017/12/01 06:01 [medline]
AID - 10.1002/ece3.3425 [doi]
AID - ECE33425 [pii]
PST - epublish
SO - Ecol Evol. 2017 Oct 8;7(22):9376-9390. doi: 10.1002/ece3.3425.
      eCollection 2017 Nov.

PMID- 29037202
OWN - NLM
STAT- MEDLINE

DCOM- 20180514
LR - 20181113
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 16
IP - 1
DP - 2017 Oct 16
TI - High prevalence of very-low Plasmodium falciparum and Plasmodium vivax
      parasitaemia carriers in the Peruvian Amazon: insights into local and
      occupational mobility-related transmission.
PG - 415
LID - 10.1186/s12936-017-2063-x [doi]
AB - BACKGROUND: The incidence of malaria due both to Plasmodium falciparum
      and Plasmodium vivax in the Peruvian Amazon has risen in the past 5
      years. This study tested the hypothesis that the maintenance and
      emergence of malaria in hypoendemic regions such as Amazonia is
      determined by submicroscopic and asymptomatic Plasmodium parasitaemia
      carriers. The present study aimed to precisely quantify the rate of very-
      low parasitaemia carriers in two sites of the Peruvian Amazon in relation
      to transmission patterns of P. vivax and P. falciparum in this area.
      METHODS: This study was carried out within the Amazonian-ICEMR
      longitudinal cohort. Blood samples were collected for light microscopy
      diagnosis and packed red blood cell (PRBC) samples were analysed by qPCR.
      Plasma samples were tested for total IgG reactivity against recombinant
      PvMSP-10 and PfMSP-10 antigens by ELISA. Occupation and age 10 years and
      greater were considered surrogates of occupation-related mobility. Risk
      factors for P. falciparum and P. vivax infections detected by PRBC-qPCR
      were assessed by multilevel logistic regression models. RESULTS: Among
      450 subjects, the prevalence of P. vivax by PRBC-PCR (25.1%) was sixfold
      higher than that determined by microscopy (3.6%). The prevalence of P.
      falciparum infection was 4.9% by PRBC-PCR and 0.2% by microscopy. More
      than 40% of infections had parasitaemia under 5 parasites/muL.
      Multivariate analysis for infections detected by PRBC-PCR showed that

participants with recent settlement in the study area (AOR 2.1; 95% CI
1.03:4.2), age >/= 30 years (AOR 3.3; 95% CI 1.6:6.9) and seropositivity
to P. vivax (AOR 1.8; 95% CI 1.0:3.2) had significantly higher likelihood
of P. vivax infection, while the odds of P. falciparum infection was
higher for participants between 10 and 29 years (AOR 10.7; 95% CI
1.3:91.1) and with a previous P. falciparum infection (AOR 10.4; 95% CI
1.5:71.1). CONCLUSIONS: This study confirms the contrasting transmission
patterns of P. vivax and P. falciparum in the Peruvian Amazon, with
stable local transmission for P. vivax and the source of P. falciparum to
the study villages dominated by very low parasitaemia carriers, age 10
years and older, who had travelled away from home for work and brought P.
falciparum infection with them.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru. gabriel.carrasco@upch.pe.
AD - Facultad de Salud Publica, Universidad Peruana Cayetano Heredia, Lima,
Peru. gabriel.carrasco@upch.pe.
FAU - Miranda-Alban, Julio
AU - Miranda-Alban J
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Fernandez-Minope, Carlos
AU - Fernandez-Minope C
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima, Peru.
FAU - Brouwer, Kimberly C
AU - Brouwer KC
AD - Division of Epidemiology, Department of Family Medicine & Public Health,
University of California, San Diego, La Jolla, CA, USA.
FAU - Torres, Katherine

AU - Torres K
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Calderon, Maritza
AU - Calderon M
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicinal Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Facultad de Salud Publica, Universidad Peruana Cayetano
Heredia, Lima,
      Peru.
AD - Instituto de Medicinal Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru. jvinetz@ucsd.edu.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
      jvinetz@ucsd.edu.
AD - Instituto de Medicinal Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru. jvinetz@ucsd.edu.
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California, San Diego, 9500 Gilman Drive MC0760, Biomedical
Research
      Facility-2, Room 4A16, La Jolla, CA, USA. jvinetz@ucsd.edu.

LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20171016
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Adolescent
MH - Adult
MH - Asymptomatic Infections/*epidemiology
MH - Child
MH - Cross-Sectional Studies
MH - Female
MH - Humans
MH - Malaria, Falciparum/*epidemiology/parasitology
MH - Malaria, Vivax/*epidemiology/parasitology
MH - Male
MH - Multivariate Analysis
MH - Parasitemia/*epidemiology/parasitology
MH - Peru/epidemiology
MH - Plasmodium falciparum/*isolation & purification
MH - Plasmodium vivax/*isolation & purification
MH - Prevalence
MH - Seroepidemiologic Studies
MH - Young Adult
PMC - PMC5644076
OTO - NOTNLM
OT - Human mobility
OT - MSP10
OT - Malaria
OT - Migration
OT - Molecular epidemiology
OT - Plasmodium falciparum
OT - Plasmodium vivax
OT - Sensitivity
OT - Serology
OT - Specificity
OT - Sub-microscopic
EDAT- 2017/10/19 06:00
MHDA- 2018/05/15 06:00
CRDT- 2017/10/18 06:00
PHST- 2017/06/30 00:00 [received]
PHST- 2017/10/11 00:00 [accepted]
PHST- 2017/10/18 06:00 [entrez]
PHST- 2017/10/19 06:00 [pubmed]
PHST- 2018/05/15 06:00 [medline]
AID - 10.1186/s12936-017-2063-x [doi]
AID - 10.1186/s12936-017-2063-x [pii]
PST - epublish
SO - Malar J. 2017 Oct 16;16(1):415. doi: 10.1186/s12936-017-2063-

x.

PMID- 28982155
OWN - NLM
STAT- MEDLINE
DCOM- 20171031
LR - 20220331
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 12
IP - 10
DP - 2017
TI - Loop-mediated isothermal DNA amplification for asymptomatic malaria
      detection in challenging field settings: Technical performance and pilot
      implementation in the Peruvian Amazon.
PG - e0185742
LID - 10.1371/journal.pone.0185742 [doi]
AB - BACKGROUND: Loop-mediated isothermal DNA amplification (LAMP) methodology
      offers an opportunity for point-of-care (POC) molecular detection of
      asymptomatic malaria infections. However, there is still little evidence
      on the feasibility of implementing this technique for population
      screenings in isolated field settings. METHODS: Overall, we recruited
      1167 individuals from terrestrial ('road') and hydric ('riverine')
      communities of the Peruvian Amazon for a cross-sectional survey to detect
      asymptomatic malaria infections. The technical performance of LAMP was
      evaluated in a subgroup of 503 samples, using real-time Polymerase Chain
      Reaction (qPCR) as reference standard. The operational feasibility of
      introducing LAMP testing in the mobile screening campaigns was assessed
      based on field-suitability parameters, along with a pilot POC-LAMP assay
      in a riverine community without laboratory infrastructure. RESULTS: LAMP
      had a sensitivity of 91.8% (87.7-94.9) and specificity of 91.9%
      (87.8-95.0), and the overall accuracy was significantly better among
      samples collected during road screenings than riverine communities
      (p</=0.004). LAMP-based diagnostic strategy was successfully implemented
      within the field-team logistics and the POC-LAMP pilot in the

riverine
      community allowed for a reduction in the turnaround time for case
      management, from 12-24 hours to less than 5 hours. Specimens with
      haemolytic appearance were regularly observed in riverine screenings and
      could help explaining the hindered performance/interpretation of the LAMP
      reaction in these communities. CONCLUSIONS: LAMP-based molecular malaria
      diagnosis can be deployed outside of reference laboratories, providing
      similar performance as qPCR. However, scale-up in remote field settings
      such as riverine communities needs to consider a number of logistical
      challenges (e.g. environmental conditions, labour-intensiveness in large
      population screenings) that can influence its optimal implementation.
FAU - Serra-Casas, Elisa
AU - Serra-Casas E
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Manrique, Paulo
AU - Manrique P
AD - Laboratorios de Investigacion y Desarrollo (LID), Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Ding, Xavier C
AU - Ding XC
AD - FIND, Geneva, Switzerland.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Laboratorios de Investigacion y Desarrollo (LID), Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - Laboratorios de Investigacion y Desarrollo (LID), Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Direccion Regional de Salud (DIRESA), Loreto, Peru.
FAU - Gave, Anthony
AU - Gave A
AD - Laboratorios de Investigacion y Desarrollo (LID), Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Direccion Regional de Salud (DIRESA), Loreto, Peru.
FAU - Contreras-Mancilla, Juan

AU - Contreras-Mancilla J
AD - Laboratorios de Investigacion y Desarrollo (LID), Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
      Louvain, Brussels, Belgium.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
      Louvain, Brussels, Belgium.
FAU - Gonzalez, Iveth J
AU - Gonzalez IJ
AD - FIND, Geneva, Switzerland.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AUID- ORCID: http://orcid.org/0000-0002-0432-5203
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorios de Investigacion y Desarrollo (LID), Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
PT - Journal Article
DEP - 20171005
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
RN - 0 (DNA, Protozoan)
SB - IM
MH - Adolescent
MH - Child
MH - Child, Preschool
MH - DNA, Protozoan/*genetics
MH - Female
MH - Humans
MH - Malaria/*diagnosis/epidemiology/parasitology
MH - Male

MH - Peru/epidemiology
MH - Pilot Projects
MH - Plasmodium/genetics
MH - Prevalence
MH - Real-Time Polymerase Chain Reaction
PMC - PMC5628891
EDAT- 2017/10/06 06:00
MHDA- 2017/11/01 06:00
CRDT- 2017/10/06 06:00
PHST- 2017/05/29 00:00 [received]
PHST- 2017/08/27 00:00 [accepted]
PHST- 2017/10/06 06:00 [entrez]
PHST- 2017/10/06 06:00 [pubmed]
PHST- 2017/11/01 06:00 [medline]
AID - 10.1371/journal.pone.0185742 [doi]
AID - PONE-D-17-20461 [pii]
PST - epublish
SO - PLoS One. 2017 Oct 5;12(10):e0185742. doi: 10.1371/journal.pone.0185742.
      eCollection 2017.

PMID- 28808240
OWN - NLM
STAT- MEDLINE
DCOM- 20190305
LR - 20200114
IS - 2045-2322 (Electronic)
IS - 2045-2322 (Linking)
VI - 7
IP - 1
DP - 2017 Aug 14
TI - Micro-epidemiology and spatial heterogeneity of P. vivax parasitaemia in
      riverine communities of the Peruvian Amazon: A multilevel analysis.
PG - 8082
LID - 10.1038/s41598-017-07818-0 [doi]
AB - Malaria has steadily increased in the Peruvian Amazon over the last five
      years. This study aimed to determine the parasite prevalence and micro-
      geographical heterogeneity of Plasmodium vivax parasitaemia in
      communities of the Peruvian Amazon. Four cross-sectional active case
      detection surveys were conducted between May and July 2015 in four
      riverine communities in Mazan district. Analysis of 2785 samples of 820
      individuals nested within 154 households for Plasmodium parasitaemia was
      carried out using light microscopy and qPCR. The spatio-temporal
      distribution of Plasmodium parasitaemia, dominated by P. vivax, was shown

      to cluster at both household and community levels. Of enrolled
      individuals, 47% had at least one P. vivax parasitaemia and
10% P.
      falciparum, by qPCR, both of which were predominantly sub-
microscopic and
      asymptomatic. Spatial analysis detected significant clustering
in three
      communities. Our findings showed that communities at small-to-
moderate
      spatial scales differed in P. vivax parasite prevalence, and
multilevel
      Poisson regression models showed that such differences were
influenced by
      factors such as age, education, and location of households
within high-
      risk clusters, as well as factors linked to a local micro-
geographic
      context, such as travel and occupation. Complex transmission
patterns
      were found to be related to human mobility among communities
in the same
      micro-basin.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AUID- ORCID: 0000-0002-6945-0419
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigaciony
Desarrollo,
      Facultad de Cienciasy Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru. Gabriel.carrasco@upch.pe.
AD - Facultad de Salud Publicay Administracion, Universidad Peruana
Cayetano
      Heredia, Lima, Peru. Gabriel.carrasco@upch.pe.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigaciony
Desarrollo,
      Facultad de Cienciasy Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima, Peru.
AD - Instituto de Medicina Tropical "Alexander von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celularesy Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Castro, Marcia C
AU - Castro MC
AD - Department of Global Health and Population, Harvard T.H. Chan
School of
      Public Health, Boston, MA, USA.
FAU - Bangdiwala, Shrikant I
AU - Bangdiwala SI
AD - Department of Biostatistics, University of North Carolina

Gillings School
      of Global Public Health, Chapel Hill, NC, USA.
AD - Department of Health Research Methods, Evidence and Impact, McMaster
      University, Hamilton, ON, Canada.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Region de Salud Loreto, Iquitos, Loreto, Peru.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigaciony Desarrollo,
      Facultad de Cienciasy Filosofia, Universidad Peruana Cayetano Heredia,
      Lima, Peru.
FAU - Alava, Freddy
AU - Alava F
AD - Region de Salud Loreto, Iquitos, Loreto, Peru.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
      Louvain, Brussels, Belgium.
FAU - Lescano, Andres G
AU - Lescano AG
AD - Facultad de Salud Publicay Administracion, Universidad Peruana Cayetano
      Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celularesy Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego School of Medicine, La Jolla, California, USA.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical "Alexander von Humboldt", Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
      Louvain, Brussels, Belgium.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Facultad de Salud Publicay Administracion, Universidad Peruana Cayetano
      Heredia, Lima, Peru. alejandro.llanos.c@upch.pe.
AD - Instituto de Medicina Tropical "Alexander von Humboldt",

Universidad
      Peruana Cayetano Heredia, Lima, Peru.
alejandro.llanos.c@upch.pe.
LA - eng
GR - D43 TW001140/TW/FIC NIH HHS/United States
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - D43 TW007393/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20170814
PL - England
TA - Sci Rep
JT - Scientific reports
JID - 101563288
SB - IM
MH - Adolescent
MH - Adult
MH - Cluster Analysis
MH - Cross-Sectional Studies
MH - Female
MH - Geography
MH - Humans
MH - Malaria, Falciparum/epidemiology/parasitology
MH - Malaria, Vivax/*epidemiology/*parasitology
MH - Male
MH - Multilevel Analysis
MH - Parasitemia/*epidemiology/*parasitology
MH - Peru/epidemiology
MH - Plasmodium falciparum/isolation & purification
MH - Plasmodium vivax/*isolation & purification
MH - Prevalence
MH - Travel
MH - Young Adult
PMC - PMC5556029
EDAT- 2017/08/16 06:00
MHDA- 2019/03/06 06:00
CRDT- 2017/08/16 06:00
PHST- 2017/02/02 00:00 [received]
PHST- 2017/07/04 00:00 [accepted]
PHST- 2017/08/16 06:00 [entrez]
PHST- 2017/08/16 06:00 [pubmed]
PHST- 2019/03/06 06:00 [medline]
AID - 10.1038/s41598-017-07818-0 [doi]
AID - 10.1038/s41598-017-07818-0 [pii]
PST - epublish
SO - Sci Rep. 2017 Aug 14;7(1):8082. doi: 10.1038/
s41598-017-07818-0.

PMID- 28778210
OWN - NLM
STAT- MEDLINE
DCOM- 20180503
LR - 20200114

IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 16
IP - 1
DP - 2017 Aug 4
TI - Micro-heterogeneity of malaria transmission in the Peruvian Amazon: a
      baseline assessment underlying a population-based cohort study.
PG - 312
LID - 10.1186/s12936-017-1957-y [doi]
AB - BACKGROUND: Understanding the dynamics of malaria transmission in diverse
      endemic settings is key for designing and implementing locally adapted
      and sustainable control and elimination strategies. A parasitological and
      epidemiological survey was conducted in September-October 2012, as a
      baseline underlying a 3-year population-based longitudinal cohort study.
      The aim was to characterize malaria transmission patterns in two
      contrasting ecological rural sites in the Peruvian Amazon, Lupuna (LUP),
      a riverine environment, and Cahuide (CAH), associated with road-linked
      deforestation. METHODS: After a full population census, 1941 individuals
      3 years and older (829 in LUP, 1112 in CAH) were interviewed, clinically
      examined and had a blood sample taken for the detection of malaria
      parasites by microscopy and PCR. Species-specific parasite prevalence was
      estimated overall and by site. Multivariate logistic regression models
      assessed risk factors for parasite infection by PCR, while SaTScan
      detected spatial clusters of PCR-positive individuals within each site.
      In addition, data from routine malaria surveillance in the period
      2009-2012 were obtained. RESULTS: Parasite prevalence by PCR was higher
      in CAH than in LUP for Plasmodium vivax (6.2% vs. 3.9%) and for
      Plasmodium falciparum (2.6% vs. 1.2%). Among PCR-confirmed infections,
      asymptomatic (Asy) parasite carriers were always more common than
      symptomatic (Sy) infections for P. vivax (Asy/Sy ratio: 2/1 in LUP and
      3.7/1 in CAH) and for P. falciparum (Asy/Sy ratio: 1.3/1 in

LUP and 4/1
in CAH). Sub-patent (Spat) infections also predominated over patent (Pat)
infections for both species: P. vivax (Spat/Pat ratio: 2.8/1 in LUP and
3.7/1 in CAH) and P. falciparum malaria (Spat/Pat ratio: 1.9/1 in LUP and
26/0 in CAH). For CAH, age, gender and living in a household without
electricity were significantly associated with P. vivax infection, while
only age and living in a household with electricity was associated with
P. falciparum infection. For LUP, only household overcrowding was
associated with P. falciparum infection. The spatial analysis only
identified well-defined clusters of P. vivax and P. falciparum infected
individuals in CAH. Reported malaria incidence indicated that malaria
transmission has long occurred in LUP with primarily seasonal patterns,
and confirmed a malaria outbreak in CAH since May 2012. CONCLUSIONS: This
parasitological and epidemiological baseline assessment demonstrates that
malaria transmission and parasite prevalence is heterogeneous in the
Peruvian Amazon, and influenced by local socio-demographics and
ecological contexts. Riverine and road construction/ deforestation
contexts must be taken into account in order to carry out effective anti-
malaria control and elimination efforts.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima 31, Peru.
AD - Research Institute of Health and Society (IRSS), Universite Catholique de
Louvain, 1200, Brussels, Belgium.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
Lima 31, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt,

Universidad
      Peruana Cayetano Heredia, Lima 31, Peru.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima 31, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima 31,
Peru.
FAU - Chuquiyauri, Raul
AU - Chuquiyauri R
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima 31, Peru.
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California San Diego School of Medicine, 9500 Gilman Drive
MC0760,
      Biomedical Research Facility-2, Room 4A16, La Jolla,
California, CA,
      92093, USA.
FAU - Ramirez, Roberson
AU - Ramirez R
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima 31, Peru.
FAU - Manrique, Paulo
AU - Manrique P
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima 31, Peru.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima 31, Peru.
AD - Facultad de Salud Publica y Administracion, Universidad
Peruana Cayetano
      Heredia, Lima 31, Peru.
FAU - Puemape, Carmen
AU - Puemape C
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano
Heredia,
      Lima 31, Peru.

FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru.
AD - Facultad de Salud Publica y Administracion, Universidad Peruana Cayetano
      Heredia, Lima 31, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru. jvinetz@ucsd.edu.
AD - Laboratorio ICEMR-Amazonia, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia, Universidad Peruana Cayetano Heredia,
      Lima 31, Peru. jvinetz@ucsd.edu.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima 31, Peru.
      jvinetz@ucsd.edu.
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego School of Medicine, 9500 Gilman Drive MC0760,
      Biomedical Research Facility-2, Room 4A16, La Jolla, California, CA,
      92093, USA. jvinetz@ucsd.edu.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - D43 TW009343/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20170804
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Child
MH - Child, Preschool
MH - Cohort Studies
MH - Ecosystem
MH - Female
MH - Humans
MH - Logistic Models
MH - Malaria, Falciparum/*epidemiology/*transmission
MH - Malaria, Vivax/*epidemiology/*transmission

MH - Male
MH - Middle Aged
MH - Peru/epidemiology
MH - Plasmodium falciparum/physiology
MH - Plasmodium vivax/physiology
MH - Prevalence
MH - Risk Factors
MH - Young Adult
PMC - PMC5544973
OTO - NOTNLM
OT - Heterogeneity
OT - Hotspot
OT - Malaria
OT - PCR
OT - Peruvian Amazon
OT - Transmission
EDAT- 2017/08/06 06:00
MHDA- 2018/05/04 06:00
CRDT- 2017/08/06 06:00
PHST- 2017/04/06 00:00 [received]
PHST- 2017/07/28 00:00 [accepted]
PHST- 2017/08/06 06:00 [entrez]
PHST- 2017/08/06 06:00 [pubmed]
PHST- 2018/05/04 06:00 [medline]
AID - 10.1186/s12936-017-1957-y [doi]
AID - 10.1186/s12936-017-1957-y [pii]
PST - epublish
SO - Malar J. 2017 Aug 4;16(1):312. doi: 10.1186/s12936-017-1957-y.

PMID- 28671944
OWN - NLM
STAT- MEDLINE
DCOM- 20170726
LR - 20200114
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 11
IP - 7
DP - 2017 Jul
TI - Predominance of asymptomatic and sub-microscopic infections characterizes
      the Plasmodium gametocyte reservoir in the Peruvian Amazon.
PG - e0005674
LID - 10.1371/journal.pntd.0005674 [doi]
AB - Malaria transmission requires that Anopheles mosquitoes ingest Plasmodium
      gametocyte stages circulating in the human bloodstream. In the context of
      malaria elimination, understanding the epidemiology of gametocytes
      relative to all Plasmodium infections and the contribution of
      asymptomatic and sub-microscopic parasite carriers to the gametocyte
      reservoir is necessary, especially in low endemic settings

with
      predominance of P.vivax. A 13-month longitudinal study was
conducted in
      two communities (n = 1935 individuals) of Loreto Department,
Peru, with
      five active screenings for Plasmodium infections and
gametocyte stages by
      quantitative real-time PCR (qPCR) and reverse transcription
(RT)-qPCR,
      respectively. Parasite prevalence by qPCR was 7.2% for P.vivax
(n =
      520/7235; range by survey 6.0%-8.1%) and 3.2% for P.falciparum
(n =
      235/7235; range by survey 0.4%-7.7%). Sub-microscopic
infections
      accounted for 73.5% of P.vivax (range by survey 60%-89%) and
almost the
      totality of P.falciparum cases. Gametocytes were found in
28.4% P.vivax
      infections (range by survey 18.7%-34.1%), with a peak of 61.5%
in one
      community at the start of the transmission season. About 59.8%
of all
      P.vivax gametocyte carriers were asymptomatic and 31.9% were
sub-
      microscopic. Age patterns for gametocyte prevalence paralleled
asexual
      stage infections and peaked among >15-25 year old individuals.
Asexual
      parasite density was found to be the strongest predictor for
P.vivax
      gametocyte presence in longitudinal multivariate analysis
(odds ratio
      2.33 [95% confidence interval 1.96, 2.78]; P<0.001). Despite
significant
      differences in seasonality patterns and P.vivax prevalence
found at the
      local scale, sub-microscopic and asymptomatic infections
predominate and
      contribute significantly to the gametocyte reservoir in
different
      communities of the Peruvian Amazon. Control and elimination
campaigns
      need sensitive tools to detect all infections that escape
routine malaria
      surveillance, which may contribute to maintain transmission in
the
      region.
FAU - Rovira-Vallbona, Eduard
AU - Rovira-Vallbona E
AUID- ORCID: http://orcid.org/0000-0002-4765-1076
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium.

FAU - Contreras-Mancilla, Juan Jose
AU - Contreras-Mancilla JJ
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Ramirez, Roberson
AU - Ramirez R
AD - Laboratorio Satelite Iquitos UPCH-UCSD, Universidad Peruana Cayetano
      Heredia, Loreto, Peru.
FAU - Guzman-Guzman, Mitchel
AU - Guzman-Guzman M
AD - Laboratorio Satelite Iquitos UPCH-UCSD, Universidad Peruana Cayetano
      Heredia, Loreto, Peru.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Department of Medicine, University of California San Diego, San Diego,
      California, United States of America.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20170703
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - Adolescent

MH - Adult
MH - Age Distribution
MH - Aged
MH - Aged, 80 and over
MH - Animals
MH - Anopheles
MH - Asymptomatic Infections/*epidemiology
MH - Carrier State/*epidemiology
MH - Child
MH - Child, Preschool
MH - Female
MH - Humans
MH - Infant
MH - Longitudinal Studies
MH - Malaria/*epidemiology/pathology
MH - Male
MH - Middle Aged
MH - Peru/epidemiology
MH - Plasmodium falciparum/genetics/*isolation & purification
MH - Plasmodium vivax/genetics/*isolation & purification
MH - Prospective Studies
MH - Real-Time Polymerase Chain Reaction
MH - Young Adult
PMC - PMC5510906
EDAT- 2017/07/04 06:00
MHDA- 2017/07/27 06:00
CRDT- 2017/07/04 06:00
PHST- 2016/12/06 00:00 [received]
PHST- 2017/05/31 00:00 [accepted]
PHST- 2017/07/14 00:00 [revised]
PHST- 2017/07/04 06:00 [pubmed]
PHST- 2017/07/27 06:00 [medline]
PHST- 2017/07/04 06:00 [entrez]
AID - 10.1371/journal.pntd.0005674 [doi]
AID - PNTD-D-16-02202 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2017 Jul 3;11(7):e0005674. doi:
      10.1371/journal.pntd.0005674. eCollection 2017 Jul.

PMID- 28369085
OWN - NLM
STAT- MEDLINE
DCOM- 20170516
LR - 20220331
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 11
IP - 4
DP - 2017 Apr
TI - Defining the next generation of Plasmodium vivax diagnostic
tests for
      control and elimination: Target product profiles.
PG - e0005516
LID - 10.1371/journal.pntd.0005516 [doi]

AB - The global prevalence of malaria has decreased over the past fifteen
      years, but similar gains have not been realized against Plasmodium vivax
      because this species is less responsive to conventional malaria control
      interventions aimed principally at P. falciparum. Approximately half of
      all malaria cases outside of Africa are caused by P. vivax. This species
      places dormant forms in human liver that cause repeated clinical attacks
      without involving another mosquito bite. The diagnosis of acute patent P.
      vivax malaria relies primarily on light microscopy. Specific rapid
      diagnostic tests exist but typically perform relatively poorly compared
      to those for P. falciparum. Better diagnostic tests are needed for P.
      vivax. To guide their development, FIND, in collaboration with P. vivax
      experts, identified the specific diagnostic needs associated with this
      species and defined a series of three distinct target product profiles,
      each aimed at a particular diagnostic application: (i) point-of-care of
      acutely ill patients for clinical care purposes; (ii) point-of-care
      asymptomatic and otherwise sub-patent residents for public health
      purposes, e.g., mass screen and treat campaigns; and (iii) ultra-
      sensitive not point-of-care diagnosis for epidemiological
      research/surveillance purposes. This report presents and discusses the
      rationale for these P. vivax-specific diagnostic target product profiles.
      These contribute to the rational development of fit-for-purpose
      diagnostic tests suitable for the clinical management, control and
      elimination of P. vivax malaria.
FAU - Ding, Xavier C
AU - Ding XC
AUID- ORCID: 0000-0001-8409-3678
AD - FIND, Geneva, Switzerland.
FAU - Ade, Maria Paz
AU - Ade MP
AD - Department of Communicable Diseases and Health Analysis, Pan American
      Health Organization/World Health Organization, Washington, DC, Unites

      States of America.
FAU - Baird, J Kevin
AU - Baird JK
AD - Eijkman-Oxford Clinical Research Unit, Jakarta, Indonesia.
AD - The Centre for Tropical Medicine, Nuffield Department of
Medicine,
      University of Oxford, Oxford, United Kingdom.
FAU - Cheng, Qin
AU - Cheng Q
AD - Australian Army Malaria Institute, Brisbane, Australia.
FAU - Cunningham, Jane
AU - Cunningham J
AD - Global Malaria Programme, World Health Organization, Geneva,
Switzerland.
FAU - Dhorda, Mehul
AU - Dhorda M
AD - Centre for Tropical Medicine and Global Health, Nuffield
Department of
      Medicine, University of Oxford, Oxford, United Kingdom.
AD - World Wide Antimalarial Resistance Network, Churchill
Hospital, Oxford,
      United Kingdom.
FAU - Drakeley, Chris
AU - Drakeley C
AD - Department of Immunology and Infection, London School of
Hygiene &
      Tropical Medicine, London, United Kingdom.
FAU - Felger, Ingrid
AU - Felger I
AD - University of Basel, Basel, Switzerland.
AD - Swiss Tropical and Public Health Institute, Basel,
Switzerland.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Harbers, Matthias
AU - Harbers M
AD - RIKEN Center for Life Science Technologies, Division of
Genomic
      Technologies, Yokohama, Japan.
FAU - Herrera, Socrates
AU - Herrera S
AD - Caucaseco Scientific Research Center, Cali, Colombia.
FAU - Lucchi, Naomi
AU - Lucchi N
AD - Malaria Branch, Division of Parasitic Diseases and Malaria,
Centers for
      Disease Control and Prevention, Atlanta, Georgia, United
States of

      America.
FAU - Mayor, Alfredo
AU - Mayor A
AD - ISGlobal, Barcelona Ctr. Int. Health Res. (CRESIB), Hospital Clinic-
      Universitat de Barcelona, Barcelona, Spain.
AD - Centro de Investigacao em Saude da Manhica (CISM), Maputo, Mozambique.
FAU - Mueller, Ivo
AU - Mueller I
AD - Population Health and Immunity Division, Walter and Eliza Hall Institute,
      Parkville, Australia.
AD - Department of Parasites and Insect Vectors, Institut Pasteur, Paris,
      France.
FAU - Sattabongkot, Jetsumon
AU - Sattabongkot J
AD - Mahidol Vivax Research Unit, Faculty of Tropical Medicine, Mahidol
      University, Bangkok, Thailand.
FAU - Ratsimbason, Arsene
AU - Ratsimbason A
AD - Programme National de Lutte contre le Paludisme, Antananarivo,
      Madagascar.
AD - University of Antananarivo, Antananarivo, Madagascar.
FAU - Richards, Jack
AU - Richards J
AD - Centre for Biomedical Research, Burnet Institute, Melbourne, Victoria,
      Australia.
AD - Department of Medicine, University of Melbourne, Parkville, Victoria,
      Australia.
FAU - Tanner, Marcel
AU - Tanner M
AD - University of Basel, Basel, Switzerland.
AD - Swiss Tropical and Public Health Institute, Basel, Switzerland.
FAU - Gonzalez, Iveth J
AU - Gonzalez IJ
AD - FIND, Geneva, Switzerland.
LA - eng
GR - 001/WHO_/World Health Organization/International
GR - U19 AI089702/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20170403
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - Diagnostic Tests, Routine

MH - Humans
MH - Malaria, Falciparum/*diagnosis/parasitology/prevention & control
MH - Malaria, Vivax/*diagnosis/parasitology/prevention & control
MH - Plasmodium falciparum/*isolation & purification
MH - Plasmodium vivax/*isolation & purification
MH - *Point-of-Care Systems
MH - Species Specificity
PMC - PMC5391123
EDAT- 2017/04/04 06:00
MHDA- 2017/05/17 06:00
CRDT- 2017/04/04 06:00
PHST- 2016/11/11 00:00 [received]
PHST- 2017/03/21 00:00 [accepted]
PHST- 2017/04/13 00:00 [revised]
PHST- 2017/04/04 06:00 [pubmed]
PHST- 2017/05/17 06:00 [medline]
PHST- 2017/04/04 06:00 [entrez]
AID - 10.1371/journal.pntd.0005516 [doi]
AID - PNTD-D-16-02033 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2017 Apr 3;11(4):e0005516. doi: 10.1371/journal.pntd.0005516. eCollection 2017 Apr.

PMID- 28340585
OWN - NLM
STAT- MEDLINE
DCOM- 20170606
LR - 20191210
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 16
IP - 1
DP - 2017 Mar 24
TI - Analytical sensitivity of current best-in-class malaria rapid diagnostic tests.
PG - 128
LID - 10.1186/s12936-017-1780-5 [doi]
AB - BACKGROUND: Rapid diagnostic tests (RDTs) are today the most widely used method for malaria diagnosis and are recommended, alongside microscopy, for the confirmation of suspected cases before the administration of anti-malarial treatment. The diagnostic performance of RDTs, as compared to microscopy or PCR is well described but the actual analytical sensitivity of current best-in-class tests is poorly documented. This value is however a key performance indicator and a benchmark value needed to developed new RDTs of improved sensitivity. METHODS:

Thirteen RDTs
      detecting either the Plasmodium falciparum histidine rich protein 2
      (HRP2) or the plasmodial lactate dehydrogenase (pLDH) antigens were
      selected from the best performing RDTs according to the WHO-FIND product
      testing programme. The analytical sensitivity of these products was
      evaluated using a range of reference materials including P. falciparum
      and Plasmodium vivax whole parasite samples as well as recombinant
      proteins. RESULTS: The best performing HRP2-based RDTs could detect all
      P. falciparum cultured samples at concentrations as low as 0.8 ng/mL of
      HRP2. The limit of detection of the best performing pLDH-based RDT
      specifically detecting P. vivax was 25 ng/mL of pLDH. CONCLUSION: The
      analytical sensitivity of P. vivax and Pan pLDH-based RDTs appears to
      vary considerably from product to product, and improvement of the limit-
      of-detection for P. vivax detecting RDTs is needed to match the
      performance of HRP2 and Pf pLDH-based RDTs for P. falciparum. Different
      assays using different reference materials produce different values for
      antigen concentration in a given specimen, highlighting the need to
      establish universal reference assays.
FAU - Jimenez, Alfons
AU - Jimenez A
AD - ISGlobal, Barcelona Ctr. Int. Health Res. (CRESIB), Hospital Clinic-
      Universitat de Barcelona, Barcelona, Spain.
AD - Spanish Consortium for Research in Epidemiology and Public Health
      (CIBERESP), Madrid, Spain.
FAU - Rees-Channer, Roxanne R
AU - Rees-Channer RR
AD - Hospital for Tropical Diseases, University College London Hospitals NHS
      Foundation Trust, London, UK.
FAU - Perera, Rushini
AU - Perera R
AD - Hospital for Tropical Diseases, University College London Hospitals NHS
      Foundation Trust, London, UK.
FAU - Gamboa, Dionicia
AU - Gamboa D

AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia & Instituto de Medicina Tropical Alexander Von Humboldt,
      Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Chiodini, Peter L
AU - Chiodini PL
AD - Hospital for Tropical Diseases, University College London Hospitals NHS
      Foundation Trust, London, UK.
FAU - Gonzalez, Iveth J
AU - Gonzalez IJ
AD - FIND, Geneva, Switzerland.
FAU - Mayor, Alfredo
AU - Mayor A
AD - ISGlobal, Barcelona Ctr. Int. Health Res. (CRESIB), Hospital Clinic-
      Universitat de Barcelona, Barcelona, Spain.
AD - Centro de Investigacao em Saude da Manhica (CISM), Maputo, Mozambique.
FAU - Ding, Xavier C
AU - Ding XC
AD - FIND, Geneva, Switzerland. xavier.ding@finddx.org.
LA - eng
PT - Comparative Study
PT - Evaluation Study
PT - Journal Article
DEP - 20170324
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antigens, Protozoan)
SB - IM
MH - Adult
MH - Antigens, Protozoan/analysis
MH - Chromatography, Affinity/*methods
MH - Diagnostic Tests, Routine/*methods
MH - Humans
MH - Malaria/*diagnosis
MH - Malaria, Falciparum
MH - Malaria, Vivax
MH - Plasmodium falciparum/immunology/isolation & purification
MH - Plasmodium vivax/immunology/*isolation & purification
MH - Sensitivity and Specificity
MH - Time Factors
PMC - PMC5366122
OTO - NOTNLM
OT - Analytical sensitivity
OT - HRP2
OT - Malaria rapid diagnostic test
OT - pLDH
EDAT- 2017/03/28 06:00
MHDA- 2017/06/07 06:00

CRDT- 2017/03/26 06:00
PHST- 2016/10/07 00:00 [received]
PHST- 2017/03/17 00:00 [accepted]
PHST- 2017/03/26 06:00 [entrez]
PHST- 2017/03/28 06:00 [pubmed]
PHST- 2017/06/07 06:00 [medline]
AID - 10.1186/s12936-017-1780-5 [doi]
AID - 10.1186/s12936-017-1780-5 [pii]
PST - epublish
SO - Malar J. 2017 Mar 24;16(1):128. doi: 10.1186/
s12936-017-1780-5.

PMID- 28091560
OWN - NLM
STAT- MEDLINE
DCOM- 20181015
LR - 20181113
IS - 2045-2322 (Electronic)
IS - 2045-2322 (Linking)
VI - 7
DP - 2017 Jan 16
TI - Spatio-temporal analysis of malaria incidence in the Peruvian
Amazon
      Region between 2002 and 2013.
PG - 40350
LID - 10.1038/srep40350 [doi]
AB - Malaria remains a major public health problem in the Peruvian
Amazon
      where the persistence of high-risk transmission areas
(hotspots)
      challenges the current malaria control strategies. This study
aimed at
      identifying significant space-time clusters of malaria
incidence in
      Loreto region 2002-2013 and to determine significant changes
across years
      in relation to the control measures applied. Poisson
regression and
      purely temporal, spatial, and space-time analyses were
conducted. Three
      significantly different periods in terms of annual incidence
rates (AIR)
      were identified, overlapping respectively with the pre-,
during, and
      post- implementation control activities supported by PAMAFRO
project. The
      most likely space-time clusters of malaria incidence for P.
vivax and P.
      falciparum corresponded to the pre- and first two years of the
PAMAFRO
      project and were situated in the northern districts of Loreto,
while
      secondary clusters were identified in eastern and southern
districts with

the latest onset and the shortest duration of PAMAFRO interventions.
Malaria in Loreto was highly heterogeneous at geographical level and over
time. Importantly, the excellent achievements obtained during 5 years of
intensified control efforts totally vanished in only 2 to 3 years after
the end of the program, calling for sustained political and financial
commitment for the success of malaria elimination as ultimate goal.
FAU - Soto-Calle, Veronica
AU - Soto-Calle V
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima 31, Peru.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima 31, Peru.
AD - Research Institute of Health and Society (IRSS), Universite catholique de
Louvain, Brussels 1200, Belgium.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima 31, Peru.
FAU - Abatih, Emmanuel
AU - Abatih E
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp 2000, Belgium.
FAU - DeDeken, Redgi
AU - DeDeken R
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp 2000, Belgium.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Direccion Regional de Salud Loreto DIRESA Loreto, Loreto 160, Peru.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp 2000, Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
Filosofia, Universidad Peruana Cayetano Heredia, Lima 31,

Peru.
FAU - D Alessandro, Umberto
AU - D Alessandro U
AD - Disease Control and Elimination, Medical Research Council Unit, Fajara
      220, The Gambia.
AD - London School of Hygiene &Tropical Medicine, London WC1E 7HT, UK.
AD - Department of Public Health, Institute of Tropical Medicine, Antwerp
      2000, Belgium.
FAU - Erhart, Annette
AU - Erhart A
AD - Disease Control and Elimination, Medical Research Council Unit, Fajara
      220, The Gambia.
AD - Department of Public Health, Institute of Tropical Medicine, Antwerp
      2000, Belgium.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite catholique de
      Louvain, Brussels 1200, Belgium.
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20170116
PL - England
TA - Sci Rep
JT - Scientific reports
JID - 101563288
SB - IM
MH - Cluster Analysis
MH - Geography
MH - Humans
MH - Incidence
MH - Malaria/*epidemiology/parasitology
MH - Malaria, Falciparum/epidemiology/parasitology
MH - Malaria, Vivax/epidemiology/parasitology
MH - Peru/epidemiology
MH - Plasmodium falciparum/physiology
MH - Plasmodium vivax/physiology
MH - *Spatio-Temporal Analysis
PMC - PMC5238441
EDAT- 2017/01/17 06:00
MHDA- 2018/10/16 06:00
CRDT- 2017/01/17 06:00
PHST- 2016/04/04 00:00 [received]
PHST- 2016/12/06 00:00 [accepted]
PHST- 2017/01/17 06:00 [entrez]
PHST- 2017/01/17 06:00 [pubmed]
PHST- 2018/10/16 06:00 [medline]
AID - srep40350 [pii]

AID - 10.1038/srep40350 [doi]
PST - epublish
SO - Sci Rep. 2017 Jan 16;7:40350. doi: 10.1038/srep40350.

PMID- 27799639
OWN - NLM
STAT- MEDLINE
DCOM- 20170518
LR - 20190309
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 95
IP - 6 Suppl
DP - 2016 Dec 28
TI - Epidemiology of Plasmodium vivax Malaria in Peru.
PG - 133-144
LID - 10.4269/ajtmh.16-0268 [doi]
AB - Malaria in Peru, dominated by Plasmodium vivax, remains a public health
problem. The 1990s saw newly epidemic malaria emerge, primarily in the
Loreto Department in the Amazon region, including areas near to Iquitos,
the capital city, but sporadic malaria transmission also occurred in the
1990s-2000s in both north-coastal Peru and the gold mining regions of
southeastern Peru. Although a Global Fund-supported intervention
(PAMAFRO, 2005-2010) was temporally associated with a decrease of malaria
transmission, from 2012 to the present, both P. vivax and Plasmodium
falciparum malaria cases have rapidly increased. The Peruvian Ministry of
Health continues to provide artemesinin-based combination therapy for
microscopy-confirmed cases of P. falciparum and chloroquine-primaquine
for P. vivax Malaria transmission continues in remote areas nonetheless,
where the mobility of humans and parasites facilitates continued
reintroduction outside of ongoing surveillance activities, which is
critical to address for future malaria control and elimination efforts.
Ongoing P. vivax research gaps in Peru include the following:
identification of asymptomatic parasitemics, quantification of the
contribution of patent and subpatent parasitemics to mosquito
transmission, diagnosis of nonparasitemic hypnozoite carriers, and
implementation of surveillance for potential emergence of

chloroquine-
      and 8-aminoquinoline-resistant P. vivax Clinical trials of
tafenoquine in
      Peru have been promising, and glucose-6-phosphate
dehydrogenase
      deficiency in the region has not been observed to be a
limitation to its
      use. Larger-scale challenges for P. vivax (and malaria in
general) in
      Peru include logistical difficulties in accessing remote
riverine
      populations, consequences of government policy and poverty
trends, and
      obtaining international funding for malaria control and
elimination.
CI - (c) The American Society of Tropical Medicine and Hygiene.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Research Institute of Health and Society, Universite
Catholique de
      Louvain, Brussels, Belgium.
AD - Instituto de Medicina Tropical "Alexander von Humboldt,"
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Instituto de Medicina Tropical "Alexander von Humboldt,"
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Manrique, Paulo
AU - Manrique P
AD - Instituto de Medicina Tropical "Alexander von Humboldt,"
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Conn, Jan E
AU - Conn JE
AD - Wadsworth Center, New York State Department of Health, Albany,
New York.
AD - Department of Biomedical Sciences, School of Public Health,
University at
      Albany (State University of New York), Albany, New York.
FAU - Moreno, Marta
AU - Moreno M
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California San Diego, San Diego, California.
FAU - Lescano, Andres G
AU - Lescano AG
AD - Facultad de Salud Publica, Universidad Peruana Cayetano
Heredia, Lima,
      Peru.

FAU - Sanchez, Juan F
AU - Sanchez JF
AD - Facultad de Salud Publica, Universidad Peruana Cayetano Heredia, Lima,
      Peru.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Direccion Regional de Salud Loreto, Ministerio de Salud, Iquitos, Peru.
FAU - Silva, Hermann
AU - Silva H
AD - Direccion Regional de Salud Loreto, Ministerio de Salud, Iquitos, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical "Alexander von Humboldt," Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicina Tropical "Alexander von Humboldt," Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, San Diego, California.
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - D43 TW007393/TW/FIC NIH HHS/United States
GR - K24 AI068903/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20161031
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
RN - 0 (Antimalarials)
SB - IM
MH - Animals
MH - Anopheles/parasitology/physiology
MH - Antimalarials/administration & dosage/therapeutic use
MH - Endemic Diseases
MH - Humans
MH - Incidence
MH - Insect Vectors
MH - Malaria, Vivax/*epidemiology
MH - Peru/epidemiology
MH - Pharmacogenomic Variants
MH - *Plasmodium vivax/genetics
MH - Public Health

MH - Time Factors
PMC - PMC5201219
EDAT- 2016/11/02 06:00
MHDA- 2017/05/19 06:00
CRDT- 2016/11/02 06:00
PHST- 2016/04/06 00:00 [received]
PHST- 2016/09/29 00:00 [accepted]
PHST- 2016/11/02 06:00 [pubmed]
PHST- 2017/05/19 06:00 [medline]
PHST- 2016/11/02 06:00 [entrez]
AID - 10.4269/ajtmh.16-0268 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2016 Dec 28;95(6 Suppl):133-144. doi:
      10.4269/ajtmh.16-0268. Epub 2016 Oct 31.

PMID- 27828953
OWN - NLM
STAT- PubMed-not-MEDLINE
LR - 20191120
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 10
IP - 11
DP - 2016 Nov
TI - Correction: Colorimetric Detection of Plasmodium vivax in
Urine Using
      MSP10 Oligonucleotides and Gold Nanoparticles.
PG - e0005143
LID - 10.1371/journal.pntd.0005143 [doi]
AB - [This corrects the article DOI: 10.1371/
journal.pntd.0005029.].
FAU - Alnasser, Yossef
AU - Alnasser Y
FAU - Ferradas, Cusi
AU - Ferradas C
FAU - Clark, Taryn
AU - Clark T
FAU - Calderon, Maritza
AU - Calderon M
FAU - Gurbillon, Alejandro
AU - Gurbillon A
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - McKakpo, Uri S
AU - McKakpo US
FAU - Quakyi, Isabella A
AU - Quakyi IA
FAU - Bosompem, Kwabena M
AU - Bosompem KM
FAU - Sullivan, David J
AU - Sullivan DJ
FAU - Vinetz, Joseph M
AU - Vinetz JM
FAU - Gilman, Robert H

AU - Gilman RH
LA - eng
PT - Published Erratum
DEP - 20161109
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
EFR - PLoS Negl Trop Dis. 2016 Oct 5;10 (10):e0005029. PMID:
27706158
PMC - PMC5102355
EDAT- 2016/11/10 06:00
MHDA- 2016/11/10 06:01
CRDT- 2016/11/10 06:00
PHST- 2016/11/10 06:00 [entrez]
PHST- 2016/11/10 06:00 [pubmed]
PHST- 2016/11/10 06:01 [medline]
AID - 10.1371/journal.pntd.0005143 [doi]
AID - PNTD-D-16-01982 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2016 Nov 9;10(11):e0005143. doi:
      10.1371/journal.pntd.0005143. eCollection 2016 Nov.

PMID- 27706158
OWN - NLM
STAT- MEDLINE
DCOM- 20170525
LR - 20210109
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 10
IP - 10
DP - 2016 Oct
TI - Colorimetric Detection of Plasmodium vivax in Urine Using
MSP10
      Oligonucleotides and Gold Nanoparticles.
PG - e0005029
LID - 10.1371/journal.pntd.0005029 [doi]
AB - Plasmodium vivax is the most prevalent cause of human malaria
in the
      world and can lead to severe disease with high potential for
relapse. Its
      genetic and geographic diversities make it challenging to
control. P.
      vivax is understudied and to achieve control of malaria in
endemic areas,
      a rapid, accurate, and simple diagnostic tool is necessary. In
this pilot
      study, we found that a colorimetric system using AuNPs and
MSP10 DNA
      detection in urine can provide fast, easy, and inexpensive
identification
      of P. vivax. The test exhibited promising sensitivity (84%),
high

specificity (97%), and only mild cross-reactivity with P. falciparum (21%). It is simple to use, with a visible color change that negates the need for a spectrometer, making it suitable for use in austere conditions. Using urine eliminates the need for finger-prick, increasing both the safety profile and patient acceptance of this model.
FAU - Alnasser, Yossef
AU - Alnasser Y
AD - Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, United States of America.
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - King Saud University, Riyadh, Saudi Arabia.
FAU - Ferradas, Cusi
AU - Ferradas C
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Clark, Taryn
AU - Clark T
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - Section of Emergency Medicine, Department of Medicine, Louisiana State University Health Sciences Center, New Orleans, Louisiana, United States of America.
FAU - Calderon, Maritza
AU - Calderon M
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Gurbillon, Alejandro
AU - Gurbillon A
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - McKakpo, Uri S
AU - McKakpo US
AD - School of Public Health and Noguchi Memorial Institute for Medical Research, University of Ghana, Legon, Accra, Ghana.
FAU - Quakyi, Isabella A
AU - Quakyi IA
AD - School of Public Health and Noguchi Memorial Institute for Medical Research, University of Ghana, Legon, Accra, Ghana.
FAU - Bosompem, Kwabena M
AU - Bosompem KM
AD - School of Public Health and Noguchi Memorial Institute for Medical Research, University of Ghana, Legon, Accra, Ghana.
FAU - Sullivan, David J
AU - Sullivan DJ
AD - Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland,

      United States of America.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
AD - University of California San Diego, San Diego, California,
United States
      of America.
FAU - Gilman, Robert H
AU - Gilman RH
AD - Johns Hopkins Bloomberg School of Public Health, Baltimore,
Maryland,
      United States of America.
AD - Universidad Peruana Cayetano Heredia, Lima, Peru.
LA - eng
GR - MR/K007467/1/MRC_/Medical Research Council/United Kingdom
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089702/AI/NIAID NIH HHS/United States
PT - Journal Article
DEP - 20161005
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
RN - 0 (Antigens, Protozoan)
RN - 0 (DNA, Protozoan)
RN - 0 (Oligonucleotides)
RN - 0 (Protozoan Proteins)
RN - 7440-57-5 (Gold)
SB - IM
EIN - PLoS Negl Trop Dis. 2016 Nov 9;10 (11):e0005143. PMID:
27828953
MH - Antigens, Protozoan/genetics
MH - Colorimetry/economics/*methods/standards
MH - Cross Reactions
MH - DNA, Protozoan/urine
MH - Gold
MH - Humans
MH - Malaria, Vivax/*diagnosis/parasitology/urine
MH - Mass Screening
MH - *Metal Nanoparticles
MH - Microscopy
MH - *Oligonucleotides
MH - Parasitemia/diagnosis/parasitology
MH - Pilot Projects
MH - Plasmodium vivax/genetics/*isolation & purification/
ultrastructure
MH - Protozoan Proteins/genetics
MH - Sensitivity and Specificity
MH - Urine/*parasitology
PMC - PMC5051960
COIS- The authors have declared that no competing interests exist.
EDAT- 2016/10/06 06:00
MHDA- 2017/05/26 06:00
CRDT- 2016/10/06 06:00

PHST- 2016/03/05 00:00 [received]
PHST- 2016/09/09 00:00 [accepted]
PHST- 2016/10/06 06:00 [entrez]
PHST- 2016/10/06 06:00 [pubmed]
PHST- 2017/05/26 06:00 [medline]
AID - 10.1371/journal.pntd.0005029 [doi]
AID - PNTD-D-16-00394 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2016 Oct 5;10(10):e0005029. doi:
10.1371/journal.pntd.0005029. eCollection 2016 Oct.

PMID- 27348298
OWN - NLM
STAT- MEDLINE
DCOM- 20170907
LR - 20220310
IS - 1546-1718 (Electronic)
IS - 1061-4036 (Linking)
VI - 48
IP - 8
DP - 2016 Aug
TI - Population genomics studies identify signatures of global dispersal and
drug resistance in Plasmodium vivax.
PG - 953-8
LID - 10.1038/ng.3588 [doi]
AB - Plasmodium vivax is a major public health burden, responsible for the
majority of malaria infections outside Africa. We explored the impact of
demographic history and selective pressures on the P. vivax genome by
sequencing 182 clinical isolates sampled from 11 countries across the
globe, using hybrid selection to overcome human DNA contamination. We
confirmed previous reports of high genomic diversity in P. vivax relative
to the more virulent Plasmodium falciparum species; regional populations
of P. vivax exhibited greater diversity than the global P. falciparum
population, indicating a large and/or stable population. Signals of
natural selection suggest that P. vivax is evolving in response to
antimalarial drugs and is adapting to regional differences in the human
host and the mosquito vector. These findings underline the variable
epidemiology of this parasite species and highlight the breadth of
approaches that may be required to eliminate P. vivax globally.

FAU - Hupalo, Daniel N
AU - Hupalo DN
AD - Center for Genomics and Systems Biology, Department of
Biology, New York
      University, New York, New York, USA.
FAU - Luo, Zunping
AU - Luo Z
AD - Center for Genomics and Systems Biology, Department of
Biology, New York
      University, New York, New York, USA.
FAU - Melnikov, Alexandre
AU - Melnikov A
AD - Broad Institute of MIT and Harvard, Cambridge, Massachusetts,
USA.
FAU - Sutton, Patrick L
AU - Sutton PL
AD - Center for Genomics and Systems Biology, Department of
Biology, New York
      University, New York, New York, USA.
FAU - Rogov, Peter
AU - Rogov P
AD - Broad Institute of MIT and Harvard, Cambridge, Massachusetts,
USA.
FAU - Escalante, Ananias
AU - Escalante A
AD - Institute for Genomics and Evolutionary Medicine, Department
of Biology,
      Temple University, Philadelphia, Pennsylvania, USA.
FAU - Vallejo, Andres F
AU - Vallejo AF
AD - Caucaseco Scientific Research Center, Cali, Colombia.
FAU - Herrera, Socrates
AU - Herrera S
AD - Caucaseco Scientific Research Center, Cali, Colombia.
FAU - Arevalo-Herrera, Myriam
AU - Arevalo-Herrera M
AD - Caucaseco Scientific Research Center, Cali, Colombia.
AD - Faculty of Health, Universidad del Valle, Cali, Colombia.
FAU - Fan, Qi
AU - Fan Q
AD - Dalian Institute of Biotechnology, Dalian, Liaoning, China.
FAU - Wang, Ying
AU - Wang Y
AD - Third Military Medical University, Shapingba, Chongqing,
China.
FAU - Cui, Liwang
AU - Cui L
AD - Department of Entomology, Pennsylvania State University,
University Park,
      Pennsylvania, USA.
FAU - Lucas, Carmen M
AU - Lucas CM
AD - US Naval Medical Research Unit No. 6, Callao, Peru.
FAU - Durand, Salomon

AU - Durand S
AD - US Naval Medical Research Unit No. 6, Callao, Peru.
FAU - Sanchez, Juan F
AU - Sanchez JF
AD - US Naval Medical Research Unit No. 6, Callao, Peru.
FAU - Baldeviano, G Christian
AU - Baldeviano GC
AD - US Naval Medical Research Unit No. 6, Callao, Peru.
FAU - Lescano, Andres G
AU - Lescano AG
AD - US Naval Medical Research Unit No. 6, Callao, Peru.
FAU - Laman, Moses
AU - Laman M
AD - Papua New Guinea Institute of Medical Research, Madang, Papua, New
      Guinea.
FAU - Barnadas, Celine
AU - Barnadas C
AD - Vector Borne Diseases Unit, Papua New Guinea Institute of Medical
      Research, Goroka, Papua New Guinea.
AD - Division of Infection and Immunity, Walter &Eliza Hall Institute of
      Medical Research, Parkville, Australia.
FAU - Barry, Alyssa
AU - Barry A
AD - Division of Population Health and Immunity, Walter and Eliza Hall
      Institute of Medical Research, Parkville, Victoria, Australia.
AD - Department of Medical Biology, University of Melbourne, Carlton,
      Victoria, Australia.
FAU - Mueller, Ivo
AU - Mueller I
AD - Division of Population Health and Immunity, Walter and Eliza Hall
      Institute of Medical Research, Parkville, Victoria, Australia.
AD - Department of Medical Biology, University of Melbourne, Carlton,
      Victoria, Australia.
AD - Institute of Global Health (ISGLOBAL), Barcelona, Spain.
FAU - Kazura, James W
AU - Kazura JW
AD - Center for Global Health and Diseases, Case Western Reserve University,
      Cleveland, Ohio, USA.
FAU - Eapen, Alex
AU - Eapen A
AD - National Institute of Malaria Research Field Unit, Indian Council of
      Medical Research, National Institute of Epidemiology Campus, Chennai,
      Tamil Nadu, India.
FAU - Kanagaraj, Deena

AU - Kanagaraj D
AD - National Institute of Malaria Research Field Unit, Indian Council of
      Medical Research, National Institute of Epidemiology Campus, Chennai,
      Tamil Nadu, India.
FAU - Valecha, Neena
AU - Valecha N
AD - National Institute of Malaria Research, Indian Council of Medical
      Research, New Delhi, India.
FAU - Ferreira, Marcelo U
AU - Ferreira MU
AD - Department of Parasitology, Institute of Biomedical Sciences, University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Roobsoong, Wanlapa
AU - Roobsoong W
AD - Mahidol Vivax Research Unit, Faculty of Tropical Medicine, Mahidol
      University, Bangkok, Thailand.
FAU - Nguitragool, Wang
AU - Nguitragool W
AD - Department of Molecular Tropical Medicine and Genetics, Faculty of
      Tropical Medicine, Mahidol University, Bangkok, Thailand.
FAU - Sattabonkot, Jetsumon
AU - Sattabonkot J
AD - Mahidol Vivax Research Unit, Faculty of Tropical Medicine, Mahidol
      University, Bangkok, Thailand.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicine Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Universidad Peruana
      Cayetano Heredia, Lima, Peru.
FAU - Kosek, Margaret
AU - Kosek M
AD - Department of International Health, Johns Hopkins Bloomberg School of
      Public Health, Baltimore, Maryland, USA.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicine Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Universidad Peruana
      Cayetano Heredia, Lima, Peru.
AD - Division of Infectious Diseases, Department of Medicine, University of

      California San Diego, La Jolla, California, USA.
FAU - Gonzalez-Ceron, Lilia
AU - Gonzalez-Ceron L
AD - Regional Centre for Research in Public Health, National Institute for
      Public Health, Tapachula, Chiapas, Mexico.
FAU - Birren, Bruce W
AU - Birren BW
AD - Broad Institute of MIT and Harvard, Cambridge, Massachusetts, USA.
FAU - Neafsey, Daniel E
AU - Neafsey DE
AD - Broad Institute of MIT and Harvard, Cambridge, Massachusetts, USA.
FAU - Carlton, Jane M
AU - Carlton JM
AD - Center for Genomics and Systems Biology, Department of Biology, New York
      University, New York, New York, USA.
LA - eng
GR - U19 AI089676/AI/NIAID NIH HHS/United States
GR - HHSN272200900018C/AI/NIAID NIH HHS/United States
GR - D43 TW007393/TW/FIC NIH HHS/United States
GR - T32 AI007180/AI/NIAID NIH HHS/United States
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089686/AI/NIAID NIH HHS/United States
GR - U19 AI089702/AI/NIAID NIH HHS/United States
GR - K24 AI068903/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PT - Research Support, U.S. Gov't, Non-P.H.S.
DEP - 20160627
PL - United States
TA - Nat Genet
JT - Nature genetics
JID - 9216904
RN - 0 (Antimalarials)
RN - 0 (Genetic Markers)
SB - IM
CIN - Nat Genet. 2016 Jul 27;48(8):825-6. PMID: 27463397
MH - Antimalarials/pharmacology
MH - Drug Resistance/*genetics
MH - Genetic Markers/*genetics
MH - Humans
MH - Malaria, Vivax/drug therapy/genetics/*parasitology
MH - Metagenomics/*methods
MH - Plasmodium vivax/drug effects/*genetics/pathogenicity
MH - Selection, Genetic/drug effects/*genetics
MH - Transcriptome/*genetics
PMC - PMC5347536
MID - NIHMS842136
EDAT- 2016/06/28 06:00

MHDA- 2017/09/08 06:00
CRDT- 2016/06/28 06:00
PHST- 2015/12/11 00:00 [received]
PHST- 2016/05/13 00:00 [accepted]
PHST- 2016/06/28 06:00 [entrez]
PHST- 2016/06/28 06:00 [pubmed]
PHST- 2017/09/08 06:00 [medline]
AID - ng.3588 [pii]
AID - 10.1038/ng.3588 [doi]
PST - ppublish
SO - Nat Genet. 2016 Aug;48(8):953-8. doi: 10.1038/ng.3588. Epub 2016 Jun 27.

PMID- 26766548
OWN - NLM
STAT- MEDLINE
DCOM- 20160502
LR - 20190202
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 10
IP - 1
DP - 2016 Jan
TI - Population Genetics of Plasmodium vivax in the Peruvian Amazon.
PG - e0004376
LID - 10.1371/journal.pntd.0004376 [doi]
AB - BACKGROUND: Characterizing the parasite dynamics and population structure
provides useful information to understand the dynamic of transmission and
to better target control interventions. Despite considerable efforts for
its control, vivax malaria remains a major health problem in Peru. In
this study, we have explored the population genetics of Plasmodium vivax
isolates from Iquitos, the main city in the Peruvian Amazon, and 25
neighbouring peri-urban as well as rural villages along the Iquitos-Nauta
Road. METHODOLOGY/ RESULTS: From April to December 2008, 292 P. vivax
isolates were collected and successfully genotyped using 14 neutral
microsatellites. Analysis of the molecular data revealed a similar
proportion of monoclonal and polyclonal infections in urban areas, while
in rural areas monoclonal infections were predominant (p = 0.002).
Multiplicity of infection was higher in urban (MOI = 1.5-2) compared to
rural areas (MOI = 1) (p = 0.003). The level of genetic

diversity was
      similar in all areas (He = 0.66-0.76, p = 0.32) though genetic
      differentiation between areas was substantial (PHIPT = 0.17,
p<0.0001).
      Principal coordinate analysis showed a marked differentiation
between
      parasites from urban and rural areas. Linkage disequilibrium
was detected
      in all the areas ([Formula: see text] = 0.08-0.49, for all
p<0.0001).
      Gene flow among the areas was stablished through Bayesian
analysis of
      migration models. Recent bottleneck events were detected in 4
areas and a
      recent parasite expansion in one of the isolated areas. In
total, 87
      unique haplotypes grouped in 2 or 3 genetic clusters described
a sub-
      structured parasite population. CONCLUSION/SIGNIFICANCE: Our
study shows
      a sub-structured parasite population with clonal propagation,
with most
      of its components recently affected by bottleneck events.
Iquitos city is
      the main source of parasite spreading for all the peripheral
study areas.
      The routes of transmission and gene flow and the reduction of
the
      parasite population described are important from the public
health
      perspective as well for the formulation of future control
policies.
FAU - Delgado-Ratto, Christopher
AU - Delgado-Ratto C
AD - Epidemiology for Global Health Institute, University of
Antwerp, Antwerp,
      Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de
Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Soto-Calle, Veronica E
AU - Soto-Calle VE
AD - Institute of Tropical Medicine Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Van den Eede, Peter
AU - Van den Eede P
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,

      Antwerp, Belgium.
FAU - Torres, Eliana
AU - Torres E
AD - Institute of Tropical Medicine Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Sanchez-Martinez, Luis
AU - Sanchez-Martinez L
AD - Institute of Tropical Medicine Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - Institute of Tropical Medicine Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Rodriguez Ferrucci, Hugo
AU - Rodriguez Ferrucci H
AD - Ministry of Health of Peru, Loreto, Peru.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Institute of Tropical Medicine Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Erhart, Annette
AU - Erhart A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp, Belgium.
FAU - Van Geertruyden, Jean-Pierre
AU - Van Geertruyden JP
AD - Epidemiology for Global Health Institute, University of Antwerp, Antwerp,
      Belgium.
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
AD - Department of Public Health, Institute of Tropical Medicine, Antwerp,
      Belgium.
AD - Medical Research Council Unit, Fajara, The Gambia.
AD - London School of Hygiene and Tropical Medicine, London, United Kingdom.
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20160114
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases

JID - 101291488
SB - IM
MH - Genetic Linkage
MH - Genetic Variation
MH - Genotype
MH - Microsatellite Repeats/genetics
MH - Peru
MH - Plasmodium vivax/*genetics
PMC - PMC4713096
EDAT- 2016/01/15 06:00
MHDA- 2016/05/03 06:00
CRDT- 2016/01/15 06:00
PHST- 2015/04/09 00:00 [received]
PHST- 2015/12/18 00:00 [accepted]
PHST- 2016/01/15 06:00 [entrez]
PHST- 2016/01/15 06:00 [pubmed]
PHST- 2016/05/03 06:00 [medline]
AID - 10.1371/journal.pntd.0004376 [doi]
AID - PNTD-D-15-00592 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2016 Jan 14;10(1):e0004376. doi:
      10.1371/journal.pntd.0004376. eCollection 2016 Jan.

PMID- 26356311
OWN - NLM
STAT- MEDLINE
DCOM- 20160523
LR - 20181113
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 10
IP - 9
DP - 2015
TI - Hotspots of Malaria Transmission in the Peruvian Amazon: Rapid
Assessment
      through a Parasitological and Serological Survey.
PG - e0137458
LID - 10.1371/journal.pone.0137458 [doi]
AB - BACKGROUND: With low and markedly seasonal malaria
transmission,
      increasingly sensitive tools for better stratifying the risk
of infection
      and targeting control interventions are needed. A cross-
sectional survey
      to characterize the current malaria transmission patterns,
identify
      hotspots, and detect recent changes using parasitological and
serological
      measures was conducted in three sites of the Peruvian Amazon.
MATERIAL
      AND METHODS: After full census of the study population, 651
participants
      were interviewed, clinically examined and had a blood sample
taken for

      the detection of malaria parasites (microscopy and PCR) and antibodies
      against P. vivax (PvMSP119, PvAMA1) and P. falciparum (PfGLURP, PfAMA1)
      antigens by ELISA. Risk factors for malaria infection (positive PCR) and
      malaria exposure (seropositivity) were assessed by multivariate survey
      logistic regression models. Age-specific seroprevalence was analyzed
      using a reversible catalytic conversion model based on maximum likelihood
      for generating seroconversion rates (SCR, lambda). SaTScan was used to
      detect spatial clusters of serology-positive individuals within each
      site. RESULTS: The overall parasite prevalence by PCR was low, i.e. 3.9%
      for P. vivax and 6.7% for P. falciparum, while the seroprevalence was
      substantially higher, 33.6% for P. vivax and 22.0% for P. falciparum,
      with major differences between study sites. Age and location (site) were
      significantly associated with P. vivax exposure; while location, age and
      outdoor occupation were associated with P. falciparum exposure. P.
      falciparum seroprevalence curves showed a stable transmission throughout
      time, while for P. vivax transmission was better described by a model
      with two SCRs. The spatial analysis identified well-defined clusters of
      P. falciparum seropositive individuals in two sites, while it detected
      only a very small cluster of P. vivax exposure. CONCLUSION: The use of a
      single parasitological and serological malaria survey has proven to be an
      efficient and accurate method to characterize the species specific
      heterogeneity in malaria transmission at micro-geographical level as well
      as to identify recent changes in transmission.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru; Research Institute of Health and
      Society (IRSS), Universite catholique de Louvain, Brussels 1200, Belgium;
      Department of Biomedical Sciences, Institute of Tropical

Medicine,
      Antwerp 2000, Belgium.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite catholique de
      Louvain, Brussels 1200, Belgium.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp 2000, Belgium.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Region de Salud Loreto, Iquitos, Loreto 160, Peru.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru; Departamento de Ciencias
      Celulares y Moleculares, Facultad de Ciencias y Filosofia, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima 31, Peru
FAU - Alava, Freddy
AU - Alava F
AD - Region de Salud Loreto, Iquitos, Loreto 160, Peru.
FAU - Soares, Irene S
AU - Soares IS
AD - Departamento de Analises Clinicas e Toxicologicas, Faculdade de Ciencias
      Farmaceuticas, Universidade de Sao Paulo, Sao Paulo 05508-900, Brazil.
FAU - Remarque, Edmond
AU - Remarque E
AD - Department of Parasitology, Biomedical Primate Research Centre, 2280 GH
      Rijswijk, The Netherlands.
FAU - D Alessandro, Umberto

AU - D Alessandro U
AD - Disease Control and Elimination, Medical Research Council Unit, Fajara
      220, The Gambia; London School of Hygiene & Tropical Medicine, London
      WC1E 7HT, United Kingdom.
FAU - Erhart, Annette
AU - Erhart A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
      Antwerp 2000, Belgium.
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20150910
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
SB - IM
MH - Adolescent
MH - Adult
MH - Child
MH - Factor Analysis, Statistical
MH - Geography
MH - Humans
MH - Incidence
MH - Malaria, Falciparum/*blood/epidemiology/parasitology/*transmission
MH - Malaria, Vivax/*blood/epidemiology/parasitology/*transmission
MH - Multivariate Analysis
MH - Peru/epidemiology
MH - Plasmodium falciparum
MH - Plasmodium vivax
MH - Prevalence
MH - Risk Factors
MH - Seroepidemiologic Studies
MH - Species Specificity
MH - Young Adult
PMC - PMC4565712
EDAT- 2015/09/12 06:00
MHDA- 2016/05/24 06:00
CRDT- 2015/09/11 06:00
PHST- 2015/04/21 00:00 [received]
PHST- 2015/08/17 00:00 [accepted]
PHST- 2015/09/11 06:00 [entrez]
PHST- 2015/09/12 06:00 [pubmed]
PHST- 2016/05/24 06:00 [medline]
AID - 10.1371/journal.pone.0137458 [doi]
AID - PONE-D-15-17351 [pii]
PST - epublish
SO - PLoS One. 2015 Sep 10;10(9):e0137458. doi: 10.1371/journal.pone.0137458.
      eCollection 2015.

PMID- 26259937
OWN - NLM
STAT- MEDLINE
DCOM- 20151127
LR - 20190309
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 93
IP - 3 Suppl
DP - 2015 Sep
TI - Malaria Diagnosis Across the International Centers of Excellence for
      Malaria Research: Platforms, Performance, and Standardization.
PG - 99-109
LID - 10.4269/ajtmh.15-0004 [doi]
AB - Diagnosis is "the act of identifying a disease, illness, or problem by
      examining someone or something." When an individual with acute fever
      presents for clinical attention, accurate diagnosis leading to specific,
      prompt treatment often saves lives. As applied to malaria, not only
      individual patient diagnosis is important but also assessing population-
      level malaria prevalence using appropriate diagnostic methods is
      essential for public health purposes. Similarly, identifying (diagnosing)
      fake antimalarial medications prevents the use of counterfeit drugs that
      can have disastrous effects. Therefore, accurate diagnosis in broad areas
      related to malaria is fundamental to improving health-care delivery,
      informing funding agencies of current malaria situations, and aiding in
      the prioritization of regional and national control efforts. The
      International Centers of Excellence for Malaria Research (ICEMR),
      supported by the U.S. National Institute of Allergy and Infectious
      Diseases, has collaborated on global efforts to improve malaria
      diagnostics by working to harmonize and systematize procedures across
      different regions where endemicity and financial resources vary. In this
      article, the different diagnostic methods used across each ICEMR are
      reviewed and challenges are discussed.
CI - (c) The American Society of Tropical Medicine and Hygiene.

FAU - Kobayashi, Tamaki
AU - Kobayashi T
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Ndiaye, Daouda
AU - Ndiaye D
FAU - Cui, Liwang
AU - Cui L
FAU - Sutton, Patrick L
AU - Sutton PL
FAU - Vinetz, Joseph M
AU - Vinetz JM
LA - eng
GR - U19 AI089676/AI/NIAID NIH HHS/United States
GR - U19AI089702/AI/NIAID NIH HHS/United States
GR - U19AI089680/AI/NIAID NIH HHS/United States
GR - 5U19AI089676/AI/NIAID NIH HHS/United States
GR - U19AI089672/AI/NIAID NIH HHS/United States
GR - U19AI089696/AI/NIAID NIH HHS/United States
GR - U19 AI089680/AI/NIAID NIH HHS/United States
GR - U19AI089681/AI/NIAID NIH HHS/United States
GR - U19AI089688/AI/NIAID NIH HHS/United States
GR - U19AI089683/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089674/AI/NIAID NIH HHS/United States
GR - U19 AI089696/AI/NIAID NIH HHS/United States
GR - U19AI089674/AI/NIAID NIH HHS/United States
GR - U19 AI089686/AI/NIAID NIH HHS/United States
GR - U19 AI089688/AI/NIAID NIH HHS/United States
GR - U19 AI089683/AI/NIAID NIH HHS/United States
GR - U19 AI089672/AI/NIAID NIH HHS/United States
GR - U19 AI089702/AI/NIAID NIH HHS/United States
GR - U19AI089686/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Review
DEP - 20150810
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Biomedical Research
MH - Drug Resistance
MH - Humans
MH - International Cooperation
MH - Malaria/*diagnosis
MH - Malaria, Falciparum/diagnosis
MH - Malaria, Vivax/diagnosis
MH - Plasmodium falciparum
MH - Plasmodium vivax
PMC - PMC4574279
EDAT- 2015/08/12 06:00
MHDA- 2015/12/15 06:00

CRDT- 2015/08/12 06:00
PHST- 2015/01/02 00:00 [received]
PHST- 2015/06/23 00:00 [accepted]
PHST- 2015/08/12 06:00 [entrez]
PHST- 2015/08/12 06:00 [pubmed]
PHST- 2015/12/15 06:00 [medline]
AID - 10.4269/ajtmh.15-0004 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2015 Sep;93(3 Suppl):99-109. doi:
      10.4269/ajtmh.15-0004. Epub 2015 Aug 10.

PMID- 26259945
OWN - NLM
STAT- MEDLINE
DCOM- 20151127
LR - 20190309
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 93
IP - 3 Suppl
DP - 2015 Sep
TI - Malaria Molecular Epidemiology: Lessons from the International Centers of
      Excellence for Malaria Research Network.
PG - 79-86
LID - 10.4269/ajtmh.15-0005 [doi]
AB - Molecular epidemiology leverages genetic information to study the risk
      factors that affect the frequency and distribution of malaria cases. This
      article describes molecular epidemiologic investigations currently being
      carried out by the International Centers of Excellence for Malaria
      Research (ICEMR) network in a variety of malaria-endemic settings. First,
      we discuss various novel approaches to understand malaria incidence and
      gametocytemia, focusing on Plasmodium falciparum and Plasmodium vivax.
      Second, we describe and compare different parasite genotyping methods
      commonly used in malaria epidemiology and population genetics. Finally,
      we discuss potential applications of molecular epidemiological tools and
      methods toward malaria control and elimination efforts.

FAU - Escalante, Ananias A
AU - Escalante AA
FAU - Ferreira, Marcelo U
AU - Ferreira MU
FAU - Vinetz, Joseph M
AU - Vinetz JM

FAU - Volkman, Sarah K
AU - Volkman SK
FAU - Cui, Liwang
AU - Cui L
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Krogstad, Donald J
AU - Krogstad DJ
FAU - Barry, Alyssa E
AU - Barry AE
FAU - Carlton, Jane M
AU - Carlton JM
FAU - van Eijk, Anna Maria
AU - van Eijk AM
FAU - Pradhan, Khageswar
AU - Pradhan K
FAU - Mueller, Ivo
AU - Mueller I
FAU - Greenhouse, Bryan
AU - Greenhouse B
FAU - Pacheco, M Andreina
AU - Pacheco MA
FAU - Vallejo, Andres F
AU - Vallejo AF
FAU - Herrera, Socrates
AU - Herrera S
FAU - Felger, Ingrid
AU - Felger I
LA - eng
GR - U19 AI089676/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089674/AI/NIAID NIH HHS/United States
GR - U19 AI089696/AI/NIAID NIH HHS/United States
GR - U19 AI089686/AI/NIAID NIH HHS/United States
GR - U19 AI089672/AI/NIAID NIH HHS/United States
GR - U19 AI089702/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20150810
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Gene Flow/genetics
MH - Genetics, Population
MH - Genotyping Techniques
MH - Humans
MH - International Cooperation
MH - Malaria/*epidemiology/*genetics/prevention & control/
transmission
MH - Malaria, Falciparum/epidemiology/genetics
MH - Malaria, Vivax/epidemiology/genetics
MH - Molecular Epidemiology

MH - Plasmodium/*genetics
MH - Plasmodium falciparum/genetics
MH - Plasmodium vivax/genetics
PMC - PMC4574277
EDAT- 2015/08/12 06:00
MHDA- 2015/12/15 06:00
CRDT- 2015/08/12 06:00
PHST- 2015/01/02 00:00 [received]
PHST- 2015/05/15 00:00 [accepted]
PHST- 2015/08/12 06:00 [entrez]
PHST- 2015/08/12 06:00 [pubmed]
PHST- 2015/12/15 06:00 [medline]
AID - 10.4269/ajtmh.15-0005 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2015 Sep;93(3 Suppl):79-86. doi:
      10.4269/ajtmh.15-0005. Epub 2015 Aug 10.

PMID- 26293655
OWN - NLM
STAT- MEDLINE
DCOM- 20160511
LR - 20220129
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 14
DP - 2015 Aug 21
TI - Assessment of an automated capillary system for Plasmodium
vivax
      microsatellite genotyping.
PG - 326
LID - 10.1186/s12936-015-0842-9 [doi]
AB - BACKGROUND: Several platforms have been used to generate the
primary data
      for microsatellite analysis of malaria parasite genotypes.
Each has
      relative advantages but share a limitation of being time- and
cost-
      intensive. A commercially available automated capillary gel
cartridge
      system was assessed in the microsatellite analysis of
Plasmodium vivax
      diversity in the Peruvian Amazon. METHODS: The reproducibility
and
      accuracy of a commercially-available automated capillary
system, QIAxcel,
      was assessed using a sequenced PCR product of 227 base pairs.
This
      product was measured 42 times, then 27 P. vivax samples from
Peruvian
      Amazon subjects were analyzed with this instrument using five
informative
      microsatellites. Results from the QIAxcel system were compared
with a
      Sanger-type sequencing machine, the ABI PRISM((R)) 3100

Genetic Analyzer.
      RESULTS: Significant differences were seen between the sequenced
      amplicons and the results from the QIAxcel instrument. Different runs,
      plates and cartridges yielded significantly different results.
      Additionally, allele size decreased with each run by 0.045, or 1 bp,
      every three plates. QIAxcel and ABI PRISM systems differed in giving
      different values than those obtained by ABI PRISM, and too many (i.e.
      inaccurate) alleles per locus were also seen with the automated
      instrument. CONCLUSIONS: While P. vivax diversity could generally be
      estimated using an automated capillary gel cartridge system, the data
      demonstrate that this system is not sufficiently precise for reliably
      identifying parasite strains via microsatellite analysis. This conclusion
      reached after systematic analysis was due both to inadequate precision
      and poor reproducibility in measuring PCR product size.
FAU - Manrique, Paulo
AU - Manrique P
AD - Malaria Laboratory, Institute of Tropical Medicine Alexander von
      Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru.
      paulonvnv@gmail.com.
FAU - Hoshi, Mari
AU - Hoshi M
AD - Malaria Laboratory, Institute of Tropical Medicine Alexander von
      Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru.
      mhoshi87@gmail.com.
FAU - Fasabi, Manuel
AU - Fasabi M
AD - Instituto Nacional de Salud, Lima, Peru. manuelma1@hotmail.com.
FAU - Nolasco, Oscar
AU - Nolasco O
AD - Malaria Laboratory, Institute of Tropical Medicine Alexander von
      Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru.
      oscarnol@hotmail.com.
FAU - Yori, Pablo
AU - Yori P
AD - Department of International Health, Johns Hopkins School of Public
      Health, Baltimore, MD, USA. pyori@jhsph.edu.
FAU - Calderon, Martiza
AU - Calderon M

AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, USA. maritza.calderon.s@upch.pe.
FAU - Gilman, Robert H
AU - Gilman RH
AD - Department of International Health, Johns Hopkins School of Public
      Health, Baltimore, MD, USA. gilmanbob@gmail.com.
FAU - Kosek, Margaret N
AU - Kosek MN
AD - Department of International Health, Johns Hopkins School of Public
      Health, Baltimore, MD, USA. mkosek@jhmi.edu.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Malaria Laboratory, Institute of Tropical Medicine Alexander von
      Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru.
      jvinetz@ucsd.edu.
AD - Division of Infectious Diseases, Department of Medicine, University of
      California San Diego, La Jolla, CA, USA. jvinetz@ucsd.edu.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Malaria Laboratory, Institute of Tropical Medicine Alexander von
      Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru.
      dionigamboa@yahoo.com.
AD - Departamento de Ciencias Celulares y Moleculares, Universidad Peruana
      Cayetano Heredia, Lima, Peru. dionigamboa@yahoo.com.
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
GR - D43TW007120/TW/FIC NIH HHS/United States
GR - K24AI068903/AI/NIAID NIH HHS/United States
GR - U19AI089681/AI/NIAID NIH HHS/United States
GR - R01AI067727/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - K24 AI068903/AI/NIAID NIH HHS/United States
GR - MR/K007467/1/MRC_/Medical Research Council/United Kingdom
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20150821
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (DNA, Protozoan)
SB - IM
MH - DNA, Protozoan/genetics
MH - Humans
MH - Malaria, Vivax/epidemiology/*parasitology

MH - Microsatellite Repeats/*genetics
MH - Molecular Epidemiology
MH - Molecular Typing/*methods
MH - Peru/epidemiology
MH - Plasmodium vivax/*genetics
MH - Reproducibility of Results
PMC - PMC4546211
EDAT- 2015/08/22 06:00
MHDA- 2016/05/12 06:00
CRDT- 2015/08/22 06:00
PHST- 2015/03/24 00:00 [received]
PHST- 2015/08/08 00:00 [accepted]
PHST- 2015/08/22 06:00 [entrez]
PHST- 2015/08/22 06:00 [pubmed]
PHST- 2016/05/12 06:00 [medline]
AID - 10.1186/s12936-015-0842-9 [doi]
AID - 10.1186/s12936-015-0842-9 [pii]
PST - epublish
SO - Malar J. 2015 Aug 21;14:326. doi: 10.1186/s12936-015-0842-9.

PMID- 26125189
OWN - NLM
STAT- MEDLINE
DCOM- 20160520
LR - 20210109
IS - 1935-2735 (Electronic)
IS - 1935-2727 (Linking)
VI - 9
IP - 6
DP - 2015
TI - Plasmodium vivax Diversity and Population Structure across Four
      Continents.
PG - e0003872
LID - 10.1371/journal.pntd.0003872 [doi]
AB - Plasmodium vivax is the geographically most widespread human malaria
      parasite. To analyze patterns of microsatellite diversity and population
      structure across countries of different transmission intensity,
      genotyping data from 11 microsatellite markers was either generated or
      compiled from 841 isolates from four continents collected in 1999-2008.
      Diversity was highest in South-East Asia (mean allelic richness
      10.0-12.8), intermediate in the South Pacific (8.1-9.9) Madagascar and
      Sudan (7.9-8.4), and lowest in South America and Central Asia (5.5-7.2).
      A reduced panel of only 3 markers was sufficient to identify approx. 90%
      of all haplotypes in South Pacific, African and SE-Asian

populations, but
      only 60-80% in Latin American populations, suggesting that typing of 2-6
      markers, depending on the level of endemicity, is sufficient for
      epidemiological studies. Clustering analysis showed distinct clusters in
      Peru and Brazil, but little sub-structuring was observed within Africa,
      SE-Asia or the South Pacific. Isolates from Uzbekistan were exceptional,
      as a near-clonal parasite population was observed that was clearly
      separated from all other populations (FST>0.2). Outside Central Asia FST
      values were highest (0.11-0.16) between South American and all other
      populations, and lowest (0.04-0.07) between populations from South-East
      Asia and the South Pacific. These comparisons between P. vivax
      populations from four continents indicated that not only transmission
      intensity, but also geographical isolation affect diversity and
      population structure. However, the high effective population size results
      in slow changes of these parameters. This persistency must be taken into
      account when assessing the impact of control programs on the genetic
      structure of parasite populations.
FAU - Koepfli, Cristian
AU - Koepfli C
AD - Swiss Tropical and Public Health Institute, Basel, Switzerland;
      University of Basel, Basel, Switzerland; Walter and Eliza Hall Institute,
      Parkville, Australia; Department of Medical Biology, University of
      Melbourne, Melbourne, Australia.
FAU - Rodrigues, Priscila T
AU - Rodrigues PT
AD - Department of Parasitology, Institute of Biomedical Sciences, University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Antao, Tiago
AU - Antao T
AD - Department of Vector Biology, Liverpool School of Tropical Medicine,
      Liverpool, United Kingdom.
FAU - Orjuela-Sanchez, Pamela
AU - Orjuela-Sanchez P
AD - Department of Parasitology, Institute of Biomedical Sciences, University

      of Sao Paulo, Sao Paulo, Brazil.
FAU - Van den Eede, Peter
AU - Van den Eede P
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander Von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - van Hong, Nguyen
AU - van Hong N
AD - National Institute of Malariology, Parasitology, and
Entomology, Hanoi,
      Vietnam.
FAU - Bendezu, Jorge
AU - Bendezu J
AD - Instituto de Medicina Tropical Alexander Von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Erhart, Annette
AU - Erhart A
AD - Department of Biomedical Sciences, Institute of Tropical
Medicine,
      Antwerp, Belgium.
FAU - Barnadas, Celine
AU - Barnadas C
AD - Walter and Eliza Hall Institute, Parkville, Australia;
Department of
      Medical Biology, University of Melbourne, Melbourne,
Australia.
FAU - Ratsimbasoa, Arsene
AU - Ratsimbasoa A
AD - Immunology Unit, Institut Pasteur de Madagascar, Antananarivo,
      Madagascar.
FAU - Menard, Didier
AU - Menard D
AD - Institut Pasteur de Cambodge, Malaria Molecular Epidemiology
Unit, Phnom
      Penh, Cambodia.
FAU - Severini, Carlo
AU - Severini C
AD - Department of Infectious, Parasitic and Immunomediated
Diseases, Istituto
      Superiore di Sanita, Rome, Italy.
FAU - Menegon, Michela
AU - Menegon M
AD - Department of Infectious, Parasitic and Immunomediated
Diseases, Istituto
      Superiore di Sanita, Rome, Italy.
FAU - Nour, Bakri Y M
AU - Nour BY
AD - Department of Parasitology, Blue Nile National Institute for

Communicable
      Diseases, University of Gezira, Wad Medani, Sudan.
FAU - Karunaweera, Nadira
AU - Karunaweera N
AD - Department of Parasitology, Faculty of Medicine, University of Colombo,
      Sri Lanka.
FAU - Mueller, Ivo
AU - Mueller I
AD - Walter and Eliza Hall Institute, Parkville, Australia; Department of
      Medical Biology, University of Melbourne, Melbourne, Australia; Barcelona
      Centre for International Health Research, Barcelona, Spain.
FAU - Ferreira, Marcelo U
AU - Ferreira MU
AD - Department of Parasitology, Institute of Biomedical Sciences, University
      of Sao Paulo, Sao Paulo, Brazil.
FAU - Felger, Ingrid
AU - Felger I
AD - Swiss Tropical and Public Health Institute, Basel, Switzerland;
      University of Basel, Basel, Switzerland.
LA - eng
GR - WT_/Wellcome Trust/United Kingdom
GR - U19 AI089686/AI/NIAID NIH HHS/United States
GR - WT100066MA/WT_/Wellcome Trust/United Kingdom
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20150630
PL - United States
TA - PLoS Negl Trop Dis
JT - PLoS neglected tropical diseases
JID - 101291488
SB - IM
MH - Africa/epidemiology
MH - Alleles
MH - Americas/epidemiology
MH - Asia/epidemiology
MH - Cluster Analysis
MH - Cohort Studies
MH - *Genetic Variation
MH - Genetics, Population
MH - Genotype
MH - Geography
MH - Haplotypes
MH - Humans
MH - Linkage Disequilibrium
MH - Madagascar/epidemiology
MH - Malaria, Vivax/epidemiology/*parasitology/transmission
MH - Microsatellite Repeats/*genetics
MH - Plasmodium vivax/*genetics/isolation & purification
PMC - PMC4488360

EDAT- 2015/07/01 06:00
MHDA- 2016/05/21 06:00
CRDT- 2015/07/01 06:00
PHST- 2014/09/24 00:00 [received]
PHST- 2015/06/02 00:00 [accepted]
PHST- 2015/07/01 06:00 [entrez]
PHST- 2015/07/01 06:00 [pubmed]
PHST- 2016/05/21 06:00 [medline]
AID - 10.1371/journal.pntd.0003872 [doi]
AID - PNTD-D-14-01665 [pii]
PST - epublish
SO - PLoS Negl Trop Dis. 2015 Jun 30;9(6):e0003872. doi:
10.1371/journal.pntd.0003872. eCollection 2015.

PMID- 25948081
OWN - NLM
STAT- MEDLINE
DCOM- 20160125
LR - 20181113
IS - 1756-3305 (Electronic)
IS - 1756-3305 (Linking)
VI - 8
DP - 2015 May 7
TI - Modelling the potential of focal screening and treatment as elimination
strategy for Plasmodium falciparum malaria in the Peruvian Amazon Region.
PG - 261
LID - 10.1186/s13071-015-0868-4 [doi]
AB - BACKGROUND: Focal screening and treatment (FSAT) of malaria infections
has recently been introduced in Peru to overcome the inherent limitations
of passive case detection (PCD) and further decrease the malaria burden.
Here, we used a relatively straightforward mathematical model to assess
the potential of FSAT as elimination strategy for Plasmodium falciparum
malaria in the Peruvian Amazon Region. METHODS: A baseline model was
developed to simulate a scenario with seasonal malaria transmission and
the effect of PCD and treatment of symptomatic infections on the P.
falciparum malaria transmission in a low endemic area of the Peruvian
Amazon. The model was then adjusted to simulate intervention scenarios
for predicting the long term additional impact of FSAT on P. falciparum
malaria prevalence and incidence. Model parameterization was done using
data from a cohort study in a rural Amazonian community as

well as
published transmission parameters from previous studies in similar areas.
The effect of FSAT timing and frequency, using either microscopy or a
supposed field PCR, was assessed on both predicted incidence and
prevalence rates. RESULTS: The intervention model indicated that the
addition of FSAT to PCD significantly reduced the predicted P. falciparum
incidence and prevalence. The strongest reduction was observed when three
consecutive FSAT were implemented at the beginning of the low
transmission season, and if malaria diagnosis was done with PCR. Repeated
interventions for consecutive years (10 years with microscopy or 5 years
with PCR), would allow reaching near to zero incidence and prevalence
rates. CONCLUSIONS: The addition of FSAT interventions to PCD may enable
to reach P. falciparum elimination levels in low endemic areas of the
Amazon Region, yet the progression rates to those levels may vary
substantially according to the operational criteria used for the
intervention.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima 31, Peru. angelrosasa@gmail.com.
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp, 2000, Belgium. angelrosasa@gmail.com.
AD - Research Institute of Health and Society (IRSS), Universite catholique de
Louvain, Brussels, 1200, Belgium. angelrosasa@gmail.com.
FAU - Erhart, Annette
AU - Erhart A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp, 2000, Belgium. aerhart@itg.be.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
Peruana Cayetano Heredia, Lima 31, Peru. elmer.llanos@upch.pe.
FAU - Branch, Oralee
AU - Branch O
AD - Department of Medical Parasitology, New York University, New

York, 10012,
USA. oralee.branch@nyumc.org.
FAU - Berkvens, Dirk
AU - Berkvens D
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp, 2000, Belgium. dberkvens@itg.be.
FAU - Abatih, Emmanuel
AU - Abatih E
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp, 2000, Belgium. enjiabatih@itg.be.
FAU - Lambert, Philippe
AU - Lambert P
AD - Research Institute of Health and Society (IRSS), Universite catholique de
Louvain, Brussels, 1200, Belgium. p.lambert@ulg.ac.be.
AD - Institut des sciences humaines et sociales, Universite de Liege, Liege,
4000, Belgium. p.lambert@ulg.ac.be.
FAU - Frasso, Gianluca
AU - Frasso G
AD - Institut des sciences humaines et sociales, Universite de Liege, Liege,
4000, Belgium. gianluca.frasso@ulg.ac.be.
FAU - Rodriguez, Hugo
AU - Rodriguez H
AD - Region de Salud Loreto, Iquitos, Loreto, 160, Peru.
hmrodriguezf@hotmail.com.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
Filosofia, Universidad Peruana Cayetano Heredia, Lima 31, Peru.
dionigamboa@yahoo.com.
FAU - Sihuincha, Moises
AU - Sihuincha M
AD - Facultad de Medicina, Universidad Nacional Amazonia Peruana, Iquitos,
Loreto, 160, Peru. sihuincha@hotmail.com.
FAU - Rosanas-Urgell, Anna
AU - Rosanas-Urgell A
AD - Department of Biomedical Sciences, Institute of Tropical Medicine,
Antwerp, 2000, Belgium. arosanas@itg.be.
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
AD - Disease Control and Elimination, Medical Research Council Unit, Fajara,
220, The Gambia. udalessandro@mrc.gm.
AD - London School of Hygiene & Tropical Medicine, London, WC1E 7HT, UK.
udalessandro@mrc.gm.

FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite catholique de
      Louvain, Brussels, 1200, Belgium. niko.speybroeck@uclouvain.be.
LA - eng
GR - R01 AI064831/AI/NIAID NIH HHS/United States
GR - R01 AI64831/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20150507
PL - England
TA - Parasit Vectors
JT - Parasites & vectors
JID - 101462774
RN - 0 (Antimalarials)
SB - IM
MH - Antimalarials/*therapeutic use
MH - Cohort Studies
MH - Female
MH - Humans
MH - Malaria, Falciparum/drug therapy/epidemiology/parasitology/*prevention &
      control
MH - Male
MH - Models, Theoretical
MH - Peru/epidemiology
MH - Plasmodium falciparum/drug effects/genetics/isolation & purification/physiology
MH - Rural Population
PMC - PMC4429469
EDAT- 2015/05/08 06:00
MHDA- 2016/01/26 06:00
CRDT- 2015/05/08 06:00
PHST- 2014/11/21 00:00 [received]
PHST- 2015/04/21 00:00 [accepted]
PHST- 2015/05/08 06:00 [entrez]
PHST- 2015/05/08 06:00 [pubmed]
PHST- 2016/01/26 06:00 [medline]
AID - 10.1186/s13071-015-0868-4 [doi]
AID - 10.1186/s13071-015-0868-4 [pii]
PST - epublish
SO - Parasit Vectors. 2015 May 7;8:261. doi: 10.1186/s13071-015-0868-4.

PMID- 25897626
OWN - NLM
STAT- MEDLINE
DCOM- 20160112
LR - 20181113
IS - 1080-6059 (Electronic)
IS - 1080-6040 (Linking)

VI - 21
IP - 5
DP - 2015 May
TI - Molecular Epidemiology of Plasmodium falciparum Malaria Outbreak, Tumbes,
      Peru, 2010-2012.
PG - 797-803
LID - 10.3201/eid2105.141427 [doi]
AB - During 2010-2012, an outbreak of 210 cases of malaria occurred in Tumbes,
      in the northern coast of Peru, where no Plasmodium falciparum malaria
      case had been reported since 2006. To identify the source of the parasite
      causing this outbreak, we conducted a molecular epidemiology
      investigation. Microsatellite typing showed an identical genotype in all
      54 available isolates. This genotype was also identical to that of
      parasites isolated in 2010 in the Loreto region of the Peruvian Amazon
      and closely related to clonet B, a parasite lineage previously reported
      in the Amazon during 1998-2000. These findings are consistent with travel
      history of index case-patients. DNA sequencing revealed mutations in the
      Pfdhfr, Pfdhps, Pfcrt, and Pfmdr1 loci, which are strongly associated
      with resistance to chloroquine and sulfadoxine/pyrimethamine, and
      deletion of the Pfhrp2 gene. These results highlight the need for timely
      molecular epidemiology investigations to trace the parasite source during
      malaria reintroduction events.
FAU - Baldeviano, G Christian
AU - Baldeviano GC
FAU - Okoth, Sheila Akinyi
AU - Okoth SA
FAU - Arrospide, Nancy
AU - Arrospide N
FAU - Gonzalez, Rommell V
AU - Gonzalez RV
FAU - Sanchez, Juan F
AU - Sanchez JF
FAU - Macedo, Silvia
AU - Macedo S
FAU - Conde, Silvia
AU - Conde S
FAU - Tapia, L Lorena
AU - Tapia LL
FAU - Salas, Carola
AU - Salas C

FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Herrera, Yeni
AU - Herrera Y
FAU - Edgel, Kimberly A
AU - Edgel KA
FAU - Udhayakumar, Venkatachalam
AU - Udhayakumar V
FAU - Lescano, Andres G
AU - Lescano AG
LA - eng
GR - D43 TW007393/TW/FIC NIH HHS/United States
GR - 2D43 TW007393/TW/FIC NIH HHS/United States
PT - Historical Article
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, U.S. Gov't, Non-P.H.S.
PL - United States
TA - Emerg Infect Dis
JT - Emerging infectious diseases
JID - 9508155
RN - 0 (Antimalarials)
RN - 0 (DNA, Protozoan)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Alleles
MH - Antimalarials/pharmacology
MH - DNA, Protozoan
MH - *Disease Outbreaks
MH - Drug Resistance
MH - Gene Deletion
MH - Genotype
MH - Geography
MH - Haplotypes
MH - History, 21st Century
MH - Humans
MH - Malaria, Falciparum/*epidemiology/history/*parasitology
MH - Microsatellite Repeats
MH - Molecular Epidemiology
MH - Peru/epidemiology
MH - Plasmodium falciparum/drug effects/*genetics
MH - Protozoan Proteins/genetics
PMC - PMC4412223
OTO - NOTNLM
OT - Falciparum malaria
OT - Peru
OT - Plasmodium
OT - malaria
OT - microsatellite markers
OT - parasites
EDAT- 2015/04/22 06:00
MHDA- 2016/01/13 06:00
CRDT- 2015/04/22 06:00
PHST- 2015/04/22 06:00 [entrez]

PHST- 2015/04/22 06:00 [pubmed]
PHST- 2016/01/13 06:00 [medline]
AID - 10.3201/eid2105.141427 [doi]
PST - ppublish
SO - Emerg Infect Dis. 2015 May;21(5):797-803. doi: 10.3201/
eid2105.141427.

PMID- 25903826
OWN - NLM
STAT- MEDLINE
DCOM- 20160128
LR - 20181113
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 14
DP - 2015 Apr 24
TI - Plasmodium vivax malaria at households: spatial clustering and
risk
      factors in a low endemicity urban area of the northwestern
Peruvian
      coast.
PG - 176
LID - 10.1186/s12936-015-0670-y [doi]
AB - BACKGROUND: Peru has presented a decreasing malaria trend
during the last
      decade, particularly in areas on northwestern coast; however,
a limited
      number of cases continues to be reported yearly mainly in
malaria
      hotspots. METHODS: A two-phase study was conducted to identify
spatial
      and temporal clusters of incident Plasmodium vivax malaria, as
well as to
      determine risk factors associated with households (HH)
presenting P.
      vivax malaria episodes in an urban area of the northwestern
Peruvian
      Coast from June 2008 to May 2010. In the first stage, a full
census of
      the study population was conducted, including geo-referencing
of reported
      P. vivax episodes. In the second stage, a population-based
case-control
      study allowed the identification of risk factors associated
with HHs
      reporting episodes. A total of 117 case HHs with reported P.
vivax and
      117 control HHs without malaria episodes were assessed. A
semi-structured
      questionnaire was used to interview the head of households and
to collect
      data on HH location and structure, availability of public
services,
      preventive malaria measures, family member with outdoor

occupation
      (farmer, moto-taxi driver), and other HH characteristics. Univariate and
      multivariate logistic regression analyses were performed to determine
      case-HH risk factors. SaTScan was used to detect spatial and temporal P.
      vivax malaria clusters. RESULTS: The most likely spatial cluster of
      malaria incidence included 1,040 people (22.4% of total population) in
      245 HHs (24.6% of total HHs) accounting for 283 malaria episodes (40.1%
      of total episodes) during the study period (RR = 2.3, p < 0.001). A
      temporal cluster was also identified from April 12, 2009 to July 4, 2009
      accounting for 355 malaria episodes (50.4% of total episodes) (RR = 7.2,
      p = 0.001). Factors significantly associated with case HHs compared with
      control HHs were: proximity to water drain < 200 metres (OR = 2.3, 95%
      CI: 1.3, 4.0); HH size >5 individuals (OR = 1.8, 95% CI: 1.0, 3.2); lack
      of potable water (OR = 1.8, 95% CI: 1.1, 3.2); and having domestic and
      peridomestic animals (OR = 3.6, 95% CI: 1.3, 9.5). CONCLUSION: Plasmodium
      vivax malaria incidence is highly heterogeneous in space and time in the
      urban study area with important geographical and housing risk factors
      associated with symptomatic episodes.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru. angelrosasa@gmail.com.
AD - Research Institute of Health and Society (IRSS), Universite catholique de
      Louvain, Brussels, 1200, Belgium. angelrosasa@gmail.com.
FAU - Ponce, Oscar J
AU - Ponce OJ
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru. oscarp28@gmail.com.
FAU - Carrasco-Escobar, Gabriel
AU - Carrasco-Escobar G
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru. gabriel.carrasco@upch.pe.
FAU - Speybroeck, Niko

AU - Speybroeck N
AD - Research Institute of Health and Society (IRSS), Universite catholique de
      Louvain, Brussels, 1200, Belgium. Niko.Speybroeck@uclouvain.be.
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru. cmjuanjo@hotmail.com.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru. dionigamboa@yahoo.com.
AD - Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y
      Filosofia, Universidad Peruana Cayetano Heredia, Lima, Peru.
      dionigamboa@yahoo.com.
FAU - Pozo, Edwar
AU - Pozo E
AD - Sub-region de Salud Luciano Castillo Colonna, Sullana, Peru.
      edjpozo@yahoo.es.
FAU - Herrera, Socrates
AU - Herrera S
AD - Caucaseco Scientific Research Center, Cali, Colombia.
      sherrera@inmuno.org.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru. elmer.llanos@upch.pe.
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
GR - U19AI089702/AI/NIAID NIH HHS/United States
GR - D43TW007120/TW/FIC NIH HHS/United States
GR - R01AI067727/AI/NIAID NIH HHS/United States
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089702/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20150424
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Case-Control Studies
MH - Incidence
MH - Malaria, Vivax/*epidemiology/parasitology
MH - Peru/epidemiology
MH - Plasmodium vivax/*physiology
MH - *Residence Characteristics
MH - Risk Factors

MH - Spatial Analysis
MH - Urban Population
PMC - PMC4416302
EDAT- 2015/04/24 06:00
MHDA- 2016/01/29 06:00
CRDT- 2015/04/24 06:00
PHST- 2014/12/26 00:00 [received]
PHST- 2015/03/24 00:00 [accepted]
PHST- 2015/04/24 06:00 [entrez]
PHST- 2015/04/24 06:00 [pubmed]
PHST- 2016/01/29 06:00 [medline]
AID - 10.1186/s12936-015-0670-y [doi]
AID - 10.1186/s12936-015-0670-y [pii]
PST - epublish
SO - Malar J. 2015 Apr 24;14:176. doi: 10.1186/s12936-015-0670-y.

PMID- 25381370
OWN - NLM
STAT- MEDLINE
DCOM- 20150522
LR - 20220321
IS - 1537-6613 (Electronic)
IS - 0022-1899 (Linking)
VI - 211
IP - 8
DP - 2015 Apr 15
TI - Genome-level determination of Plasmodium falciparum blood-stage targets
      of malarial clinical immunity in the Peruvian Amazon.
PG - 1342-51
LID - 10.1093/infdis/jiu614 [doi]
AB - BACKGROUND: Persons with blood-stage Plasmodium falciparum parasitemia in
      the absence of symptoms are considered to be clinically immune. We
      hypothesized that asymptomatic subjects with P. falciparum parasitemia
      would differentially recognize a subset of P. falciparum proteins on a
      genomic scale. METHODS AND FINDINGS: Compared with symptomatic subjects,
      sera from clinically immune, asymptomatically infected individuals
      differentially recognized 51 P. falciparum proteins, including the
      established vaccine candidate PfMSP1. Novel, hitherto unstudied
      hypothetical proteins and other proteins not previously recognized as
      potential vaccine candidates were also differentially recognized. Genes
      encoding the proteins differentially recognized by the Peruvian
      clinically immune individuals exhibited a significant

enrichment of
      nonsynonymous nucleotide variation, an observation consistent with these
      genes undergoing immune selection. CONCLUSIONS: A limited set of P.
      falciparum protein antigens was associated with the development of
      naturally acquired clinical immunity in the low-transmission setting of
      the Peruvian Amazon. These results imply that, even in a low-transmission
      setting, an asexual blood-stage vaccine designed to reduce clinical
      malaria symptoms will likely need to contain large numbers of often-
      polymorphic proteins, a finding at odds with many current efforts in the
      design of vaccines against asexual blood-stage P. falciparum.

FAU - Torres, Katherine J
AU - Torres KJ
AD - Laboratorio de Malaria, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia.
FAU - Castrillon, Carlos E
AU - Castrillon CE
AD - Laboratorio de Malaria, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia.
FAU - Moss, Eli L
AU - Moss EL
AD - Genome Sequencing and Analysis Program, Broad Institute of MIT and
      Harvard, Cambridge, Massachusetts.
FAU - Saito, Mayuko
AU - Saito M
AD - Laboratorio de Malaria, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia Division of Infectious Diseases,
      Department of Medicine, University of California-San Diego, La Jolla.
FAU - Tenorio, Roy
AU - Tenorio R
AD - Laboratorio de Malaria, Laboratorios de Investigacion y Desarrollo,
      Facultad de Ciencias y Filosofia Laboratorio Satelital, Universidad
      Peruana Cayetano Heredia, Iquitos, Peru
FAU - Molina, Douglas M

AU - Molina DM
AD - Antigen Discovery, Inc.
FAU - Davies, Huw
AU - Davies H
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California-Irvine.
FAU - Neafsey, Daniel E
AU - Neafsey DE
AD - Genome Sequencing and Analysis Program, Broad Institute of MIT
and
      Harvard, Cambridge, Massachusetts.
FAU - Felgner, Philip
AU - Felgner P
AD - Division of Infectious Diseases, Department of Medicine,
University of
      California-Irvine.
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia Institute de Medicina
Tropical,
      Universidad Peruana Cayetano Heredia, Lima Division of
Infectious
      Diseases, Department of Medicine, University of California-San
Diego, La
      Jolla.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Laboratorio de Malaria, Laboratorios de Investigacion y
Desarrollo,
      Facultad de Ciencias y Filosofia Institute de Medicina
Tropical,
      Universidad Peruana Cayetano Heredia, Lima.
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
GR - R43 AI075692/AI/NIAID NIH HHS/United States
GR - D43TW007120/TW/FIC NIH HHS/United States
GR - K24AI068903/AI/NIAID NIH HHS/United States
GR - R01AI05759206/AI/NIAID NIH HHS/United States
GR - U19AI089681/AI/NIAID NIH HHS/United States
GR - R01 AI095916/AI/NIAID NIH HHS/United States
GR - R01RHLO86488/PHS HHS/United States
GR - AI075692/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089686/AI/NIAID NIH HHS/United States
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - 1R01AI067727/AI/NIAID NIH HHS/United States
GR - K24 AI068903/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
DEP - 20141107
PL - United States

TA - J Infect Dis
JT - The Journal of infectious diseases
JID - 0413675
RN - 0 (Antibodies, Protozoan)
RN - 0 (Antigens, Protozoan)
RN - 0 (Malaria Vaccines)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Adolescent
MH - Adult
MH - Antibodies, Protozoan/immunology
MH - Antigens, Protozoan/genetics/immunology
MH - Child
MH - Female
MH - Humans
MH - Malaria Vaccines/immunology
MH - Malaria, Falciparum/*blood/*immunology
MH - Male
MH - Middle Aged
MH - Parasitemia/blood/immunology/parasitology
MH - Plasmodium falciparum/*genetics/*immunology
MH - Protozoan Proteins/*blood/genetics/immunology
MH - Young Adult
PMC - PMC4402338
OTO - NOTNLM
OT - geographic medicine
OT - immunology
OT - malaria
OT - systems biology
EDAT- 2014/11/09 06:00
MHDA- 2015/05/23 06:00
CRDT- 2014/11/09 06:00
PHST- 2014/11/09 06:00 [entrez]
PHST- 2014/11/09 06:00 [pubmed]
PHST- 2015/05/23 06:00 [medline]
AID - jiu614 [pii]
AID - 10.1093/infdis/jiu614 [doi]
PST - ppublish
SO - J Infect Dis. 2015 Apr 15;211(8):1342-51. doi: 10.1093/infdis/
jiu614.
      Epub 2014 Nov 7.

PMID- 24768682
OWN - NLM
STAT- MEDLINE
DCOM- 20150112
LR - 20140602
IS - 1567-7257 (Electronic)
IS - 1567-1348 (Linking)
VI - 25
DP - 2014 Jul
TI - Genetic diversity of VAR2CSA ID1-DBL2Xb in worldwide
Plasmodium
      falciparum populations: impact on vaccine design for placental

malaria.
PG - 81-92
LID - 10.1016/j.meegid.2014.04.010 [doi]
LID - S1567-1348(14)00132-4 [pii]
AB - In placental malaria (PM), sequestration of infected erythrocytes in the
      placenta is mediated by an interaction between VAR2CSA, a Plasmodium
      falciparum protein expressed on erythrocytes, and chondroitin sulfate A
      (CSA) on syncytiotrophoblasts. Recent works have identified ID1-DBL2Xb as
      the minimal CSA-binding region within VAR2CSA able to induce strong
      protective immunity, making it the leading candidate for the development
      of a vaccine against PM. Assessing the existence of population
      differences in the distribution of ID1-DBL2Xb polymorphisms is of
      paramount importance to determine whether geographic diversity must be
      considered when designing a candidate vaccine based on this fragment. In
      this study, we examined patterns of sequence variation of ID1-DBL2Xb in a
      large collection of P. falciparum field isolates (n=247) from different
      malaria-endemic areas, including Africa (Benin, Senegal, Cameroon and
      Madagascar), Asia (Cambodia), Oceania (Papua New Guinea), and Latin
      America (Peru). Detection of variants and estimation of their allele
      frequencies were performed using next-generation sequencing of DNA pools.
      A considerable amount of variation was detected along the whole gene
      segment, suggesting that several allelic variants may need to be included
      in a candidate vaccine to achieve broad population coverage. However,
      most sequence variants were common and extensively shared among worldwide
      parasite populations, demonstrating long term persistence of those
      polymorphisms, probably maintained through balancing selection.
      Therefore, a vaccine mixture including such stable antigen variants will
      be putatively applicable and efficacious in all world regions where
      malaria occurs. Despite similarity in ID1-DBL2Xb allele repertoire across
      geographic areas, several peaks of strong population

differentiation were
      observed at specific polymorphic loci, pointing out putative targets of
      humoral immunity subject to positive immune selection.

FAU - Bordbar, Bita
AU - Bordbar B
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris, France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere et enfant
      face aux infections tropicales, Paris, France.
FAU - Tuikue Ndam, Nicaise
AU - Tuikue Ndam N
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris, France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere et enfant
      face aux infections tropicales, Paris, France; Centre d'Etude et de
      Recherche sur le Paludisme Associe a la Grossesse et a l'Enfance
      (CERPAGE), Cotonou, Benin.
FAU - Renard, Emmanuelle
AU - Renard E
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris, France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere et enfant
      face aux infections tropicales, Paris, France.
FAU - Jafari-Guemouri, Sayeh
AU - Jafari-Guemouri S
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris, France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere et enfant
      face aux infections tropicales, Paris, France.
FAU - Tavul, Livingstone
AU - Tavul L
AD - Papua New Guinea Institute of Medical Research, Madang, Papua New Guinea.
FAU - Jennison, Charlie
AU - Jennison C
AD - Division of Infection and Immunity, The Walter and Eliza Hall Institute
      of Medical Research, Melbourne, Australia.
FAU - Gnidehou, Sedami
AU - Gnidehou S
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris, France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere et enfant
      face aux infections tropicales, Paris, France.
FAU - Tahar, Rachida

AU - Tahar R
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris,
France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere
et enfant
      face aux infections tropicales, Paris, France.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical "Alexander Von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Bendezu, Jorge
AU - Bendezu J
AD - Instituto de Medicina Tropical "Alexander Von Humboldt",
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Menard, Didier
AU - Menard D
AD - Unite d'Epidemiologie Moleculaire, Institut Pasteur du
Cambodge, Phnom
      Penh, Cambodia.
FAU - Barry, Alyssa E
AU - Barry AE
AD - Division of Infection and Immunity, The Walter and Eliza Hall
Institute
      of Medical Research, Melbourne, Australia.
FAU - Deloron, Philippe
AU - Deloron P
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris,
France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere
et enfant
      face aux infections tropicales, Paris, France.
FAU - Sabbagh, Audrey
AU - Sabbagh A
AD - PRES Sorbonne Paris Cite, Universite Paris Descartes, Paris,
France;
      Institut de Recherche Pour le Developpement (IRD), UMR216 Mere
et enfant
      face aux infections tropicales, Paris, France. Electronic
address:
      audrey.sabbagh@ird.fr.
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20140421
PL - Netherlands
TA - Infect Genet Evol
JT - Infection, genetics and evolution : journal of molecular
epidemiology and
      evolutionary genetics in infectious diseases
JID - 101084138
RN - 0 (Antigens, Protozoan)
RN - 0 (DNA, Protozoan)

RN - 0 (VAR2CSA protein, Plasmodium falciparum)
RN - 0 (Viral Vaccines)
SB - IM
MH - Adolescent
MH - Adult
MH - Antigenic Variation/immunology
MH - Antigens, Protozoan/*genetics/immunology
MH - DNA, Protozoan/genetics
MH - Female
MH - Gene Frequency
MH - Genetic Variation
MH - Humans
MH - Malaria, Falciparum/epidemiology/immunology/*parasitology
MH - Phylogeography
MH - Placenta/immunology/*parasitology
MH - Plasmodium falciparum/classification/immunology/*isolation &
      purification/*metabolism
MH - Pregnancy
MH - Pregnancy Complications, Parasitic/immunology/*parasitology
MH - Sequence Analysis, DNA
MH - Viral Vaccines/genetics/immunology
MH - Young Adult
OTO - NOTNLM
OT - Genetic structure
OT - Next-generation sequencing
OT - Plasmodium falciparum
OT - Pregnancy-associated malaria
OT - VAR2CSA
OT - Vaccine
EDAT- 2014/04/29 06:00
MHDA- 2015/01/13 06:00
CRDT- 2014/04/29 06:00
PHST- 2014/02/10 00:00 [received]
PHST- 2014/04/11 00:00 [revised]
PHST- 2014/04/12 00:00 [accepted]
PHST- 2014/04/29 06:00 [entrez]
PHST- 2014/04/29 06:00 [pubmed]
PHST- 2015/01/13 06:00 [medline]
AID - S1567-1348(14)00132-4 [pii]
AID - 10.1016/j.meegid.2014.04.010 [doi]
PST - ppublish
SO - Infect Genet Evol. 2014 Jul;25:81-92. doi: 10.1016/
j.meegid.2014.04.010.
      Epub 2014 Apr 21.

PMID- 24534811
OWN - NLM
STAT- MEDLINE
DCOM- 20140526
LR - 20211021
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 90
IP - 4

DP - 2014 Apr
TI - Infection of laboratory-colonized Anopheles darlingi mosquitoes by
      Plasmodium vivax.
PG - 612-616
LID - 10.4269/ajtmh.13-0708 [doi]
AB - Anopheles darlingi Root is the most important malaria vector in the
      Amazonia region of South America. However, continuous propagation of An.
      darlingi in the laboratory has been elusive, limiting entomological,
      genetic/genomic, and vector-pathogen interaction studies of this mosquito
      species. Here, we report the establishment of an An. darlingi colony
      derived from wild-caught mosquitoes obtained in the northeastern Peruvian
      Amazon region of Iquitos in the Loreto Department. We show that the
      numbers of eggs, larvae, pupae, and adults continue to rise at least to
      the F6 generation. Comparison of feeding Plasmodium vivax ex vivo of F4
      and F5 to F1 generation mosquitoes showed the comparable presence of
      oocysts and sporozoites, with numbers that corresponded to blood-stage
      asexual parasitemia and gametocytemia, confirming P. vivax vectorial
      capacity in the colonized mosquitoes. These results provide new avenues
      for research on An. darlingi biology and study of An. darlingi-Plasmodium
      interactions.
FAU - Moreno, Marta
AU - Moreno M
FAU - Tong, Carlos
AU - Tong C
FAU - Guzman, Mitchel
AU - Guzman M
FAU - Chuquiyauri, Raul
AU - Chuquiyauri R
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
FAU - Rodriguez, Hugo
AU - Rodriguez H
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Meister, Stephan
AU - Meister S
FAU - Winzeler, Elizabeth A
AU - Winzeler EA
FAU - Maguina, Paula

AU - Maguina P
FAU - Conn, Jan E
AU - Conn JE
FAU - Vinetz, Joseph M
AU - Vinetz JM
LA - eng
GR - D43 TW009343/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20140217
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
SB - IM
MH - Animals
MH - Anopheles/*parasitology
MH - Female
MH - Insect Vectors/*parasitology
MH - Laboratory Animal Science/methods
MH - Malaria, Vivax/*transmission
MH - Male
MH - Oocysts
MH - *Plasmodium vivax
MH - Sexual Behavior, Animal
MH - Sporozoites
PMC - PMC3973502
EDAT- 2014/02/19 06:00
MHDA- 2014/05/27 06:00
CRDT- 2014/02/19 06:00
PHST- 2014/02/19 06:00 [entrez]
PHST- 2014/02/19 06:00 [pubmed]
PHST- 2014/05/27 06:00 [medline]
AID - 10.4269/ajtmh.13-0708 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2014 Apr;90(4):612-616. doi: 10.4269/
ajtmh.13-0708.
      Epub 2014 Feb 17.

PMID- 24834503
OWN - NLM
STAT- MEDLINE
DCOM- 20140626
LR - 20191210
IS - 1365-294X (Electronic)
IS - 0962-1083 (Linking)
VI - 23
IP - 8
DP - 2014 Apr
TI - Patterns of selection on Plasmodium falciparum erythrocyte-
binding

antigens after the colonization of the New World.
PG - 1979-93
AB - Pathogens, which have recently colonized a new host species or new
populations of the same host, are interesting models for understanding
how populations may evolve in response to novel environments. During its
colonization of South America from Africa, Plasmodium falciparum, the
main agent of malaria, has been exposed to new conditions in distinctive
new human populations (Amerindian and populations of mixed origins) that
likely exerted new selective pressures on the parasite's genome. Among
the genes that might have experienced strong selective pressures in
response to these environmental changes, the eba genes (erythrocyte-
binding antigens genes), which are involved in the invasion of the human
red blood cells, constitute good candidates. In this study, we analysed,
in South America, the polymorphism of three eba genes (eba-140, eba-175,
eba-181) and compared it to the polymorphism observed in African
populations. The aim was to determine whether these genes faced selective
pressures in South America distinct from what they experienced in Africa.
Patterns of genetic variability of these genes were compared to the
patterns observed at two housekeeping genes (adsl and serca) and 272 SNPs
to separate adaptive effects from demographic effects. We show that,
conversely to Africa, eba-140 seemed to be under stronger diversifying
selection in South America than eba-175. In contrast, eba-181 did not
show any sign of departure from neutrality. These changes in the patterns
of selection on the eba genes could be the consequence of changes in the
host immune response, the host receptor polymorphisms and/or the ability
of the parasite to silence or express differentially its invasion
proteins.

FAU - Yalcindag, Erhan
AU - Yalcindag E

FAU - Rougeron, Virginie
AU - Rougeron V
FAU - Elguero, Eric
AU - Elguero E
FAU - Arnathau, Celine
AU - Arnathau C
FAU - Durand, Patrick
AU - Durand P
FAU - Brisse, Sylvain
AU - Brisse S
FAU - Diancourt, Laure
AU - Diancourt L
FAU - Aubouy, Agnes
AU - Aubouy A
FAU - Becquart, Pierre
AU - Becquart P
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
FAU - Fontenille, Didier
AU - Fontenille D
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Maestre, Amanda
AU - Maestre A
FAU - Menard, Didier
AU - Menard D
FAU - Musset, Lise
AU - Musset L
FAU - Noya, Oscar
AU - Noya O
FAU - Veron, Vincent
AU - Veron V
FAU - Wide, Albina
AU - Wide A
FAU - Carme, Bernard
AU - Carme B
FAU - Legrand, Eric
AU - Legrand E
FAU - Chevillon, Christine
AU - Chevillon C
FAU - Ayala, Francisco J
AU - Ayala FJ
FAU - Renaud, Francois
AU - Renaud F
FAU - Prugnolle, Franck
AU - Prugnolle F
LA - eng
SI - GENBANK/KJ419351
SI - GENBANK/KJ419352
SI - GENBANK/KJ419353
SI - GENBANK/KJ419354
SI - GENBANK/KJ419355
SI - GENBANK/KJ419356
SI - GENBANK/KJ419357

SI – GENBANK/KJ419358
SI – GENBANK/KJ419359
SI – GENBANK/KJ419360
SI – GENBANK/KJ419361
SI – GENBANK/KJ419362
SI – GENBANK/KJ419363
SI – GENBANK/KJ419364
SI – GENBANK/KJ419365
SI – GENBANK/KJ419366
SI – GENBANK/KJ419367
SI – GENBANK/KJ419368
SI – GENBANK/KJ419369
SI – GENBANK/KJ419370
SI – GENBANK/KJ419371
SI – GENBANK/KJ419372
SI – GENBANK/KJ419373
SI – GENBANK/KJ419374
SI – GENBANK/KJ419375
SI – GENBANK/KJ419376
SI – GENBANK/KJ419377
SI – GENBANK/KJ419378
SI – GENBANK/KJ419379
SI – GENBANK/KJ419380
SI – GENBANK/KJ419381
SI – GENBANK/KJ419382
SI – GENBANK/KJ419383
SI – GENBANK/KJ419384
SI – GENBANK/KJ419385
SI – GENBANK/KJ419386
SI – GENBANK/KJ419387
SI – GENBANK/KJ419388
SI – GENBANK/KJ419389
SI – GENBANK/KJ419390
SI – GENBANK/KJ419391
SI – GENBANK/KJ419392
SI – GENBANK/KJ419393
SI – GENBANK/KJ419394
SI – GENBANK/KJ419395
SI – GENBANK/KJ419396
SI – GENBANK/KJ419397
SI – GENBANK/KJ419398
SI – GENBANK/KJ419399
SI – GENBANK/KJ419400
SI – GENBANK/KJ419401
SI – GENBANK/KJ419402
SI – GENBANK/KJ419403
SI – GENBANK/KJ419404
SI – GENBANK/KJ419405
SI – GENBANK/KJ419406
SI – GENBANK/KJ419407
SI – GENBANK/KJ419408
SI – GENBANK/KJ419409
SI – GENBANK/KJ419410
SI – GENBANK/KJ419411

SI – GENBANK/KJ419412
SI – GENBANK/KJ419413
SI – GENBANK/KJ419414
SI – GENBANK/KJ419415
SI – GENBANK/KJ419416
SI – GENBANK/KJ419417
SI – GENBANK/KJ419418
SI – GENBANK/KJ419419
SI – GENBANK/KJ419420
SI – GENBANK/KJ419421
SI – GENBANK/KJ419422
SI – GENBANK/KJ419423
SI – GENBANK/KJ419424
SI – GENBANK/KJ419425
SI – GENBANK/KJ419426
SI – GENBANK/KJ419427
SI – GENBANK/KJ419428
SI – GENBANK/KJ419429
SI – GENBANK/KJ419430
SI – GENBANK/KJ419431
SI – GENBANK/KJ419432
SI – GENBANK/KJ419433
SI – GENBANK/KJ419434
SI – GENBANK/KJ419435
SI – GENBANK/KJ419436
SI – GENBANK/KJ419437
SI – GENBANK/KJ419438
SI – GENBANK/KJ419439
SI – GENBANK/KJ419440
SI – GENBANK/KJ419441
SI – GENBANK/KJ419442
SI – GENBANK/KJ419443
SI – GENBANK/KJ419444
SI – GENBANK/KJ419445
SI – GENBANK/KJ419446
SI – GENBANK/KJ419447
SI – GENBANK/KJ419448
SI – GENBANK/KJ419449
SI – GENBANK/KJ419450
SI – GENBANK/KJ419451
SI – GENBANK/KJ419452
SI – GENBANK/KJ419453
SI – GENBANK/KJ419454
SI – GENBANK/KJ419455
SI – GENBANK/KJ419456
SI – GENBANK/KJ419457
SI – GENBANK/KJ419458
SI – GENBANK/KJ419459
SI – GENBANK/KJ419460
SI – GENBANK/KJ419461
SI – GENBANK/KJ419462
SI – GENBANK/KJ419463
SI – GENBANK/KJ419464
SI – GENBANK/KJ419465

SI – GENBANK/KJ419466
SI – GENBANK/KJ419467
SI – GENBANK/KJ419468
SI – GENBANK/KJ419469
SI – GENBANK/KJ419470
SI – GENBANK/KJ419471
SI – GENBANK/KJ419472
SI – GENBANK/KJ419473
SI – GENBANK/KJ419474
SI – GENBANK/KJ419475
SI – GENBANK/KJ419476
SI – GENBANK/KJ419477
SI – GENBANK/KJ419478
SI – GENBANK/KJ419479
SI – GENBANK/KJ419480
SI – GENBANK/KJ419481
SI – GENBANK/KJ419482
SI – GENBANK/KJ419483
SI – GENBANK/KJ419484
SI – GENBANK/KJ419485
SI – GENBANK/KJ419486
SI – GENBANK/KJ419487
SI – GENBANK/KJ419488
SI – GENBANK/KJ419489
SI – GENBANK/KJ419490
SI – GENBANK/KJ419491
SI – GENBANK/KJ419492
SI – GENBANK/KJ419493
SI – GENBANK/KJ419494
SI – GENBANK/KJ419495
SI – GENBANK/KJ419496
SI – GENBANK/KJ419497
SI – GENBANK/KJ419498
SI – GENBANK/KJ419499
SI – GENBANK/KJ419500
SI – GENBANK/KJ419501
SI – GENBANK/KJ419502
SI – GENBANK/KJ419503
SI – GENBANK/KJ419504
SI – GENBANK/KJ419505
SI – GENBANK/KJ419506
SI – GENBANK/KJ419507
SI – GENBANK/KJ419508
SI – GENBANK/KJ419509
SI – GENBANK/KJ419510
SI – GENBANK/KJ419511
SI – GENBANK/KJ419512
SI – GENBANK/KJ419513
SI – GENBANK/KJ419514
SI – GENBANK/KJ419515
SI – GENBANK/KJ419516
SI – GENBANK/KJ419517
SI – GENBANK/KJ419518
SI – GENBANK/KJ419519

SI – GENBANK/KJ419520
SI – GENBANK/KJ419521
SI – GENBANK/KJ419522
SI – GENBANK/KJ419523
SI – GENBANK/KJ419524
SI – GENBANK/KJ419525
SI – GENBANK/KJ419526
SI – GENBANK/KJ419527
SI – GENBANK/KJ419528
SI – GENBANK/KJ419529
SI – GENBANK/KJ419530
SI – GENBANK/KJ419531
SI – GENBANK/KJ419532
SI – GENBANK/KJ419533
SI – GENBANK/KJ419534
SI – GENBANK/KJ419535
SI – GENBANK/KJ419536
SI – GENBANK/KJ419537
SI – GENBANK/KJ419538
SI – GENBANK/KJ419539
SI – GENBANK/KJ419540
SI – GENBANK/KJ419541
SI – GENBANK/KJ419542
SI – GENBANK/KJ419543
SI – GENBANK/KJ419544
SI – GENBANK/KJ419545
SI – GENBANK/KJ419546
SI – GENBANK/KJ419547
SI – GENBANK/KJ419548
SI – GENBANK/KJ419549
SI – GENBANK/KJ419550
SI – GENBANK/KJ419551
SI – GENBANK/KJ419552
SI – GENBANK/KJ419553
SI – GENBANK/KJ419554
SI – GENBANK/KJ419555
SI – GENBANK/KJ419556
SI – GENBANK/KJ419557
SI – GENBANK/KJ419558
SI – GENBANK/KJ419559
SI – GENBANK/KJ419560
SI – GENBANK/KJ419561
SI – GENBANK/KJ419562
SI – GENBANK/KJ419563
SI – GENBANK/KJ419564
SI – GENBANK/KJ419565
SI – GENBANK/KJ419566
SI – GENBANK/KJ419567
SI – GENBANK/KJ419568
SI – GENBANK/KJ419569
SI – GENBANK/KJ419570
SI – GENBANK/KJ419571
SI – GENBANK/KJ419572
SI – GENBANK/KJ419573

SI - GENBANK/KJ419574
SI - GENBANK/KJ419575
SI - GENBANK/KJ419576
SI - GENBANK/KJ419577
SI - GENBANK/KJ419578
SI - GENBANK/KJ419579
SI - GENBANK/KJ419580
SI - GENBANK/KJ419581
SI - GENBANK/KJ419582
SI - GENBANK/KJ419583
SI - GENBANK/KJ419584
SI - GENBANK/KJ419585
SI - GENBANK/KJ419586
SI - GENBANK/KJ419587
SI - GENBANK/KJ419588
SI - GENBANK/KJ419589
SI - GENBANK/KJ419590
SI - GENBANK/KJ419591
SI - GENBANK/KJ419592
SI - GENBANK/KJ419593
SI - GENBANK/KJ419594
SI - GENBANK/KJ419595
SI - GENBANK/KJ419596
SI - GENBANK/KJ419597
SI - GENBANK/KJ419598
SI - GENBANK/KJ419599
SI - GENBANK/KJ419600
SI - GENBANK/KJ419601
SI - GENBANK/KJ419602
SI - GENBANK/KJ419603
SI - GENBANK/KJ419604
SI - GENBANK/KJ419605
SI - GENBANK/KJ419606
SI - GENBANK/KJ419607
SI - GENBANK/KJ419608
SI - GENBANK/KJ419609
SI - GENBANK/KJ419610
SI - GENBANK/KJ419611
SI - GENBANK/KJ419612
SI - GENBANK/KJ419613
SI - GENBANK/KJ419614
SI - GENBANK/KJ419615
SI - GENBANK/KJ419616
SI - GENBANK/KJ419617
SI - GENBANK/KJ419618
SI - GENBANK/KJ419619
SI - GENBANK/KJ419620
SI - GENBANK/KJ419621
SI - GENBANK/KJ419622
SI - GENBANK/KJ419623
SI - GENBANK/KJ419624
SI - GENBANK/KJ419625
SI - GENBANK/KJ419626
SI - GENBANK/KJ419627

SI - GENBANK/KJ419628
SI - GENBANK/KJ419629
SI - GENBANK/KJ419630
SI - GENBANK/KJ419631
SI - GENBANK/KJ419632
SI - GENBANK/KJ419633
SI - GENBANK/KJ419634
SI - GENBANK/KJ419635
SI - GENBANK/KJ419636
SI - GENBANK/KJ419637
SI - GENBANK/KJ419638
SI - GENBANK/KJ419639
SI - GENBANK/KJ419640
SI - GENBANK/KJ419641
SI - GENBANK/KJ419642
SI - GENBANK/KJ419643
SI - GENBANK/KJ419644
SI - GENBANK/KJ419645
SI - GENBANK/KJ419646
SI - GENBANK/KJ419647
SI - GENBANK/KJ419648
SI - GENBANK/KJ419649
SI - GENBANK/KJ419650
SI - GENBANK/KJ419651
SI - GENBANK/KJ419652
SI - GENBANK/KJ419653
SI - GENBANK/KJ419654
SI - GENBANK/KJ419655
SI - GENBANK/KJ419656
SI - GENBANK/KJ419657
SI - GENBANK/KJ419658
SI - GENBANK/KJ419659
SI - GENBANK/KJ419660
SI - GENBANK/KJ419661
SI - GENBANK/KJ419662
SI - GENBANK/KJ419663
SI - GENBANK/KJ419664
SI - GENBANK/KJ419665
SI - GENBANK/KJ419666
SI - GENBANK/KJ419667
SI - GENBANK/KJ419668
SI - GENBANK/KJ419669
SI - GENBANK/KJ419670
SI - GENBANK/KJ419671
SI - GENBANK/KJ419672
SI - GENBANK/KJ419673
SI - GENBANK/KJ419674
SI - GENBANK/KJ419675
SI - GENBANK/KJ419676
SI - GENBANK/KJ419677
SI - GENBANK/KJ419678
SI - GENBANK/KJ419679
SI - GENBANK/KJ419680
SI - GENBANK/KJ419681

SI - GENBANK/KJ419682
SI - GENBANK/KJ419683
SI - GENBANK/KJ419684
SI - GENBANK/KJ419685
SI - GENBANK/KJ419686
SI - GENBANK/KJ419687
SI - GENBANK/KJ419688
SI - GENBANK/KJ419689
SI - GENBANK/KJ419690
SI - GENBANK/KJ419691
SI - GENBANK/KJ419692
SI - GENBANK/KJ419693
SI - GENBANK/KJ419694
SI - GENBANK/KJ419695
SI - GENBANK/KJ419696
SI - GENBANK/KJ419697
SI - GENBANK/KJ419698
SI - GENBANK/KJ419699
SI - GENBANK/KJ419700
SI - GENBANK/KJ419701
SI - GENBANK/KJ419702
SI - GENBANK/KJ419703
SI - GENBANK/KJ419704
SI - GENBANK/KJ419705
SI - GENBANK/KJ419706
SI - GENBANK/KJ419707
SI - GENBANK/KJ419708
SI - GENBANK/KJ419709
SI - GENBANK/KJ419710
SI - GENBANK/KJ419711
SI - GENBANK/KJ419712
SI - GENBANK/KJ419713
SI - GENBANK/KJ419714
SI - GENBANK/KJ419715
SI - GENBANK/KJ419716
SI - GENBANK/KJ419717
SI - GENBANK/KJ419718
SI - GENBANK/KJ419719
SI - GENBANK/KJ419720
SI - GENBANK/KJ419721
SI - GENBANK/KJ419722
SI - GENBANK/KJ419723
SI - GENBANK/KJ419724
SI - GENBANK/KJ419725
SI - GENBANK/KJ419726
SI - GENBANK/KJ419727
SI - GENBANK/KJ419728
SI - GENBANK/KJ419729
SI - GENBANK/KJ419730
SI - GENBANK/KJ419731
SI - GENBANK/KJ419732
SI - GENBANK/KJ419733
SI - GENBANK/KJ419734
SI - GENBANK/KJ419735

SI – GENBANK/KJ419736
SI – GENBANK/KJ419737
SI – GENBANK/KJ419738
SI – GENBANK/KJ419739
SI – GENBANK/KJ419740
SI – GENBANK/KJ419741
SI – GENBANK/KJ419742
SI – GENBANK/KJ419743
SI – GENBANK/KJ419744
SI – GENBANK/KJ419745
SI – GENBANK/KJ419746
SI – GENBANK/KJ419747
SI – GENBANK/KJ419748
SI – GENBANK/KJ419749
SI – GENBANK/KJ419750
SI – GENBANK/KJ419751
SI – GENBANK/KJ419752
SI – GENBANK/KJ419753
SI – GENBANK/KJ419754
SI – GENBANK/KJ419755
SI – GENBANK/KJ419756
SI – GENBANK/KJ419757
SI – GENBANK/KJ419758
SI – GENBANK/KJ419759
SI – GENBANK/KJ419760
SI – GENBANK/KJ419761
SI – GENBANK/KJ419762
SI – GENBANK/KJ419763
SI – GENBANK/KJ419764
SI – GENBANK/KJ419765
SI – GENBANK/KJ419766
SI – GENBANK/KJ419767
SI – GENBANK/KJ419768
SI – GENBANK/KJ419769
SI – GENBANK/KJ419770
SI – GENBANK/KJ419771
SI – GENBANK/KJ419772
SI – GENBANK/KJ419773
SI – GENBANK/KJ419774
SI – GENBANK/KJ419775
SI – GENBANK/KJ419776
SI – GENBANK/KJ419777
SI – GENBANK/KJ419778
SI – GENBANK/KJ419779
SI – GENBANK/KJ419780
SI – GENBANK/KJ419781
SI – GENBANK/KJ419782
SI – GENBANK/KJ419783
SI – GENBANK/KJ419784
SI – GENBANK/KJ419785
SI – GENBANK/KJ419786
SI – GENBANK/KJ419787
SI – GENBANK/KJ419788
SI – GENBANK/KJ419789

SI - GENBANK/KJ419790
SI - GENBANK/KJ419791
SI - GENBANK/KJ419792
SI - GENBANK/KJ419793
SI - GENBANK/KJ419794
SI - GENBANK/KJ419795
SI - GENBANK/KJ419796
SI - GENBANK/KJ419797
SI - GENBANK/KJ419798
SI - GENBANK/KJ419799
SI - GENBANK/KJ419800
SI - GENBANK/KJ419801
SI - GENBANK/KJ419802
SI - GENBANK/KJ419803
SI - GENBANK/KJ419804
SI - GENBANK/KJ419805
SI - GENBANK/KJ419806
SI - GENBANK/KJ419807
SI - GENBANK/KJ419808
SI - GENBANK/KJ419809
SI - GENBANK/KJ419810
SI - GENBANK/KJ419811
SI - GENBANK/KJ419812
SI - GENBANK/KJ419813
SI - GENBANK/KJ419814
SI - GENBANK/KJ419815
SI - GENBANK/KJ419816
SI - GENBANK/KJ419817
SI - GENBANK/KJ419818
SI - GENBANK/KJ419819
SI - GENBANK/KJ419820
SI - GENBANK/KJ419821
SI - GENBANK/KJ419822
SI - GENBANK/KJ419823
SI - GENBANK/KJ419824
SI - GENBANK/KJ419825
SI - GENBANK/KJ419826
SI - GENBANK/KJ419827
SI - GENBANK/KJ419828
SI - GENBANK/KJ419829
SI - GENBANK/KJ419830
SI - GENBANK/KJ419831
SI - GENBANK/KJ419832
SI - GENBANK/KJ419833
SI - GENBANK/KJ419834
SI - GENBANK/KJ419835
SI - GENBANK/KJ419836
SI - GENBANK/KJ419837
SI - GENBANK/KJ419838
SI - GENBANK/KJ419839
SI - GENBANK/KJ419840
SI - GENBANK/KJ419841
SI - GENBANK/KJ419842
SI - GENBANK/KJ419843

SI - GENBANK/KJ419844
SI - GENBANK/KJ419845
SI - GENBANK/KJ419846
SI - GENBANK/KJ419847
SI - GENBANK/KJ419848
SI - GENBANK/KJ419849
SI - GENBANK/KJ419850
SI - GENBANK/KJ419851
SI - GENBANK/KJ419852
SI - GENBANK/KJ419853
SI - GENBANK/KJ419854
SI - GENBANK/KJ419855
SI - GENBANK/KJ419856
SI - GENBANK/KJ419857
SI - GENBANK/KJ419858
SI - GENBANK/KJ419859
SI - GENBANK/KJ419860
SI - GENBANK/KJ419861
SI - GENBANK/KJ419862
SI - GENBANK/KJ419863
SI - GENBANK/KJ419864
SI - GENBANK/KJ419865
SI - GENBANK/KJ419866
SI - GENBANK/KJ419867
SI - GENBANK/KJ419868
SI - GENBANK/KJ419869
SI - GENBANK/KJ419870
SI - GENBANK/KJ419871
SI - GENBANK/KJ419872
SI - GENBANK/KJ419873
SI - GENBANK/KJ419874
SI - GENBANK/KJ419875
SI - GENBANK/KJ419876
SI - GENBANK/KJ419877
SI - GENBANK/KJ419878
SI - GENBANK/KJ419879
SI - GENBANK/KJ419880
SI - GENBANK/KJ419881
SI - GENBANK/KJ419882
SI - GENBANK/KJ419883
SI - GENBANK/KJ419884
SI - GENBANK/KJ419885
SI - GENBANK/KJ419886
SI - GENBANK/KJ419887
SI - GENBANK/KJ419888
SI - GENBANK/KJ419889
SI - GENBANK/KJ419890
SI - GENBANK/KJ419891
SI - GENBANK/KJ419892
SI - GENBANK/KJ419893
SI - GENBANK/KJ419894
SI - GENBANK/KJ419895
SI - GENBANK/KJ419896
SI - GENBANK/KJ419897

SI - GENBANK/KJ419898
SI - GENBANK/KJ419899
SI - GENBANK/KJ419900
SI - GENBANK/KJ419901
SI - GENBANK/KJ419902
SI - GENBANK/KJ419903
SI - GENBANK/KJ419904
SI - GENBANK/KJ419905
SI - GENBANK/KJ419906
SI - GENBANK/KJ419907
SI - GENBANK/KJ419908
SI - GENBANK/KJ419909
SI - GENBANK/KJ419910
SI - GENBANK/KJ419911
SI - GENBANK/KJ419912
SI - GENBANK/KJ419913
SI - GENBANK/KJ419914
SI - GENBANK/KJ419915
GR - R01 AI067727/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PL - England
TA - Mol Ecol
JT - Molecular ecology
JID - 9214478
RN - 0 (Antigens, Protozoan)
RN - 0 (Carrier Proteins)
RN - 0 (DNA, Protozoan)
RN - 0 (EBA-181 protein, Plasmodium falciparum)
RN - 0 (EBA140 protein, Plasmodium falciparum)
RN - 0 (Membrane Proteins)
RN - 0 (Protozoan Proteins)
RN - 0 (erythrocyte-binding antigen 175, Plasmodium)
SB - IM
MH - Africa
MH - Antigens, Protozoan/*genetics
MH - Carrier Proteins/genetics
MH - DNA, Protozoan/genetics
MH - Erythrocytes/parasitology
MH - Genetics, Population
MH - Humans
MH - Malaria, Falciparum/*parasitology
MH - Membrane Proteins
MH - Molecular Sequence Data
MH - Plasmodium falciparum/*genetics
MH - *Polymorphism, Genetic
MH - Protozoan Proteins/*genetics
MH - *Selection, Genetic
MH - Sequence Analysis, DNA
MH - South America
EDAT- 2014/05/17 06:00
MHDA- 2014/06/27 06:00
CRDT- 2014/05/17 06:00

PHST- 2014/05/17 06:00 [entrez]
PHST- 2014/05/17 06:00 [pubmed]
PHST- 2014/06/27 06:00 [medline]
AID - 10.1111/mec.12696 [doi]
PST - ppublish
SO - Mol Ecol. 2014 Apr;23(8):1979-93. doi: 10.1111/mec.12696.

PMID- 24642188
OWN - NLM
STAT- MEDLINE
DCOM- 20140915
LR - 20211021
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 13
DP - 2014 Mar 19
TI - Relationship of regulatory T cells to Plasmodium falciparum malaria
symptomatology in a hypoendemic region.
PG - 108
LID - 10.1186/1475-2875-13-108 [doi]
AB - BACKGROUND: Previous data have suggested that regulatory T cells (Tregs)
balance protective immune responses with immune mediated pathology in
malaria. This study aimed to determine to test the hypothesis that Treg
proportions or absolute levels are associated with parasitaemia and
malaria symptoms. METHODS: Treg cells were quantified by flow cytometry
as CD4+ CD25+, Foxp3+, CD127(low) T cells. Three patient groups were
assessed: patients with symptomatic Plasmodium falciparum malaria (S),
subjects with asymptomatic P. falciparum parasitaemia (AS) and uninfected
control individuals (C). RESULTS: S, AS and C groups had similar absolute
numbers and percentage of Tregs (3.9%, 3.5% and 3.5% respectively).
Levels of parasitaemia were not associated with Treg percentage (p =
0.47). CONCLUSION: Neither relative nor absolute regulatory T cell
numbers were found to be associated with malaria-related symptomatology
in this study. Immune mechanisms other than Tregs are likely to be
responsible for the state of asymptomatic P. falciparum parasitaemia in
the Peruvian Amazon; but further study to explore these mechanisms is
needed.

FAU - Torres, Katherine J
AU - Torres KJ
FAU - Villasis, Elizabeth
AU - Villasis E
FAU - Bendezu, Jorge
AU - Bendezu J
FAU - Chauca, Jose
AU - Chauca J
FAU - Vinetz, Joseph M
AU - Vinetz JM
AD - Instituto de Medicina Tropical "Alexander Von Humboldt", Universidad
      Peruana, Cayetano Heredia, AP 4314, Lima 100, Peru. jvinetz@ac.ucsd.edu.
FAU - Gamboa, Dionicia
AU - Gamboa D
LA - eng
GR - 1K24AI068903/AI/NIAID NIH HHS/United States
GR - 1D43TW007120/TW/FIC NIH HHS/United States
GR - R01AI067727/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - 1U19AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20140319
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
SB - IM
MH - Adolescent
MH - Adult
MH - Asymptomatic Diseases
MH - Child
MH - Female
MH - Flow Cytometry
MH - Humans
MH - Malaria, Falciparum/*immunology/parasitology
MH - Male
MH - Middle Aged
MH - Parasitemia/*immunology/parasitology
MH - Peru
MH - Plasmodium falciparum/*immunology
MH - T-Lymphocytes, Regulatory/*immunology
MH - Young Adult
PMC - PMC3976150
EDAT- 2014/03/20 06:00
MHDA- 2014/09/16 06:00
CRDT- 2014/03/20 06:00
PHST- 2013/09/16 00:00 [received]
PHST- 2014/03/14 00:00 [accepted]
PHST- 2014/03/20 06:00 [entrez]
PHST- 2014/03/20 06:00 [pubmed]

PHST- 2014/09/16 06:00 [medline]
AID - 1475-2875-13-108 [pii]
AID - 10.1186/1475-2875-13-108 [doi]
PST - epublish
SO - Malar J. 2014 Mar 19;13:108. doi: 10.1186/1475-2875-13-108.

PMID- 24393454
OWN - NLM
STAT- MEDLINE
DCOM- 20140915
LR - 20211021
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 13
DP - 2014 Jan 6
TI - Population structure and spatio-temporal transmission dynamics of
Plasmodium vivax after radical cure treatment in a rural village of the
Peruvian Amazon.
PG - 8
LID - 10.1186/1475-2875-13-8 [doi]
AB - BACKGROUND: Despite the large burden of Plasmodium vivax, little is known
about its transmission dynamics. This study explored the population
structure and spatio-temporal dynamics of P. vivax recurrent infections
after radical cure in a two-year cohort study carried out in a rural
community of the Peruvian Amazon. METHODS: A total of 37 P. vivax
participants recruited in San Carlos community (Peru) between April and
December 2008 were treated radically with chloroquine and primaquine and
followed up monthly for two years with systematic blood sampling. All
samples were screened for malaria parasites and subsequently all P. vivax
infections genotyped using 15 microsatellites. Parasite population
structure and dynamics were determined by computing different genetic
indices and using spatio-temporal statistics. RESULTS: After radical
cure, 76% of the study participants experienced one or more recurrent P.
vivax infections, most of them sub-patent and asymptomatic. The parasite
population displayed limited genetic diversity (He = 0.49) and clonal
structure, with most infections (84%) being monoclonal. Spatio-temporal

clusters of specific haplotypes were found throughout the study and
persistence of highly frequent haplotypes were observed over several
months within the same participants/households. CONCLUSIONS: In San
Carlos community, P. vivax recurrences were commonly observed after
radical treatment, and characterized by asymptomatic, sub-patent and
clustered infections (within and between individuals from a few
neighbouring households). Moreover low genetic diversity as well as
parasite inbreeding are likely to define a clonal parasite population
which has important implications on the malaria epidemiology of the study
area.
FAU - Delgado-Ratto, Christopher
AU - Delgado-Ratto C
AD - Unit of International Health, ESOC Department, Faculty of Medicine,
University of Antwerp, Universiteitsplein 1, B-2610 Antwerp, Belgium.
richardchristopher.delgadoratto@uantwerpen.be.
FAU - Soto-Calle, Veronica E
AU - Soto-Calle VE
FAU - Van den Eede, Peter
AU - Van den Eede P
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Rosas, Angel
AU - Rosas A
FAU - Abatih, Emmanuel N
AU - Abatih EN
FAU - Rodriguez Ferrucci, Hugo
AU - Rodriguez Ferrucci H
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
FAU - Van Geertruyden, Jean-Pierre
AU - Van Geertruyden JP
FAU - Erhart, Annette
AU - Erhart A
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20140106
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802

RN - 0 (Antimalarials)
RN - 886U3H6UFF (Chloroquine)
RN - MVR3634GX1 (Primaquine)
SB - IM
MH - Adolescent
MH - Adult
MH - Antimalarials/therapeutic use
MH - Child
MH - Child, Preschool
MH - Chloroquine/therapeutic use
MH - Cohort Studies
MH - Female
MH - *Genetic Variation
MH - Haplotypes
MH - Humans
MH - Malaria, Vivax/drug therapy/*epidemiology/parasitology/
*transmission
MH - Male
MH - Middle Aged
MH - Peru/epidemiology
MH - Plasmodium vivax/*genetics
MH - Polymerase Chain Reaction
MH - Primaquine/therapeutic use
MH - Rural Population
MH - Young Adult
PMC - PMC3893378
EDAT- 2014/01/08 06:00
MHDA- 2014/09/16 06:00
CRDT- 2014/01/08 06:00
PHST- 2013/09/04 00:00 [received]
PHST- 2013/12/28 00:00 [accepted]
PHST- 2014/01/08 06:00 [entrez]
PHST- 2014/01/08 06:00 [pubmed]
PHST- 2014/09/16 06:00 [medline]
AID - 1475-2875-13-8 [pii]
AID - 10.1186/1475-2875-13-8 [doi]
PST - epublish
SO - Malar J. 2014 Jan 6;13:8. doi: 10.1186/1475-2875-13-8.

PMID- 24077522
OWN - NLM
STAT- MEDLINE
DCOM- 20140428
LR - 20211021
IS - 2045-2322 (Electronic)
IS - 2045-2322 (Linking)
VI - 3
DP - 2013 Sep 30
TI - Multiple genetic origins of histidine-rich protein 2 gene
deletion in
      Plasmodium falciparum parasites from Peru.
PG - 2797
LID - 10.1038/srep02797 [doi]
AB - The majority of malaria rapid diagnostic tests (RDTs) detect

Plasmodium
falciparum histidine-rich protein 2 (PfHRP2), encoded by the pfhrp2 gene.
Recently, P. falciparum isolates from Peru were found to lack pfhrp2
leading to false-negative RDT results. We hypothesized that
pfhrp2-deleted parasites in Peru derived from a single genetic event. We
evaluated the parasite population structure and pfhrp2 haplotype of
samples collected between 1998 and 2005 using seven neutral and seven
chromosome 8 microsatellite markers, respectively. Five distinct pfhrp2
haplotypes, corresponding to five neutral microsatellite-based clonal
lineages, were detected in 1998–2001; pfhrp2 deletions occurred within
four haplotypes. In 2003–2005, outcrossing among the parasite lineages
resulted in eight population clusters that inherited the five pfhrp2
haplotypes seen previously and a new haplotype; pfhrp2 deletions occurred
within four of these haplotypes. These findings indicate that the genetic
origin of pfhrp2 deletion in Peru was not a single event, but likely
occurred multiple times.
FAU - Akinyi, Sheila
AU - Akinyi S
AD - Malaria Branch, Division of Parasitic Diseases and Malaria, Center for
Global Health, Centers for Disease Control and Prevention, Atlanta, GA
30333.
FAU - Hayden, Tonya
AU - Hayden T
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Torres, Katherine
AU - Torres K
FAU - Bendezu, Jorge
AU - Bendezu J
FAU - Abdallah, Joseph F
AU - Abdallah JF
FAU - Griffing, Sean M
AU - Griffing SM
FAU - Quezada, Wilmer Marquino
AU - Quezada WM
FAU - Arrospide, Nancy
AU - Arrospide N
FAU - De Oliveira, Alexandre Macedo
AU - De Oliveira AM

FAU - Lucas, Carmen
AU - Lucas C
FAU - Magill, Alan J
AU - Magill AJ
FAU - Bacon, David J
AU - Bacon DJ
FAU - Barnwell, John W
AU - Barnwell JW
FAU - Udhayakumar, Venkatachalam
AU - Udhayakumar V
LA - eng
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - D43TW007120/TW/FIC NIH HHS/United States
GR - U19AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PT - Research Support, U.S. Gov't, Non-P.H.S.
DEP - 20130930
PL - England
TA - Sci Rep
JT - Scientific reports
JID - 101563288
RN - 0 (Antigens, Protozoan)
RN - 0 (HRP-2 antigen, Plasmodium falciparum)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Animals
MH - Antigens, Protozoan/*genetics
MH - Bayes Theorem
MH - Cluster Analysis
MH - *Gene Deletion
MH - Haplotypes/genetics
MH - Humans
MH - Microsatellite Repeats/genetics
MH - Parasites/*genetics
MH - Peru
MH - Phenotype
MH - Plasmodium falciparum/*genetics
MH - Prevalence
MH - Protozoan Proteins/*genetics
PMC - PMC3786299
EDAT- 2013/10/01 06:00
MHDA- 2014/04/29 06:00
CRDT- 2013/10/01 06:00
PHST- 2013/06/18 00:00 [received]
PHST- 2013/09/04 00:00 [accepted]
PHST- 2013/10/01 06:00 [entrez]
PHST- 2013/10/01 06:00 [pubmed]
PHST- 2014/04/29 06:00 [medline]
AID - srep02797 [pii]
AID - 10.1038/srep02797 [doi]
PST - epublish

SO - Sci Rep. 2013 Sep 30;3:2797. doi: 10.1038/srep02797.

PMID- 24053144
OWN - NLM
STAT- MEDLINE
DCOM- 20140714
LR - 20211021
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 12
DP - 2013 Sep 22
TI - Assessing malaria transmission in a low endemicity area of north-western
      Peru.
PG - 339
LID - 10.1186/1475-2875-12-339 [doi]
AB - BACKGROUND: Where malaria endemicity is low, control programmes need
      increasingly sensitive tools for monitoring malaria transmission
      intensity (MTI) and to better define health priorities. A cross-sectional
      survey was conducted in a low endemicity area of the Peruvian north-
      western coast to assess the MTI using both molecular and serological
      tools. METHODS: Epidemiological, parasitological and serological data
      were collected from 2,667 individuals in three settlements of Bellavista
      district, in May 2010. Parasite infection was detected using microscopy
      and polymerase chain reaction (PCR). Antibodies to Plasmodium vivax
      merozoite surface protein-119 (PvMSP1(1)(9)) and to Plasmodium falciparum
      glutamate-rich protein (PfGLURP) were detected by ELISA. Risk factors for
      exposure to malaria (seropositivity) were assessed by multivariate survey
      logistic regression models. Age-specific antibody prevalence of both P.
      falciparum and P. vivax were analysed using a previously published
      catalytic conversion model based on maximum likelihood for generating
      seroconversion rates (SCR). RESULTS: The overall parasite prevalence by
      microscopy and PCR were extremely low: 0.3 and 0.9%, respectively for P.
      vivax, and 0 and 0.04%, respectively for P. falciparum, while
      seroprevalence was much higher, 13.6% for P. vivax and 9.8% for P.
      falciparum. Settlement, age and occupation as moto-taxi driver

during
      previous year were significantly associated with P. falciparum exposure,
      while age and distance to the water drain were associated with P. vivax
      exposure. Likelihood ratio tests supported age seroprevalence curves with
      two SCR for both P. vivax and P. falciparum indicating significant
      changes in the MTI over time. The SCR for PfGLURP was 19-fold lower after
      2002 as compared to before (lambda1 = 0.022 versus lambda2 = 0.431), and
      the SCR for PvMSP1(1)(9) was four-fold higher after 2006 as compared to
      before (lambda1 = 0.024 versus lambda2 = 0.006). CONCLUSION: Combining
      molecular and serological tools considerably enhanced the capacity of
      detecting current and past exposure to malaria infections and related
      risks factors in this very low endemicity area. This allowed for an
      improved characterization of the current human reservoir of infections,
      largely hidden and heterogeneous, as well as providing insights into
      recent changes in species specific MTIs. This approach will be of key
      importance for evaluating and monitoring future malaria elimination
      strategies.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Instituto de Medicina Tropical, Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, Lima, Peru. angelrosasa@gmail.com.
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
FAU - Speybroeck, Niko
AU - Speybroeck N
FAU - Cook, Jackie
AU - Cook J
FAU - Contreras-Mancilla, Juan
AU - Contreras-Mancilla J
FAU - Soto, Veronica
AU - Soto V
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Pozo, Edwar
AU - Pozo E
FAU - Ponce, Oscar J
AU - Ponce OJ
FAU - Pereira, Mayne O

AU - Pereira MO
FAU - Soares, Irene S
AU - Soares IS
FAU - Theisen, Michael
AU - Theisen M
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
FAU - Erhart, Annette
AU - Erhart A
LA - eng
PT - Journal Article
DEP - 20130922
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antibodies, Protozoan)
RN - 0 (DNA, Protozoan)
SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Aged, 80 and over
MH - Antibodies, Protozoan/blood
MH - Child
MH - Child, Preschool
MH - Cross-Sectional Studies
MH - DNA, Protozoan/blood/genetics
MH - Enzyme-Linked Immunosorbent Assay
MH - Female
MH - Humans
MH - Infant
MH - Infant, Newborn
MH - Malaria, Falciparum/epidemiology/*transmission
MH - Malaria, Vivax/epidemiology/*transmission
MH - Male
MH - Middle Aged
MH - Peru/epidemiology
MH - Plasmodium falciparum/genetics/immunology/isolation &
purification
MH - Plasmodium vivax/genetics/immunology/isolation & purification
MH - Polymerase Chain Reaction
MH - Young Adult
PMC - PMC3849384
EDAT- 2013/09/24 06:00
MHDA- 2014/07/16 06:00
CRDT- 2013/09/24 06:00
PHST- 2013/05/10 00:00 [received]
PHST- 2013/09/16 00:00 [accepted]
PHST- 2013/09/24 06:00 [entrez]
PHST- 2013/09/24 06:00 [pubmed]
PHST- 2014/07/16 06:00 [medline]
AID - 1475-2875-12-339 [pii]
AID - 10.1186/1475-2875-12-339 [doi]

PST - epublish
SO - Malar J. 2013 Sep 22;12:339. doi: 10.1186/1475-2875-12-339.

PMID- 24001096
OWN - NLM
STAT- MEDLINE
DCOM- 20140714
LR - 20211021
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 12
DP - 2013 Aug 30
TI - The history of 20th century malaria control in Peru.
PG - 303
LID - 10.1186/1475-2875-12-303 [doi]
AB - Malaria has been part of Peruvian life since at least the 1500s. While
      Peru gave the world quinine, one of the first treatments for malaria, its
      history is pockmarked with endemic malaria and occasional epidemics. In
      this review, major increases in Peruvian malaria incidence over the past
      hundred years are described, as well as the human factors that have
      facilitated these events, and concerted private and governmental efforts
      to control malaria. Political support for malaria control has varied and
      unexpected events like vector and parasite resistance have adversely
      impacted morbidity and mortality. Though the ready availability of novel
      insecticides like DDT and efficacious medications reduced malaria to very
      low levels for a decade after the post eradication era, malaria reemerged
      as an important modern day challenge to Peruvian public health. Its
      reemergence sparked collaboration between domestic and international
      partners towards the elimination of malaria in Peru.
FAU - Griffing, Sean M
AU - Griffing SM
AD - Division of Parasitic Diseases and Malaria, Malaria Branch, Center for
      Global Health, Centers for Disease Control and Prevention, Atlanta
      Georgia, USA. Sean.Griffing@gmail.com.
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Udhayakumar, Venkatachalam
AU - Udhayakumar V
LA - eng

PT - Historical Article
PT - Journal Article
PT - Research Support, U.S. Gov't, Non-P.H.S.
PT - Research Support, U.S. Gov't, P.H.S.
PT - Review
DEP - 20130830
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antimalarials)
RN - A7V27PHC7A (Quinine)
SB - IM
MH - Antimalarials/history/*therapeutic use
MH - Communicable Disease Control/*history/*methods
MH - Drug Therapy/history
MH - Health Policy
MH - History, 20th Century
MH - Humans
MH - Malaria/drug therapy/*epidemiology/*history/prevention &
control
MH - Peru/epidemiology
MH - Quinine
PMC - PMC3766208
EDAT- 2013/09/05 06:00
MHDA- 2014/07/16 06:00
CRDT- 2013/09/05 06:00
PHST- 2013/04/29 00:00 [received]
PHST- 2013/08/21 00:00 [accepted]
PHST- 2013/09/05 06:00 [entrez]
PHST- 2013/09/05 06:00 [pubmed]
PHST- 2014/07/16 06:00 [medline]
AID - 1475-2875-12-303 [pii]
AID - 10.1186/1475-2875-12-303 [doi]
PST - epublish
SO - Malar J. 2013 Aug 30;12:303. doi: 10.1186/1475-2875-12-303.

PMID- 23300943
OWN - NLM
STAT- MEDLINE
DCOM- 20130820
LR - 20211021
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 8
IP - 1
DP - 2013
TI - Traditional nets interfere with the uptake of long-lasting
insecticidal
      nets in the Peruvian Amazon: the relevance of net preference
for
      achieving high coverage and use.
PG - e50294
LID - 10.1371/journal.pone.0050294 [doi]

AB - BACKGROUND: While coverage of long-lasting insecticide-treated nets
      (LLIN) has steadily increased, a growing number of studies report gaps
      between net ownership and use. We conducted a mixed-methods social
      science study assessing the importance of net preference and use after
      Olyset(R) LLINs were distributed through a mass campaign in rural
      communities surrounding Iquitos, the capital city of the Amazonian region
      of Peru. METHODS: The study was conducted in the catchment area of the
      Paujil and Cahuide Health Centres (San Juan district) between July 2007
      and November 2008. During a first qualitative phase, participant
      observation and in-depth interviews collected information on key
      determinants for net preference and use. In a second quantitative phase,
      a survey among recently confirmed malaria patients evaluated the
      acceptability and use of both LLINs and traditional nets, and a case
      control study assessed the association between net preference/use and
      housing structure (open vs. closed houses). RESULTS: A total of 10
      communities were selected for the anthropological fieldwork and 228
      households participated in the quantitative studies. In the study area,
      bed nets are considered part of the housing structure and are therefore
      required to fulfil specific architectural and social functions, such as
      providing privacy and shelter, which the newly distributed Olyset(R)
      LLINs ultimately did not. The LLINs' failure to meet these criteria could
      mainly be attributed to their large mesh size, transparency and perceived
      ineffectiveness to protect against mosquitoes and other insects,
      resulting in 63.3% of households not using any of the distributed LLINs.
      Notably, LLIN usage was significantly lower in houses with no interior or
      exterior walls (35.2%) than in those with walls (73.8%) (OR = 5.2, 95CI
      [2.2; 12.3], p<0.001). CONCLUSION: Net preference can interfere with

      optimal LLIN use. In order to improve the number of effective days of
      LLIN protection per dollar spent, appropriate quantitative and
      qualitative methods for collecting information on net preference should
      be developed before any LLIN procurement decision is made.
FAU - Grietens, Koen Peeters
AU - Grietens KP
AD - Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium.
      kpeeters@itg.be
FAU - Muela Ribera, Joan
AU - Muela Ribera J
FAU - Soto, Veronica
AU - Soto V
FAU - Tenorio, Alex
AU - Tenorio A
FAU - Hoibak, Sarah
AU - Hoibak S
FAU - Aguirre, Angel Rosas
AU - Aguirre AR
FAU - Toomer, Elizabeth
AU - Toomer E
FAU - Rodriguez, Hugo
AU - Rodriguez H
FAU - Llanos Cuentas, Alejandro
AU - Llanos Cuentas A
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Erhart, Annette
AU - Erhart A
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20130102
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
SB - IM
MH - Attitude to Health
MH - Choice Behavior
MH - Climate
MH - Family Characteristics
MH - Housing
MH - Humans
MH - Insecticide-Treated Bednets/*statistics & numerical data
MH - Malaria/*prevention & control
MH - Mosquito Control/*instrumentation/methods
MH - Patient Acceptance of Health Care/statistics & numerical data
MH - Peru

MH - Rural Population
MH - Seasons
MH - Surveys and Questionnaires
PMC - PMC3534704
EDAT- 2013/01/10 06:00
MHDA- 2013/08/21 06:00
CRDT- 2013/01/10 06:00
PHST- 2012/05/02 00:00 [received]
PHST- 2012/10/22 00:00 [accepted]
PHST- 2013/01/10 06:00 [entrez]
PHST- 2013/01/10 06:00 [pubmed]
PHST- 2013/08/21 06:00 [medline]
AID - 10.1371/journal.pone.0050294 [doi]
AID - PONE-D-12-12503 [pii]
PST - ppublish
SO - PLoS One. 2013;8(1):e50294. doi: 10.1371/journal.pone.0050294. Epub 2013
      Jan 2.

PMID- 23118907
OWN - NLM
STAT- MEDLINE
DCOM- 20130509
LR - 20211021
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 7
IP - 10
DP - 2012
TI - Plasmodium falciparum field isolates from South America use an atypical
      red blood cell invasion pathway associated with invasion ligand
      polymorphisms.
PG - e47913
LID - 10.1371/journal.pone.0047913 [doi]
AB - Studies of Plasmodium falciparum invasion pathways in field isolates have
      been limited. Red blood cell (RBC) invasion is a complex process
      involving two invasion protein families; Erythrocyte Binding-Like (EBL)
      and the Reticulocyte Binding-Like (PfRh) proteins, which are polymorphic
      and not fully characterized in field isolates. To determine the various
      P. falciparum invasion pathways used by parasite isolates from South
      America, we studied the invasion phenotypes in three regions: Colombia,
      Peru and Brazil. Additionally, polymorphisms in three members of the EBL
      (EBA-181, EBA-175 and EBL-1) and five members of the PfRh (PfRh1, PfRh2a,

PfRh2b, PfRh4, PfRh5) families were determined. We found that most P. falciparum field isolates from Colombia and Peru invade RBCs through an atypical invasion pathway phenotypically characterized as resistant to all enzyme treatments (NrTrCr). Moreover, the invasion pathways and the ligand polymorphisms differed substantially among the Colombian and Brazilian isolates while the Peruvian isolates represent an amalgam of those present in the Colombian and Brazilian field isolates. The NrTrCr invasion profile was associated with the presence of the PfRh2a pepC variant, the PfRh5 variant 1 and EBA-181 RVNKN variant. The ebl and Pfrh expression levels in a field isolate displaying the NrTrCr profile also pointed to PfRh2a, PfRh5 and EBA-181 as being possibly the major players in this invasion pathway. Notably, our studies demonstrate the uniqueness of the Peruvian P. falciparum field isolates in terms of their invasion profiles and ligand polymorphisms, and present a unique opportunity for studying the ability of P. falciparum parasites to expand their invasion repertoire after being reintroduced to human populations. The present study is directly relevant to asexual blood stage vaccine design focused on invasion pathway proteins, suggesting that regional invasion variants and global geographical variation are likely to preclude a simple one size fits all type of vaccine.

FAU - Lopez-Perez, Mary
AU - Lopez-Perez M
AD - Molecular Parasitology, Lindsley F Kimball Research Institute, New York Blood Center, New York City, New York, United States of America.
FAU - Villasis, Elizabeth
AU - Villasis E
FAU - Machado, Ricardo L D
AU - Machado RL
FAU - Povoa, Marinete M
AU - Povoa MM
FAU - Vinetz, Joseph M
AU - Vinetz JM
FAU - Blair, Silvia

AU - Blair S
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Lustigman, Sara
AU - Lustigman S
LA - eng
GR - R03TW007349/TW/FIC NIH HHS/United States
GR - U19AI089681/AI/NIAID NIH HHS/United States
GR - R03 TW007349/TW/FIC NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - K24 AI068903/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20121031
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
RN - 0 (Ligands)
RN - 0 (Malaria Vaccines)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Animals
MH - *Erythrocytes/cytology/immunology/parasitology
MH - Humans
MH - Ligands
MH - Malaria Vaccines/immunology
MH - *Malaria, Falciparum/genetics/immunology/metabolism/
parasitology
MH - Phenotype
MH - *Plasmodium falciparum/genetics/immunology/pathogenicity
MH - Polymorphism, Genetic
MH - *Protozoan Proteins/genetics/immunology/metabolism
MH - Reticulocytes/metabolism/parasitology
MH - South America
PMC - PMC3485327
EDAT- 2012/11/03 06:00
MHDA- 2013/05/10 06:00
CRDT- 2012/11/03 06:00
PHST- 2012/08/02 00:00 [received]
PHST- 2012/09/17 00:00 [accepted]
PHST- 2012/11/03 06:00 [entrez]
PHST- 2012/11/03 06:00 [pubmed]
PHST- 2013/05/10 06:00 [medline]
AID - 10.1371/journal.pone.0047913 [doi]
AID - PONE-D-12-23377 [pii]
PST - ppublish
SO - PLoS One. 2012;7(10):e47913. doi: 10.1371/
journal.pone.0047913. Epub 2012
      Oct 31.

PMID- 23110555
OWN - NLM

STAT- MEDLINE
DCOM- 20130606
LR - 20211021
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 11
DP - 2012 Oct 30
TI - Anti-Plasmodium falciparum invasion ligand antibodies in a low malaria
      transmission region, Loreto, Peru.
PG - 361
LID - 10.1186/1475-2875-11-361 [doi]
AB - BACKGROUND: Erythrocyte invasion by Plasmodium falciparum is a complex
      process that involves two families; Erythrocyte Binding-Like (EBL) and
      the Reticulocyte Binding-Like (PfRh) proteins. Antibodies that inhibit
      merozoite attachment and invasion are believed to be important in
      mediating naturally acquired immunity and immunity generated by parasite
      blood stage vaccine candidates. The hypotheses tested in this study were
      1) that antibody responses against specific P. falciparum invasion
      ligands (EBL and PfRh) differ between symptomatic and asymptomatic
      individuals living in the low-transmission region of the Peruvian Amazon
      and 2), such antibody responses might have an association, either direct
      or indirect, with clinical immunity observed in asymptomatically
      parasitaemic individuals. METHODS: ELISA was used to assess antibody
      responses (IgG, IgG1 and IgG3) against recombinant P. falciparum invasion
      ligands of the EBL (EBA-175, EBA-181, EBA-140) and PfRh families (PfRh1,
      PfRh2a, PfRh2b, PfRh4 and PfRh5) in 45 individuals infected with P.
      falciparum from Peruvian Amazon. Individuals were classified as having
      symptomatic malaria (N=37) or asymptomatic infection (N=8). RESULTS:
      Antibody responses against both EBL and PfRh family proteins were
      significantly higher in asymptomatic compared to symptomatic individuals,
      demonstrating an association with clinical immunity. Significant
      differences in the total IgG responses were observed with EBA-175,

EBA-181, PfRh2b, and MSP119 (as a control). IgG1 responses against EBA-181, PfRh2a and PfRh2b were significantly higher in the asymptomatic individuals. Total IgG antibody responses against PfRh1, PfRh2a, PfRh2b, PfRh5, EBA-175, EBA-181 and MSP119 proteins were negatively correlated with level of parasitaemia. IgG1 responses against EBA-181, PfRh2a and PfRh2b and IgG3 response for PfRh2a were also negatively correlated with parasitaemia. CONCLUSIONS: These data suggest that falciparum malaria patients who develop clinical immunity (asymptomatic parasitaemia) in a low transmission setting such as the Peruvian Amazon have antibody responses to defined P. falciparum invasion ligand proteins higher than those found in symptomatic (non-immune) patients. While these findings will have to be confirmed by larger studies, these results are consistent with a potential role for one or more of these invasion ligands as a component of an anti-P. falciparum vaccine in low-transmission malaria-endemic regions.

FAU - Villasis, Elizabeth
AU - Villasis E
AD - Malaria Laboratory, Instituto de Medicina Tropical Alexander von Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru.
FAU - Lopez-Perez, Mary
AU - Lopez-Perez M
FAU - Torres, Katherine
AU - Torres K
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Neyra, Victor
AU - Neyra V
FAU - Bendezu, Jorge
AU - Bendezu J
FAU - Tricoche, Nancy
AU - Tricoche N
FAU - Lobo, Cheryl
AU - Lobo C
FAU - Vinetz, Joseph M
AU - Vinetz JM
FAU - Lustigman, Sara
AU - Lustigman S
LA - eng
GR - D43TW007120/TW/FIC NIH HHS/United States

GR - U19AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - D43 TW007120/TW/FIC NIH HHS/United States
GR - K24 AI068903/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20121030
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antibodies, Protozoan)
RN - 0 (Immunoglobulin G)
RN - 0 (Ligands)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Adolescent
MH - Adult
MH - Antibodies, Protozoan/*blood
MH - Child
MH - Erythrocytes/parasitology
MH - Female
MH - Humans
MH - Immunoglobulin G/blood
MH - Ligands
MH - Malaria, Falciparum/blood/*immunology/parasitology/
transmission
MH - Male
MH - Middle Aged
MH - Models, Immunological
MH - Parasitemia/blood/immunology/parasitology
MH - Peru
MH - Plasmodium falciparum/*immunology/pathogenicity
MH - Protozoan Proteins/immunology
MH - Young Adult
PMC - PMC3544580
EDAT- 2012/11/01 06:00
MHDA- 2013/06/07 06:00
CRDT- 2012/11/01 06:00
PHST- 2012/07/20 00:00 [received]
PHST- 2012/10/25 00:00 [accepted]
PHST- 2012/11/01 06:00 [entrez]
PHST- 2012/11/01 06:00 [pubmed]
PHST- 2013/06/07 06:00 [medline]
AID - 1475-2875-11-361 [pii]
AID - 10.1186/1475-2875-11-361 [doi]
PST - epublish
SO - Malar J. 2012 Oct 30;11:361. doi: 10.1186/1475-2875-11-361.

PMID- 22952633
OWN - NLM
STAT- MEDLINE
DCOM- 20130219

LR - 20220330
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 7
IP - 8
DP - 2012
TI - Rapid diagnostic tests for malaria diagnosis in the Peruvian Amazon:
      impact of pfhrp2 gene deletions and cross-reactions.
PG - e43094
LID - 10.1371/journal.pone.0043094 [doi]
AB - BACKGROUND: In the Peruvian Amazon, Plasmodium falciparum and Plasmodium
      vivax malaria are endemic in rural areas, where microscopy is not
      available. Malaria rapid diagnostic tests (RDTs) provide quick and
      accurate diagnosis. However, pfhrp2 gene deletions may limit the use of
      histidine-rich protein-2 (PfHRP2) detecting RDTs. Further, cross-
      reactions of P. falciparum with P. vivax-specific test lines and vice
      versa may impair diagnostic specificity. METHODS: Thirteen RDT products
      were evaluated on 179 prospectively collected malaria positive samples.
      Species diagnosis was performed by microscopy and confirmed by PCR.
      Pfhrp2 gene deletions were assessed by PCR. RESULTS: Sensitivity for P.
      falciparum diagnosis was lower for PfHRP2 compared to P. falciparum-
      specific Plasmodium lactate dehydrogenase (Pf-pLDH)-detecting RDTs (71.6%
      vs. 98.7%, p<0.001). Most (19/21) false negative PfHRP2 results were
      associated with pfhrp2 gene deletions (25.7% of 74 P. falciparum
      samples). Diagnostic sensitivity for P. vivax (101 samples) was
      excellent, except for two products. In 10/12 P. vivax-detecting RDT
      products, cross-reactions with the PfHRP2 or Pf-pLDH line occurred at a
      median frequency of 2.5% (range 0%-10.9%) of P. vivax samples assessed.
      In two RDT products, two and one P. falciparum samples respectively
      cross-reacted with the Pv-pLDH line. Two Pf-pLDH/pan-pLDH-detecting RDTs
      showed excellent sensitivity with few (1.0%) cross-reactions but showed
      faint Pf-pLDH lines in 24.7% and 38.9% of P. falciparum

samples.
      CONCLUSION: PfHRP2-detecting RDTs are not suitable in the Peruvian Amazon
      due to pfhrp2 gene deletions. Two Pf-pLDH-detecting RDTs performed
      excellently and are promising RDTs for this region although faint test
      lines are of concern.
FAU - Maltha, Jessica
AU - Maltha J
AD - Department of Clinical Sciences, Institute of Tropical Medicine, Antwerp,
      Belgium. jmaltha@itg.be
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Bendezu, Jorge
AU - Bendezu J
FAU - Sanchez, Luis
AU - Sanchez L
FAU - Cnops, Lieselotte
AU - Cnops L
FAU - Gillet, Philippe
AU - Gillet P
FAU - Jacobs, Jan
AU - Jacobs J
LA - eng
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20120828
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
RN - 0 (Antigens, Protozoan)
RN - 0 (HRP-2 antigen, Plasmodium falciparum)
RN - 0 (HRP3 protein, Plasmodium falciparum)
RN - 0 (Protozoan Proteins)
SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Antigens, Protozoan/*genetics/metabolism
MH - Child
MH - Child, Preschool
MH - Female
MH - Gene Deletion
MH - Geography
MH - Humans
MH - Infant
MH - Malaria/*diagnosis/*parasitology
MH - Male
MH - Microscopy/methods

MH - Middle Aged
MH - Models, Genetic
MH - Peru
MH - Plasmodium falciparum/*genetics
MH - Plasmodium vivax/*genetics
MH - Polymerase Chain Reaction/methods
MH - Prospective Studies
MH - Protozoan Proteins/*genetics/metabolism
PMC - PMC3429466
EDAT- 2012/09/07 06:00
MHDA- 2013/02/21 06:00
CRDT- 2012/09/07 06:00
PHST- 2012/05/30 00:00 [received]
PHST- 2012/07/16 00:00 [accepted]
PHST- 2012/09/07 06:00 [entrez]
PHST- 2012/09/07 06:00 [pubmed]
PHST- 2013/02/21 06:00 [medline]
AID - 10.1371/journal.pone.0043094 [doi]
AID - PONE-D-12-15357 [pii]
PST - ppublish
SO - PLoS One. 2012;7(8):e43094. doi: 10.1371/journal.pone.0043094. Epub 2012
      Aug 28.

PMID- 22015425
OWN - NLM
STAT- MEDLINE
DCOM- 20120619
LR - 20220409
IS - 1873-6254 (Electronic)
IS - 0001-706X (Linking)
VI - 121
IP - 3
DP - 2012 Mar
TI - Amazonian malaria: asymptomatic human reservoirs, diagnostic challenges,
      environmentally driven changes in mosquito vector populations, and the
      mandate for sustainable control strategies.
PG - 281-91
LID - 10.1016/j.actatropica.2011.10.001 [doi]
AB - Across the Americas and the Caribbean, nearly 561,000 slide-confirmed
      malaria infections were reported officially in 2008. The nine Amazonian
      countries accounted for 89% of these infections; Brazil and Peru alone
      contributed 56% and 7% of them, respectively. Local populations of the
      relatively neglected parasite Plasmodium vivax, which currently accounts
      for 77% of the regional malaria burden, are extremely diverse genetically
      and geographically structured. At a time when malaria

elimination is
      placed on the public health agenda of several endemic
countries, it
      remains unclear why malaria proved so difficult to control in
areas of
      relatively low levels of transmission such as the Amazon
Basin. We
      hypothesize that asymptomatic parasite carriage and massive
environmental
      changes that affect vector abundance and behavior are major
contributors
      to malaria transmission in epidemiologically diverse areas
across the
      Amazon Basin. Here we review available data supporting this
hypothesis
      and discuss their implications for current and future malaria
      intervention policies in the region. Given that locally
generated
      scientific evidence is urgently required to support malaria
control
      interventions in Amazonia, we briefly describe the aims of our
current
      field-oriented malaria research in rural villages and gold-
mining
      enclaves in Peru and a recently opened agricultural settlement
in Brazil.

FAU - da Silva-Nunes, Monica
AU - da Silva-Nunes M
AD - Center for Health Sciences, Federal University of Acre, Rio
Branco,
      Brazil.
FAU - Moreno, Marta
AU - Moreno M
FAU - Conn, Jan E
AU - Conn JE
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Abeles, Shira
AU - Abeles S
FAU - Vinetz, Joseph M
AU - Vinetz JM
FAU - Ferreira, Marcelo U
AU - Ferreira MU
LA - eng
GR - K24 AI068903/AI/NIAID NIH HHS/United States
GR - U19 AI089681/AI/NIAID NIH HHS/United States
GR - U19 AI089681-02/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Review
DEP - 20111012
PL - Netherlands
TA - Acta Trop

JT - Acta tropica
JID - 0370374
SB - IM
MH - Animals
MH - Brazil/epidemiology
MH - Carrier State/*diagnosis/parasitology
MH - Communicable Disease Control/methods/organization &
administration
MH - Culicidae/drug effects/parasitology/*physiology
MH - Disease Transmission, Infectious/*prevention & control
MH - Disease Vectors
MH - Environment
MH - Health Policy/legislation & jurisprudence
MH - Humans
MH - Insecticide-Treated Bednets
MH - Malaria/*diagnosis/*prevention & control/transmission
MH - Mosquito Control/methods
MH - Peru/epidemiology
MH - Plasmodium/pathogenicity
MH - Population Density
PMC - PMC3308722
MID - NIHMS360788
EDAT- 2011/10/22 06:00
MHDA- 2012/06/20 06:00
CRDT- 2011/10/22 06:00
PHST- 2011/06/08 00:00 [received]
PHST- 2011/09/30 00:00 [revised]
PHST- 2011/10/06 00:00 [accepted]
PHST- 2011/10/22 06:00 [entrez]
PHST- 2011/10/22 06:00 [pubmed]
PHST- 2012/06/20 06:00 [medline]
AID - S0001-706X(11)00286-5 [pii]
AID - 10.1016/j.actatropica.2011.10.001 [doi]
PST - ppublish
SO - Acta Trop. 2012 Mar;121(3):281-91. doi:
      10.1016/j.actatropica.2011.10.001. Epub 2011 Oct 12.

PMID- 22032415
OWN - NLM
STAT- MEDLINE
DCOM- 20121119
LR - 20151119
IS - 1365-3156 (Electronic)
IS - 1360-2276 (Linking)
VI - 17
IP - 2
DP - 2012 Feb
TI - Preliminary enquiry into the availability, price and quality
of malaria
      rapid diagnostic tests in the private health sector of six
malaria-
      endemic countries.
PG - 147-52
LID - 10.1111/j.1365-3156.2011.02904.x [doi]

AB - OBJECTIVES: This enquiry aimed to provide a snap-shot of availability,
      price and quality of malaria rapid diagnostic tests (RDTs) in private
      health facilities at selected sites in six malaria-endemic countries in
      Africa, South East Asia and South America. METHODS: In each study site,
      data collectors surveyed private healthcare facilities which were
      selected based on accessibility from their home institution. Using a
      questionnaire, information was recorded about the facility itself and the
      malaria RDT(s) available. Where possible, a small number of RDTs were
      procured and quality control tested using a standardized procedure.
      RESULTS: Of the 324 private healthcare facilities visited, 35 outlets
      (mainly private clinics and hospitals) were found to supply 10 different
      types of RDTs products. RDT prices across the six countries ranged from
      US$1.00 to $16.81. Five of the 14 malaria RDTs collected failed quality
      control testing. CONCLUSIONS: In the private outlets sampled, the
      availability of RDTs was limited. Some of the RDTs whose quality we
      tested demonstrated inadequate sensitivity. This presents a number of
      risks. Given the more widespread distribution of antimalarials currently
      planned for private sector facilities, parasite-based diagnosis in this
      sector will be essential to adhere to the WHO guidelines for effective
      case management of malaria. Considerable regulation and quality control
      are also necessary to assure the availability of accurate and reliable
      RDTs, as well as adequate case management and provider adherence to RDT
      results. Public sector engagement is likely to be essential in this
      process.

FAU - Albertini, A
AU - Albertini A
AD - FIND (Foundation for Innovative New Diagnostics), Geneva, Switzerland.
FAU - Djalle, D
AU - Djalle D

FAU - Faye, B
AU - Faye B
FAU - Gamboa, D
AU - Gamboa D
FAU - Luchavez, J
AU - Luchavez J
FAU - Mationg, M L
AU - Mationg ML
FAU - Mwangoka, G
AU - Mwangoka G
FAU - Oyibo, W
AU - Oyibo W
FAU - Bennett, J
AU - Bennett J
FAU - Incardona, S
AU - Incardona S
FAU - Lee, E
AU - Lee E
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20111027
PL - England
TA - Trop Med Int Health
JT - Tropical medicine & international health : TM & IH
JID - 9610576
SB - IM
MH - Africa
MH - Ambulatory Care Facilities
MH - Asia, Southeastern
MH - *Commerce
MH - *Diagnostic Tests, Routine/economics/standards
MH - Endemic Diseases
MH - Health Care Surveys
MH - *Health Services/economics/standards
MH - *Health Services Accessibility
MH - Hospitals
MH - Humans
MH - Malaria/*diagnosis/economics/parasitology
MH - Plasmodium falciparum
MH - Plasmodium vivax
MH - *Private Sector/economics/standards
MH - Quality Control
MH - South America
MH - Surveys and Questionnaires
EDAT- 2011/10/29 06:00
MHDA- 2012/12/10 06:00
CRDT- 2011/10/29 06:00
PHST- 2011/10/29 06:00 [entrez]
PHST- 2011/10/29 06:00 [pubmed]
PHST- 2012/12/10 06:00 [medline]
AID - 10.1111/j.1365-3156.2011.02904.x [doi]
PST - ppublish
SO - Trop Med Int Health. 2012 Feb;17(2):147-52. doi:

10.1111/j.1365-3156.2011.02904.x. Epub 2011 Oct 27.

PMID- 22203975
OWN - NLM
STAT- MEDLINE
DCOM- 20120312
LR - 20220129
IS - 1091-6490 (Electronic)
IS - 0027-8424 (Linking)
VI - 109
IP - 2
DP - 2012 Jan 10
TI - Multiple independent introductions of Plasmodium falciparum in South
America.
PG - 511-6
LID - 10.1073/pnas.1119058109 [doi]
AB - The origin of Plasmodium falciparum in South America is controversial.
Some studies suggest a recent introduction during the European
colonizations and the transatlantic slave trade. Other evidence--
archeological and genetic--suggests a much older origin. We collected and
analyzed P. falciparum isolates from different regions of the world,
encompassing the distribution range of the parasite, including
populations from sub-Saharan Africa, the Middle East, Southeast Asia, and
South America. Analyses of microsatellite and SNP polymorphisms show that
the populations of P. falciparum in South America are subdivided in two
main genetic clusters (northern and southern). Phylogenetic analyses, as
well as Approximate Bayesian Computation methods suggest independent
introductions of the two clusters from African sources. Our estimates of
divergence time between the South American populations and their likely
sources favor a likely introduction from Africa during the transatlantic
slave trade.
FAU - Yalcindag, Erhan
AU - Yalcindag E
AD - Laboratoire Maladies Infectieuses et Vecteurs, Ecologie, Genetique,
Evolution et Controle, Unite Mixte de Recherche 5290-224, Centre National
de la Recherche Scientifique-Institut de Recherche pour le Developpement-
Universite de Montpellier I, 34394 Montpellier Cedex 5, France.

      erhan.yalcindag@ird.fr
FAU - Elguero, Eric
AU - Elguero E
FAU - Arnathau, Celine
AU - Arnathau C
FAU - Durand, Patrick
AU - Durand P
FAU - Akiana, Jean
AU - Akiana J
FAU - Anderson, Timothy J
AU - Anderson TJ
FAU - Aubouy, Agnes
AU - Aubouy A
FAU - Balloux, Francois
AU - Balloux F
FAU - Besnard, Patrick
AU - Besnard P
FAU - Bogreau, Herve
AU - Bogreau H
FAU - Carnevale, Pierre
AU - Carnevale P
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
FAU - Fontenille, Didier
AU - Fontenille D
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Jombart, Thibaut
AU - Jombart T
FAU - Le Mire, Jacques
AU - Le Mire J
FAU - Leroy, Eric
AU - Leroy E
FAU - Maestre, Amanda
AU - Maestre A
FAU - Mayxay, Mayfong
AU - Mayxay M
FAU - Menard, Didier
AU - Menard D
FAU - Musset, Lise
AU - Musset L
FAU - Newton, Paul N
AU - Newton PN
FAU - Nkoghe, Dieudonne
AU - Nkoghe D
FAU - Noya, Oscar
AU - Noya O
FAU - Ollomo, Benjamin
AU - Ollomo B
FAU - Rogier, Christophe
AU - Rogier C
FAU - Veron, Vincent
AU - Veron V
FAU - Wide, Albina

AU - Wide A
FAU - Zakeri, Sedigheh
AU - Zakeri S
FAU - Carme, Bernard
AU - Carme B
FAU - Legrand, Eric
AU - Legrand E
FAU - Chevillon, Christine
AU - Chevillon C
FAU - Ayala, Francisco J
AU - Ayala FJ
FAU - Renaud, Francois
AU - Renaud F
FAU - Prugnolle, Franck
AU - Prugnolle F
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
GR - 1U19AI089681-01/AI/NIAID NIH HHS/United States
GR - 089275/WT_/Wellcome Trust/United Kingdom
GR - BB/H008802/1/BB_/Biotechnology and Biological Sciences
Research
      Council/United Kingdom
GR - U19 AI089681/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20111227
PL - United States
TA - Proc Natl Acad Sci U S A
JT - Proceedings of the National Academy of Sciences of the United
States of
      America
JID - 7505876
SB - IM
MH - Bayes Theorem
MH - Cluster Analysis
MH - *Demography
MH - *Emigration and Immigration
MH - *Genetic Variation
MH - Genetics, Population
MH - Humans
MH - Logistic Models
MH - Microsatellite Repeats/genetics
MH - Models, Genetic
MH - *Phylogeny
MH - Phylogeography
MH - Plasmodium falciparum/classification/*genetics
MH - Polymorphism, Single Nucleotide/genetics
MH - Principal Component Analysis
MH - South America
PMC - PMC3258587
EDAT- 2011/12/29 06:00
MHDA- 2012/03/13 06:00
CRDT- 2011/12/29 06:00

PHST- 2011/12/29 06:00 [entrez]
PHST- 2011/12/29 06:00 [pubmed]
PHST- 2012/03/13 06:00 [medline]
AID - 1119058109 [pii]
AID - 10.1073/pnas.1119058109 [doi]
PST - ppublish
SO - Proc Natl Acad Sci U S A. 2012 Jan 10;109(2):511-6. doi:
10.1073/pnas.1119058109. Epub 2011 Dec 27.

PMID- 21364745
OWN - NLM
STAT- MEDLINE
DCOM- 20110901
LR - 20211020
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 6
IP - 2
DP - 2011 Feb 18
TI - True versus apparent malaria infection prevalence: the contribution of a
Bayesian approach.
PG - e16705
LID - 10.1371/journal.pone.0016705 [doi]
AB - AIMS: To present a new approach for estimating the "true prevalence" of
malaria and apply it to datasets from Peru, Vietnam, and Cambodia.
METHODS: Bayesian models were developed for estimating both the malaria
prevalence using different diagnostic tests (microscopy, PCR & ELISA),
without the need of a gold standard, and the tests' characteristics.
Several sources of information, i.e. data, expert opinions and other
sources of knowledge can be integrated into the model. This approach
resulting in an optimal and harmonized estimate of malaria infection
prevalence, with no conflict between the different sources of
information, was tested on data from Peru, Vietnam and Cambodia. RESULTS:
Malaria sero-prevalence was relatively low in all sites, with ELISA
showing the highest estimates. The sensitivity of microscopy and ELISA
were statistically lower in Vietnam than in the other sites. Similarly,
the specificities of microscopy, ELISA and PCR were significantly lower
in Vietnam than in the other sites. In Vietnam and Peru, microscopy was
closer to the "true" estimate than the other 2 tests while as

expected
      ELISA, with its lower specificity, usually overestimated the prevalence.
      CONCLUSIONS: Bayesian methods are useful for analyzing prevalence results
      when no gold standard diagnostic test is available. Though some results
      are expected, e.g. PCR more sensitive than microscopy, a standardized and
      context-independent quantification of the diagnostic tests'
      characteristics (sensitivity and specificity) and the underlying malaria
      prevalence may be useful for comparing different sites. Indeed, the use
      of a single diagnostic technique could strongly bias the prevalence
      estimation. This limitation can be circumvented by using a Bayesian
      framework taking into account the imperfect characteristics of the
      currently available diagnostic tests. As discussed in the paper, this
      approach may further support global malaria burden estimation
      initiatives.
FAU - Speybroeck, Niko
AU - Speybroeck N
AD - Research Institute Health and Society, Universite Catholique de Louvain
      la Neuve, Brussels, Belgium. nspeybroeck@itg.be
FAU - Praet, Nicolas
AU - Praet N
FAU - Claes, Filip
AU - Claes F
FAU - Van Hong, Nguyen
AU - Van Hong N
FAU - Torres, Kathy
AU - Torres K
FAU - Mao, Sokny
AU - Mao S
FAU - Van den Eede, Peter
AU - Van den Eede P
FAU - Thi Thinh, Ta
AU - Thi Thinh T
FAU - Gamboa, Dioni
AU - Gamboa D
FAU - Sochantha, Tho
AU - Sochantha T
FAU - Thang, Ngo Duc
AU - Thang ND
FAU - Coosemans, Marc
AU - Coosemans M
FAU - Buscher, Philippe
AU - Buscher P
FAU - D'Alessandro, Umberto

AU - D'Alessandro U
FAU - Berkvens, Dirk
AU - Berkvens D
FAU - Erhart, Annette
AU - Erhart A
LA - eng
PT - Evaluation Study
PT - Journal Article
DEP - 20110218
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
SB - IM
MH - Adolescent
MH - Adult
MH - Bayes Theorem
MH - Cambodia/epidemiology
MH - Child
MH - Child, Preschool
MH - Diagnosis, Differential
MH - Diagnostic Tests, Routine/standards/statistics & numerical
data
MH - Humans
MH - Infant
MH - Malaria/*diagnosis/*epidemiology
MH - Middle Aged
MH - Peru/epidemiology
MH - Prevalence
MH - Sensitivity and Specificity
MH - Vietnam/epidemiology
MH - Young Adult
PMC - PMC3041757
EDAT- 2011/03/03 06:00
MHDA- 2011/09/02 06:00
CRDT- 2011/03/03 06:00
PHST- 2010/10/13 00:00 [received]
PHST- 2011/01/10 00:00 [accepted]
PHST- 2011/03/03 06:00 [entrez]
PHST- 2011/03/03 06:00 [pubmed]
PHST- 2011/09/02 06:00 [medline]
AID - 10.1371/journal.pone.0016705 [doi]
PST - epublish
SO - PLoS One. 2011 Feb 18;6(2):e16705. doi: 10.1371/
journal.pone.0016705.

PMID- 21297986
OWN - NLM
STAT- MEDLINE
DCOM- 20110802
LR - 20211020
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 6

IP - 1
DP - 2011 Jan 28
TI - Plasmodium vivax sub-patent infections after radical treatment are common
      in Peruvian patients: results of a 1-year prospective cohort study.
PG - e16257
LID - 10.1371/journal.pone.0016257 [doi]
AB - BACKGROUND: There is an increasing body of literature reporting treatment
      failure of the currently recommended radical treatment of Plasmodium
      vivax infections. As P. vivax is the main malaria species outside the
      African continent, emerging tolerance to its radical treatment regime
      could have major consequences in countries like Peru, where 80% of
      malaria cases are due to P. vivax. Here we describe the results of a
      1-year longitudinal follow up of 51 confirmed P. vivax patients living
      around Iquitos, Peruvian Amazon, and treated according to the Peruvian
      national guidelines. METHODOLOGY: Each month a blood sample for
      microscopy and later genotyping was systematically collected. Recent
      exposure to infection was estimated by detecting antibodies against the
      P. vivax circumsporozoite protein (CSP) and all PCR confirmed P. vivax
      infections were genotyped with 16 polymorphic microsatellites. RESULTS:
      During a 1-year period, 84 recurrent infections, 22 positive also by
      microscopy, were identified, with a median survival time to first
      recurrent infection of 203 days. Most of them (71%) were asymptomatic; in
      13 patients the infection persisted undetected by microscopy for several
      consecutive months. The genotype of mostly recurrent infections differed
      from that at day 0 while fewer differences were seen between the
      recurrent infections. The average expected heterozygosity was 0.56. There
      was strong linkage disequilibrium (I(A)(s) = 0.29, p<1.10(-4)) that
      remained also when analyzing only the unique haplotypes, suggesting
      common inbreeding. CONCLUSION: In Peru, the P. vivax recurrent infections

were common and displayed a high turnover of parasite genotypes compared
to day 0. Plasmodium vivax patients, even when treated according to the
national guidelines, may still represent an important parasite reservoir
that can maintain transmission. Any elimination effort should consider
such a hidden reservoir.
FAU - Van den Eede, Peter
AU - Van den Eede P
AD - Department of Parasitology, Institute of Tropical Medicine, Antwerp,
Belgium. pvandeneede@itg.be
FAU - Soto-Calle, Veronica E
AU - Soto-Calle VE
FAU - Delgado, Christopher
AU - Delgado C
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Grande, Tanilu
AU - Grande T
FAU - Rodriguez, Hugo
AU - Rodriguez H
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
FAU - Anne, Jozef
AU - Anne J
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
FAU - Erhart, Annette
AU - Erhart A
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20110128
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
RN - 0 (Antibodies, Protozoan)
SB - IM
MH - Antibodies, Protozoan/blood
MH - Cohort Studies
MH - Genotype
MH - Humans
MH - Longitudinal Studies
MH - Malaria, Vivax/*epidemiology/*therapy/transmission
MH - Peru/epidemiology
MH - *Plasmodium vivax/genetics
MH - Polymerase Chain Reaction
MH - Prospective Studies
MH - Recurrence
PMC - PMC3030575

EDAT- 2011/02/08 06:00
MHDA- 2011/08/04 06:00
CRDT- 2011/02/08 06:00
PHST- 2010/08/24 00:00 [received]
PHST- 2010/12/20 00:00 [accepted]
PHST- 2011/02/08 06:00 [entrez]
PHST- 2011/02/08 06:00 [pubmed]
PHST- 2011/08/04 06:00 [medline]
AID - 10.1371/journal.pone.0016257 [doi]
PST - epublish
SO - PLoS One. 2011 Jan 28;6(1):e16257. doi: 10.1371/
journal.pone.0016257.

PMID- 21036823
OWN - NLM
STAT- MEDLINE
DCOM- 20101130
LR - 20211020
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 83
IP - 5
DP - 2010 Nov
TI - Placental histopathologic changes associated with subclinical
malaria
      infection and its impact on the fetal environment.
PG - 973-80
LID - 10.4269/ajtmh.2010.09-0445 [doi]
AB - Microscopic examination of placental tissue can provide an
accurate
      assessment of malaria infection during pregnancy. In this
cross-sectional
      study of 193 women in Iquitos, Peru, 1.0% and 6.6% had
parasites in the
      peripheral blood as detected by microscopy and polymerase
chain reaction,
      respectively. However, 22% had placental malaria pigment
indicating past,
      subclinical infections. Placental tissues with pigment from 24
cases were
      matched by gravidity and month of delivery to 24 controls and
      histopathologically examined. Cases had significantly higher
number of
      monocytes in the intervillous space (44.7 versus 25.5; P =
0.012).
      Pigmented monocytes in fetal vessels were present in 33.3% of
cases. This
      study demonstrated that subclinical malarial infection
occurred
      frequently in pregnant women and is associated with increased
presence of
      monocytes in the placenta. Pigmented monocytes in fetal
vessels suggest
      parasites can breach the placental barrier and enter the fetal

      circulation.
FAU - Parekh, Falgunee K
AU - Parekh FK
AD - Tulane University School of Public Health and Tropical
Medicine, New
      Orleans, Louisiana, USA.
FAU - Davison, Billie B
AU - Davison BB
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Hernandez, Jean
AU - Hernandez J
FAU - Branch, Oralee H
AU - Branch OH
LA - eng
GR - R01 AI064831/AI/NIAID NIH HHS/United States
GR - R03 TW008064/TW/FIC NIH HHS/United States
GR - UR3/CCU 418652/PHS HHS/United States
GR - R01AL064831/PHS HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PT - Research Support, U.S. Gov't, P.H.S.
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
RN - 0 (Hemeproteins)
RN - 0 (Pigments, Biological)
RN - 39404-00-7 (hemozoin)
SB - IM
MH - Adolescent
MH - Adult
MH - Case-Control Studies
MH - Cross-Sectional Studies
MH - Female
MH - Hemeproteins/analysis
MH - Humans
MH - Malaria, Falciparum/blood/epidemiology/*pathology
MH - Malaria, Vivax/blood/epidemiology/*pathology
MH - Monocytes/pathology
MH - Parasitemia/blood
MH - Peru/epidemiology
MH - Pigments, Biological/analysis
MH - Placenta/chemistry/parasitology/*pathology
MH - Pregnancy
MH - Pregnancy Complications, Parasitic/blood/epidemiology/
*pathology
MH - Young Adult
PMC - PMC2963955
EDAT- 2010/11/03 06:00
MHDA- 2010/12/14 06:00
CRDT- 2010/11/02 06:00
PHST- 2010/11/02 06:00 [entrez]

PHST- 2010/11/03 06:00 [pubmed]
PHST- 2010/12/14 06:00 [medline]
AID - 83/5/973 [pii]
AID - 10.4269/ajtmh.2010.09-0445 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2010 Nov;83(5):973-80. doi:
      10.4269/ajtmh.2010.09-0445.

PMID- 21308193
OWN - NLM
STAT- MEDLINE
DCOM- 20110719
LR - 20191112
IS - 1726-4642 (Electronic)
IS - 1726-4634 (Linking)
VI - 27
IP - 4
DP - 2010 Oct-Dec
TI - [Use of standardized blood smear slide sets for competency
assessment in
      the malaria microscopic diagnosis in the Peruvian Amazon].
PG - 540-7
LID - S1726-46342010000400008 [pii]
AB - OBJECTIVES: To assess the competency of microscopists for
malaria
      diagnosis using standardized slide sets in the Peruvian
Amazon. MATERIAL
      AND METHODS: Cross-sectional study carried out in 122 first
level health
      facilities of the Peruvian Amazon, between July and September
2007.
      Within the frame of the project "Control Malaria in the border
areas of
      the Andean Region: A community approach" (PAMAFRO), we
evaluated the
      malaria diagnosis performance in 68 microscopists without
expertise (< 1
      year of expertise) and 76 microscopists with expertise (> 1
year) using
      standardized sets of 20 blood smear slides according to the
World Health
      Organization (WHO) recommendations. A correct diagnosis
(correct species
      identification) was defined as "agreement", a microscopist was
qualified
      as an "expert" if they have an agreement >/=90% (>/= 18 slides
with
      correct diagnosis), as a "referent" with an agreement between
80% and
      <90%, "competent" if they are between 70 and <80% and "in
training" if
      they have <70%. RESULTS: Microscopists with expertise (68.6%)
had more
      agreement than those without expertise (48.2%). The competency

assessment
      was acceptable (competent, referent, or experts levels) in 11.8% of the
      microscopists without expertise and in 52.6% from those with expertise.
      The agreement was lower using blood smear slides with P. falciparum with
      low parasitaemia, with P. malariae and with mixed infections.
      CONCLUSIONS: Is the first assessment, we found only one of three
      microscopists from the Peruvian Amazon is competent fro malaria diagnosis
      according to the WHO standards. From this baseline data, we have to
      continue working in order to improve the competency assessment of the
      microscopists within the frame of a quality assurance system.
FAU - Rosas-Aguirre, Angel
AU - Rosas-Aguirre A
AD - Organismo Andino de Salud-Convenio Hipolito Unanue, Lima, Peru.
      angelrosasa@gmail.com
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Rodriguez, Hugo
AU - Rodriguez H
FAU - Llanos-Zavalaga, Fernando
AU - Llanos-Zavalaga F
FAU - Aguirre, Kristhian
AU - Aguirre K
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
LA - spa
PT - English Abstract
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
TT - Uso de paneles de laminas estandarizadas para la evaluacion de
      competencias en el diagnostico microscopico de malaria en la Amazonia
      Peruana.
PL - Peru
TA - Rev Peru Med Exp Salud Publica
JT - Revista peruana de medicina experimental y salud publica
JID - 101227566
SB - IM
MH - Clinical Laboratory Techniques/standards
MH - Cross-Sectional Studies
MH - Humans
MH - Malaria/*blood/*diagnosis
MH - Microscopy/standards
MH - Parasitology/standards
MH - Peru
MH - Professional Competence/*standards
EDAT- 2011/02/11 06:00

MHDA- 2011/07/20 06:00
CRDT- 2011/02/11 06:00
PHST- 2011/02/11 06:00 [entrez]
PHST- 2011/02/11 06:00 [pubmed]
PHST- 2011/07/20 06:00 [medline]
AID - S1726-46342010000400008 [pii]
AID - 10.1590/s1726-46342010000400008 [doi]
PST - ppublish
SO - Rev Peru Med Exp Salud Publica. 2010 Oct-Dec;27(4):540-7. doi:
10.1590/s1726-46342010000400008.

PMID- 20529273
OWN - NLM
STAT- MEDLINE
DCOM- 20101004
LR - 20211020
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 9
DP - 2010 Jun 7
TI - Field evaluation of a rapid diagnostic test (Parascreen) for malaria
diagnosis in the Peruvian Amazon.
PG - 154
LID - 10.1186/1475-2875-9-154 [doi]
AB - BACKGROUND: The rapid diagnostic tests for malaria (RDT) constitute a
fast and opportune alternative for non-complicated malaria diagnosis in
areas where microscopy is not available. The objective of this study was
to validate a RDT named Parascreen under field conditions in Iquitos,
department of Loreto, Peru. Parascreen is a RDT that detects the
histidine-rich protein 2 (HRP2) antigen from Plasmodium falciparum and
lactate deshydrogenase from all Plasmodium species. METHODS: Parascreen
was compared with microscopy performed by experts (EM) and polymerase
chain reaction (PCR) using the following indicators: sensitivity (Se),
specificity (Sp), positive (PV+) and negative predictive values (PV-),
positive (LR+) and negative likehood ratio (LR-). RESULTS: 332 patients
with suspected non-complicated malaria who attended to the MOH health
centres were enrolled between October and December 2006. For P.
falciparum malaria, Parascreen in comparison with EM, had Se: 53.5%, Sp:
98.7%, PV+: 66.7%, PV-: 97.8%, LR+: 42.27 and LR-: 0.47; and

for non-P.
falciparum malaria, Se: 77.1%, Sp: 97.6%, PV+: 91.4%, PV-: 92.7%, LR+:
32.0 and LR-: 0.22. The comparison of Parascreen with PCR showed, for P.
falciparum malaria, Se: 81.8%, Sp: 99.1%, PV+: 75%, PV-: 99.4, LR+: 87.27
and LR-: 0.18; and for non-P. falciparum malaria Se: 76.1%, Sp: 99.2%,
PV+: 97.1%, PV-: 92.0%, LR+: 92.51 and LR-: 0.24. CONCLUSIONS: The study
results indicate that Parascreen is not a valid and acceptable test for
malaria diagnosis under the field conditions found in the Peruvian
Amazon. The relative proportion of Plasmodium species, in addition to the
genetic characteristics of the parasites in the area, must be considered
before applying any RDT, especially after the finding of P. falciparum
malaria parasites lacking pfhrp2 gene in this region.
FAU - Bendezu, Jorge
AU - Bendezu J
AD - Instituto de Medicina Tropical Alexander Von Humboldt, Universidad
Peruana Cayetano Heredia, AP 4314, Lima 100, Peru.
FAU - Rosas, Angel
AU - Rosas A
FAU - Grande, Tanilu
AU - Grande T
FAU - Rodriguez, Hugo
AU - Rodriguez H
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
FAU - Escobedo, Jorge
AU - Escobedo J
FAU - Gamboa, Dionicia
AU - Gamboa D
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
PT - Evaluation Study
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PT - Validation Study
DEP - 20100607
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antigens, Protozoan)
RN - 0 (HRP-2 antigen, Plasmodium falciparum)
RN - 0 (Protozoan Proteins)

RN - 0 (Reagent Kits, Diagnostic)
RN - EC 1.1.1.27 (L-Lactate Dehydrogenase)
SB - IM
MH - Adolescent
MH - Adult
MH - Antigens, Protozoan/*blood/genetics/immunology
MH - False Positive Reactions
MH - Female
MH - Humans
MH - Immunoassay/methods/*standards
MH - L-Lactate Dehydrogenase/blood/immunology
MH - Malaria, Falciparum/*diagnosis
MH - Malaria, Vivax/*diagnosis
MH - Male
MH - Microscopy
MH - Middle Aged
MH - Peru
MH - Plasmodium falciparum/genetics/immunology/*isolation &
purification
MH - Plasmodium vivax/genetics/immunology/*isolation & purification
MH - Polymerase Chain Reaction
MH - Protozoan Proteins/blood/genetics/immunology
MH - Reagent Kits, Diagnostic
MH - Reproducibility of Results
MH - Sensitivity and Specificity
MH - Young Adult
PMC - PMC2898785
EDAT- 2010/06/10 06:00
MHDA- 2010/10/05 06:00
CRDT- 2010/06/10 06:00
PHST- 2010/02/28 00:00 [received]
PHST- 2010/06/07 00:00 [accepted]
PHST- 2010/06/10 06:00 [entrez]
PHST- 2010/06/10 06:00 [pubmed]
PHST- 2010/10/05 06:00 [medline]
AID - 1475-2875-9-154 [pii]
AID - 10.1186/1475-2875-9-154 [doi]
PST - epublish
SO - Malar J. 2010 Jun 7;9:154. doi: 10.1186/1475-2875-9-154.

PMID- 20525233
OWN - NLM
STAT- MEDLINE
DCOM- 20101004
LR - 20211020
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 9
DP - 2010 Jun 3
TI - Multilocus genotyping reveals high heterogeneity and strong
local
      population structure of the Plasmodium vivax population in the
Peruvian
      Amazon.

PG - 151
LID - 10.1186/1475-2875-9-151 [doi]
AB - BACKGROUND: Peru is one of the Latin American countries with the highest
      malaria burden, mainly due to Plasmodium vivax infections. However,
      little is known about P. vivax transmission dynamics in the Peruvian
      Amazon, where most malaria cases occur. The genetic diversity and
      population structure of P. vivax isolates collected in different
      communities around Iquitos city, the capital of the Peruvian Amazon, was
      determined. METHODS: Plasmodium vivax population structure was determined
      by multilocus genotyping with 16 microsatellites on 159 P. vivax infected
      blood samples (mono-infections) collected in four sites around Iquitos
      city. The population characteristics were assessed only in samples with
      monoclonal infections (n = 94), and the genetic diversity was determined
      by calculating the expected heterozygosity and allelic richness. Both
      linkage disequilibrium and the genetic differentiation (theta) were
      estimated. RESULTS: The proportion of polyclonal infections varied
      substantially by site (11% - 70%), with the expected heterozygosity
      ranging between 0.44 and 0.69; no haplotypes were shared between the
      different populations. Linkage disequilibrium was present in all
      populations (IAS 0.14 - 0.61) but was higher in those with fewer
      polyclonal infections, suggesting inbreeding and a clonal population
      structure. Strong population differentiation (theta = 0.45) was found and
      the Bayesian inference cluster analysis identified six clusters based on
      distinctive allele frequencies. CONCLUSION: The P. vivax populations
      circulating in the Peruvian Amazon basin are genetically diverse,
      strongly differentiated and they have a low effective recombination rate.
      These results are in line with the low and clustered pattern of malaria
      transmission observed in the region around Iquitos city.
FAU - Van den Eede, Peter

AU - Van den Eede P
AD - Department of Parasitology, Institute of Tropical Medicine, Antwerp,
      Belgium. pvandeneede@itg.be
FAU - Van der Auwera, Gert
AU - Van der Auwera G
FAU - Delgado, Christopher
AU - Delgado C
FAU - Huyse, Tine
AU - Huyse T
FAU - Soto-Calle, Veronica E
AU - Soto-Calle VE
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Grande, Tanilu
AU - Grande T
FAU - Rodriguez, Hugo
AU - Rodriguez H
FAU - Llanos, Alejandro
AU - Llanos A
FAU - Anne, Jozef
AU - Anne J
FAU - Erhart, Annette
AU - Erhart A
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20100603
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (DNA, Protozoan)
SB - IM
MH - DNA, Protozoan/*genetics
MH - Gene Frequency
MH - *Genetic Variation
MH - Genotype
MH - Humans
MH - Linkage Disequilibrium/genetics
MH - Malaria, Vivax/epidemiology/*parasitology/transmission
MH - Microsatellite Repeats/*genetics
MH - Peru/epidemiology
MH - Plasmodium vivax/classification/*genetics/isolation & purification
MH - Polymerase Chain Reaction
MH - Recombination, Genetic
MH - Retrospective Studies
PMC - PMC2898784
EDAT- 2010/06/08 06:00
MHDA- 2010/10/05 06:00
CRDT- 2010/06/08 06:00

PHST- 2010/03/12 00:00 [received]
PHST- 2010/06/03 00:00 [accepted]
PHST- 2010/06/08 06:00 [entrez]
PHST- 2010/06/08 06:00 [pubmed]
PHST- 2010/10/05 06:00 [medline]
AID - 1475-2875-9-151 [pii]
AID - 10.1186/1475-2875-9-151 [doi]
PST - epublish
SO - Malar J. 2010 Jun 3;9:151. doi: 10.1186/1475-2875-9-151.

PMID- 20519594
OWN - NLM
STAT- MEDLINE
DCOM- 20100623
LR - 20211020
IS - 1476-1645 (Electronic)
IS - 0002-9637 (Linking)
VI - 82
IP - 6
DP - 2010 Jun
TI - Adherence to 7-day primaquine treatment for the radical cure of P. vivax
      in the Peruvian Amazon.
PG - 1017-23
LID - 10.4269/ajtmh.2010.09-0521 [doi]
AB - Despite being free of charge, treatment adherence to 7-day primaquine for
      the radical cure of Plasmodium vivax was estimated at 62.2% among
      patients along the Iquitos-Nauta road in the Peruvian Amazon. The
      principal reason for non-adherence was the perceived adverse effects
      related to local humoral illness conceptions that hold that malaria
      produces a hot state of body, which is further aggravated by the
      characteristically hot medical treatment. Notably, patients were willing
      to adhere to the first 3 days of treatment during which symptoms are most
      apparent and include the characteristic chills. Nevertheless, as symptoms
      abate, the perceived aggravating characteristics of the medication
      outweigh the perceived advantages of treatment adherence. Improving
      community awareness about the role of primaquine to prevent further
      malaria transmission and fostering a realistic system of direct observed
      treatment intake, organized at community level, can be expected to
      improve adherence to the radical cure of P. vivax in this

area.
FAU - Grietens, Koen Peeters
AU - Grietens KP
AD - Department of Parasitology, Institute of Tropical Medicine,
Antwerp,
      Belgium. kpeeters@itg.be
FAU - Soto, Veronica
AU - Soto V
FAU - Erhart, Annette
AU - Erhart A
FAU - Ribera, Joan Muela
AU - Ribera JM
FAU - Toomer, Elizabeth
AU - Toomer E
FAU - Tenorio, Alex
AU - Tenorio A
FAU - Montalvo, Tanilu Grande
AU - Montalvo TG
FAU - Rodriguez, Hugo
AU - Rodriguez H
FAU - Cuentas, Alejandro Llanos
AU - Cuentas AL
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
FAU - Gamboa, Dionicia
AU - Gamboa D
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
GR - R01-AI067727-03/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
PL - United States
TA - Am J Trop Med Hyg
JT - The American journal of tropical medicine and hygiene
JID - 0370507
RN - 0 (Antimalarials)
RN - MVR3634GX1 (Primaquine)
SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Aged, 80 and over
MH - Animals
MH - Antimalarials/*administration & dosage/adverse effects/
*therapeutic use
MH - Child
MH - Child, Preschool
MH - Cultural Characteristics
MH - Directly Observed Therapy
MH - Humans
MH - Infant
MH - Malaria, Vivax/*drug therapy/epidemiology/psychology
MH - Middle Aged

MH - *Patient Compliance/psychology
MH - Peru/epidemiology
MH - Plasmodium vivax/drug effects
MH - Primaquine/*administration & dosage/adverse effects/
*therapeutic use
MH - Young Adult
PMC - PMC2877405
EDAT- 2010/06/04 06:00
MHDA- 2010/06/24 06:00
CRDT- 2010/06/04 06:00
PHST- 2010/06/04 06:00 [entrez]
PHST- 2010/06/04 06:00 [pubmed]
PHST- 2010/06/24 06:00 [medline]
AID - 82/6/1017 [pii]
AID - 10.4269/ajtmh.2010.09-0521 [doi]
PST - ppublish
SO - Am J Trop Med Hyg. 2010 Jun;82(6):1017-23. doi:
      10.4269/ajtmh.2010.09-0521.

PMID- 20470441
OWN - NLM
STAT- MEDLINE
DCOM- 20101004
LR - 20211020
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 9
DP - 2010 May 17
TI - Global sequence variation in the histidine-rich proteins 2 and
3 of
      Plasmodium falciparum: implications for the performance of
malaria rapid
      diagnostic tests.
PG - 129
LID - 10.1186/1475-2875-9-129 [doi]
AB - BACKGROUND: Accurate diagnosis is essential for prompt and
appropriate
      treatment of malaria. While rapid diagnostic tests (RDTs)
offer great
      potential to improve malaria diagnosis, the sensitivity of
RDTs has been
      reported to be highly variable. One possible factor
contributing to
      variable test performance is the diversity of parasite
antigens. This is
      of particular concern for Plasmodium falciparum histidine-rich
protein 2
      (PfHRP2)-detecting RDTs since PfHRP2 has been reported to be
highly
      variable in isolates of the Asia-Pacific region. METHODS: The
pfhrp2 exon
      2 fragment from 458 isolates of P. falciparum collected from
38 countries
      was amplified and sequenced. For a subset of 80 isolates, the

exon 2
      fragment of histidine-rich protein 3 (pfhrp3) was also amplified and
      sequenced. DNA sequence and statistical analysis of the variation
      observed in these genes was conducted. The potential impact of the pfhrp2
      variation on RDT detection rates was examined by analysing the
      relationship between sequence characteristics of this gene and the
      results of the WHO product testing of malaria RDTs: Round 1 (2008), for
      34 PfHRP2-detecting RDTs. RESULTS: Sequence analysis revealed extensive
      variations in the number and arrangement of various repeats encoded by
      the genes in parasite populations world-wide. However, no statistically
      robust correlation between gene structure and RDT detection rate for P.
      falciparum parasites at 200 parasites per microlitre was identified.
      CONCLUSIONS: The results suggest that despite extreme sequence variation,
      diversity of PfHRP2 does not appear to be a major cause of RDT
      sensitivity variation.
FAU - Baker, Joanne
AU - Baker J
AD - Department of Drug Resistance and Diagnostics, Australian Army Malaria
      Institute, Brisbane, Australia. qin.cheng@defence.gov.au.
FAU - Ho, Mei-Fong
AU - Ho MF
FAU - Pelecanos, Anita
AU - Pelecanos A
FAU - Gatton, Michelle
AU - Gatton M
FAU - Chen, Nanhua
AU - Chen N
FAU - Abdullah, Salim
AU - Abdullah S
FAU - Albertini, Audrey
AU - Albertini A
FAU - Ariey, Frederic
AU - Ariey F
FAU - Barnwell, John
AU - Barnwell J
FAU - Bell, David
AU - Bell D
FAU - Cunningham, Jane
AU - Cunningham J
FAU - Djalle, Djibrine
AU - Djalle D
FAU - Echeverry, Diego F

AU - Echeverry DF
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Hii, Jeffery
AU - Hii J
FAU - Kyaw, Myat Phone
AU - Kyaw MP
FAU - Luchavez, Jennifer
AU - Luchavez J
FAU - Membi, Christopher
AU - Membi C
FAU - Menard, Didier
AU - Menard D
FAU - Murillo, Claribel
AU - Murillo C
FAU - Nhem, Sina
AU - Nhem S
FAU - Ogutu, Bernhards
AU - Ogutu B
FAU - Onyor, Pamela
AU - Onyor P
FAU - Oyibo, Wellington
AU - Oyibo W
FAU - Wang, Shan Qing
AU - Wang SQ
FAU - McCarthy, James
AU - McCarthy J
FAU - Cheng, Qin
AU - Cheng Q
LA - eng
GR - R01 AI067727-03/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20100517
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antigens, Protozoan)
RN - 0 (DNA, Protozoan)
RN - 0 (HRP-2 antigen, Plasmodium falciparum)
RN - 0 (Protozoan Proteins)
RN - 0 (Reagent Kits, Diagnostic)
SB - IM
MH - Animals
MH - Antigens, Protozoan/*genetics/immunology
MH - DNA, Protozoan/genetics
MH - Genetic Variation
MH - Humans
MH - Immunoassay/*methods/standards
MH - Malaria, Falciparum/*diagnosis/genetics/parasitology
MH - Plasmodium falciparum/*genetics/immunology/*isolation &
purification

MH - Polymerase Chain Reaction
MH - Protozoan Proteins/*genetics/immunology
MH - Reagent Kits, Diagnostic
MH - Sensitivity and Specificity
MH - Sequence Analysis, DNA
PMC - PMC2893195
EDAT- 2010/05/18 06:00
MHDA- 2010/10/05 06:00
CRDT- 2010/05/18 06:00
PHST- 2010/03/08 00:00 [received]
PHST- 2010/05/17 00:00 [accepted]
PHST- 2010/05/18 06:00 [entrez]
PHST- 2010/05/18 06:00 [pubmed]
PHST- 2010/10/05 06:00 [medline]
AID - 1475-2875-9-129 [pii]
AID - 10.1186/1475-2875-9-129 [doi]
PST - epublish
SO - Malar J. 2010 May 17;9:129. doi: 10.1186/1475-2875-9-129.

PMID- 20111602
OWN - NLM
STAT- MEDLINE
DCOM- 20100520
LR - 20220409
IS - 1932-6203 (Electronic)
IS - 1932-6203 (Linking)
VI - 5
IP - 1
DP - 2010 Jan 25
TI - A large proportion of P. falciparum isolates in the Amazon region of Peru
      lack pfhrp2 and pfhrp3: implications for malaria rapid diagnostic tests.
PG - e8091
LID - 10.1371/journal.pone.0008091 [doi]
AB - BACKGROUND: Malaria rapid diagnostic tests (RDTs) offer significant
      potential to improve the diagnosis of malaria, and are playing an
      increasing role in malaria case management, control and elimination.
      Peru, along with other South American countries, is moving to introduce
      malaria RDTs as components of malaria control programmes supported by the
      Global Fund for AIDS, TB and malaria. The selection of the most suitable
      malaria RDTs is critical to the success of the programmes. METHODS: Eight
      of nine microscopy positive P. falciparum samples collected in Iquitos,
      Peru tested negative or weak positive using HRP2-detecting RDTs. These
      samples were tested for the presence of pfhrp2 and pfhrp3 and

their
      flanking genes by PCR, as well as the presence of HRP proteins by ELISA.
      To investigate for geographic extent of HRP-deleted parasites and their
      temporal occurrence a retrospective study was undertaken on 148
      microscopy positive P. falciparum samples collected in different areas of
      the Amazon region of Peru. FINDINGS: Eight of the nine isolates lacked
      the pfhrp2 and/or pfhrp3 genes and one or both flanking genes, and the
      absence of HRP was confirmed by ELISA. The retrospective study showed
      that 61 (41%) and 103 (70%) of the 148 samples lacked the pfhrp2 or
      pfhrp3 genes respectively, with 32 (21.6%) samples lacking both hrp
      genes. CONCLUSIONS: This is the first documentation of P. falciparum
      field isolates lacking pfhrp2 and/or pfhrp3. The high frequency and wide
      distribution of different parasites lacking pfhrp2 and/or pfhrp3 in
      widely dispersed areas in the Peruvian Amazon implies that malaria RDTs
      targeting HRP2 will fail to detect a high proportion of P. falciparum in
      malaria-endemic areas of Peru and should not be used. RDTs detecting
      parasite LDH or aldolase and quality microscopy should be use for malaria
      diagnosis in this region. There is an urgent need for investigation of
      the abundance and geographic distribution of these parasites in Peru and
      neighbouring countries.
FAU - Gamboa, Dionicia
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt Universidad Peruana
      Cayetano Heredia, Lima, Peru.
FAU - Ho, Mei-Fong
AU - Ho MF
FAU - Bendezu, Jorge
AU - Bendezu J
FAU - Torres, Katherine
AU - Torres K
FAU - Chiodini, Peter L
AU - Chiodini PL
FAU - Barnwell, John W
AU - Barnwell JW
FAU - Incardona, Sandra

AU - Incardona S
FAU - Perkins, Mark
AU - Perkins M
FAU - Bell, David
AU - Bell D
FAU - McCarthy, James
AU - McCarthy J
FAU - Cheng, Qin
AU - Cheng Q
LA - eng
GR - R01 AI067727/AI/NIAID NIH HHS/United States
GR - R01 AI067727-03/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20100125
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
RN - 0 (Antigens, Protozoan)
RN - 0 (HRP-2 antigen, Plasmodium falciparum)
RN - 0 (Protozoan Proteins)
RN - 0 (Reagent Kits, Diagnostic)
SB - IM
MH - Animals
MH - Antigens, Protozoan/*genetics
MH - Enzyme-Linked Immunosorbent Assay
MH - Malaria, Falciparum/*diagnosis
MH - Plasmodium falciparum/*genetics/isolation & purification
MH - Protozoan Proteins/*genetics
MH - Reagent Kits, Diagnostic
MH - Retrospective Studies
MH - South America
PMC - PMC2810332
EDAT- 2010/01/30 06:00
MHDA- 2010/05/21 06:00
CRDT- 2010/01/30 06:00
PHST- 2009/09/07 00:00 [received]
PHST- 2009/11/06 00:00 [accepted]
PHST- 2010/01/30 06:00 [entrez]
PHST- 2010/01/30 06:00 [pubmed]
PHST- 2010/05/21 06:00 [medline]
AID - 10.1371/journal.pone.0008091 [doi]
PST - epublish
SO - PLoS One. 2010 Jan 25;5(1):e8091. doi: 10.1371/
journal.pone.0008091.

PMID- 19514108
OWN - NLM
STAT- MEDLINE
DCOM- 20091008
LR - 20191210
IS - 1872-7573 (Electronic)

IS - 0378-8741 (Linking)
VI - 123
IP - 3
DP - 2009 Jun 25
TI - Medicinal plants from the Yanesha (Peru): evaluation of the
      leishmanicidal and antimalarial activity of selected extracts.
PG - 413-22
AB - AIM OF THE STUDY: Ninety-four ethanolic extracts of plants
used
      medicinally by the Yanesha, an Amazonian Peruvian ethnic
group, for
      affections related to leishmaniasis and malaria were screened
in vitro
      against Leishmania amazonensis amastigotes and against a
Plasmodium
      falciparum chloroquine resistant strain. MATERIALS AND
METHODS: The
      viability of Leishmania amazonensis amastigote stages was
assessed by the
      reduction of tetrazolium salt (MTT) while the impact on
Plasmodium
      falciparum was determined by measuring the incorporation of
radio-
      labelled hypoxanthine. RESULTS AND CONCLUSIONS: Six plant
species
      displayed good activity against Plasmodium falciparum
chloroquine
      resistant strain (IC(50) < 10 microg/ml): a Monimiaceae,
Siparuna aspera
      (Ruiz & Pavon), A. DC., two Zingiberaceae, Renealmia
thyrsoidea (Ruiz &
      Pavon) Poepp. & Endl. and Renealmia alpinia (Rottb.), two
Piperaceae
      (Piper aduncum L. and Piper sp.) and the leaves of Jacaranda
copaia
      (Aubl.) D. Don (Bignoniaceae). Eight species displayed
interesting
      leishmanicidal activities (IC50 < 10 microg/ml): Carica papaya
L.
      (Caricaceae), Piper dennisii Trel (Piperaceae), Hedychium
coronarium J.
      Konig (Zingiberaceae), Cestrum racemosum Ruiz & Pav.
(Solanaceae),
      Renealmia alpinia (Rottb.) Zingiberaceae, Lantana sp.
(Verbenaceae),
      Hyptis lacustris A. St.-Hil. ex Benth. (Lamiaceae) and Calea
montana
      Klat. (Asteraceae). Most of them are used against skin
affections by
      Yanesha people. Results are discussed herein, according to the
      traditional use of the plants and compared with data obtained
from the
      literature.
FAU - Valadeau, Celine

AU - Valadeau C
AD - IFEA UMIFRE 17 CNRS/MAEE, Casilla 18-1217, Lima, Peru.
FAU - Pabon, Adriana
AU - Pabon A
FAU - Deharo, Eric
AU - Deharo E
FAU - Alban-Castillo, Joaquina
AU - Alban-Castillo J
FAU - Estevez, Yannick
AU - Estevez Y
FAU - Lores, Fransis Augusto
AU - Lores FA
FAU - Rojas, Rosario
AU - Rojas R
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Sauvain, Michel
AU - Sauvain M
FAU - Castillo, Denis
AU - Castillo D
FAU - Bourdy, Genevieve
AU - Bourdy G
LA - eng
PT - Evaluation Study
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
PL - Ireland
TA - J Ethnopharmacol
JT - Journal of ethnopharmacology
JID - 7903310
RN - 0 (Antimalarials)
RN - 0 (Plant Extracts)
RN - 0 (Trypanocidal Agents)
SB - IM
MH - Animals
MH - Antimalarials/*pharmacology
MH - Drug Resistance
MH - Leishmania/*drug effects
MH - Life Cycle Stages
MH - *Magnoliopsida
MH - Medicine, Traditional
MH - Parasitic Sensitivity Tests
MH - Peru
MH - Plant Extracts/*pharmacology
MH - *Plants, Medicinal
MH - Plasmodium falciparum/*drug effects
MH - Trypanocidal Agents/*pharmacology
EDAT- 2009/06/11 09:00
MHDA- 2009/10/09 06:00
CRDT- 2009/06/11 09:00
PHST- 2009/06/11 09:00 [entrez]
PHST- 2009/06/11 09:00 [pubmed]
PHST- 2009/10/09 06:00 [medline]
AID - S0378-8741(09)00189-5 [pii]

AID - 10.1016/j.jep.2009.03.041 [doi]
PST - ppublish
SO - J Ethnopharmacol. 2009 Jun 25;123(3):413-22. doi:
      10.1016/j.jep.2009.03.041.

PMID- 18782451
OWN - NLM
STAT- MEDLINE
DCOM- 20081024
LR - 20211020
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 7
DP - 2008 Sep 9
TI - Antibody response dynamics to the Plasmodium falciparum
conserved vaccine
      candidate antigen, merozoite surface protein-1 C-terminal 19kD
      (MSP1-19kD), in Peruvians exposed to hypoendemic malaria
transmission.
PG - 173
LID - 10.1186/1475-2875-7-173 [doi]
AB - BACKGROUND: In high-transmission areas, developing immunity to
      symptomatic Plasmodium falciparum infections requires 2-10
years of
      uninterrupted exposure. Delayed malaria-immunity has been
attributed to
      difficult-to-develop and then short-lived antibody responses.
METHODS: In
      a study area with <0.5 P. falciparum infections/person/year,
antibody
      responses to the MSP1-19kD antigen were evaluated and
associations with
      P. falciparum infections in children and adults. In months
surrounding
      and during the malaria seasons of 2003-2004, 1,772
participants received
      > or =6 active visits in one study-year. Community-wide
surveys were
      conducted at the beginning and end of each malaria season, and
weekly
      active visits were completed for randomly-selected individuals
each
      month. There were 79 P. falciparum infections with serum
samples
      collected during and approximately one month before and after
infection.
      Anti-MSP1-19kD IgG levels were measured by ELISA. RESULTS: The
infection
      prevalence during February-July was similar in children
(0.02-0.12
      infections/person/month) and adults (0.03-0.14 infections/
person/month)
      and was negligible in the four-month dry season. In children
and adults,

the seroprevalence was maintained in the beginning (children = 28.9%,
adults = 61.8%) versus ending malaria-season community survey (children =
26.7%, adults = 64.6%). Despite the four-month non-transmission season,
the IgG levels in Plasmodium-negative adults were similar to P.
falciparum-positive adults. Although children frequently responded upon
infection, the transition from a negative/low level before infection to a
high level during/after infection was slower in children. Adults and
children IgG-positive before infection had reduced symptoms and parasite
density. CONCLUSION: Individuals in low transmission areas can rapidly
develop and maintain alphaMSP1-19kD IgG responses for >4 months, unlike
responses reported in high transmission study areas. A greater immune
capacity might contribute to the frequent asymptomatic P. falciparum
infections in this Peruvian population.
FAU - Torres, Katherine J
AU - Torres KJ
AD - Department of Medicine, Division of Infectious Disease, University of
Alabama, Alabama, Birmingham, USA. kathjess2000@yahoo.com
FAU - Clark, Eva H
AU - Clark EH
FAU - Hernandez, Jean N
AU - Hernandez JN
FAU - Soto-Cornejo, Katherine E
AU - Soto-Cornejo KE
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Branch, OraLee H
AU - Branch OH
LA - eng
GR - R01 AI064831/AI/NIAID NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, Non-U.S. Gov't
DEP - 20080909
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antibodies, Protozoan)
RN - 0 (Immunoglobulin G)
RN - 0 (Malaria Vaccines)
RN - 0 (Merozoite Surface Protein 1)

SB - IM
MH - Adolescent
MH - Adult
MH - Aged
MH - Aged, 80 and over
MH - Animals
MH - Antibodies, Protozoan/*blood
MH - Child
MH - Child, Preschool
MH - Endemic Diseases/prevention & control
MH - Enzyme-Linked Immunosorbent Assay
MH - Humans
MH - Immunoglobulin G/blood
MH - Infant
MH - Malaria Vaccines/*immunology
MH - Malaria, Falciparum/epidemiology/*prevention & control/
transmission
MH - Merozoite Surface Protein 1/*immunology
MH - Middle Aged
MH - Peru/epidemiology
MH - Plasmodium falciparum/*immunology
MH - Prevalence
MH - Seroepidemiologic Studies
PMC - PMC2557017
EDAT- 2008/09/11 09:00
MHDA- 2008/10/25 09:00
CRDT- 2008/09/11 09:00
PHST- 2008/03/10 00:00 [received]
PHST- 2008/09/09 00:00 [accepted]
PHST- 2008/09/11 09:00 [pubmed]
PHST- 2008/10/25 09:00 [medline]
PHST- 2008/09/11 09:00 [entrez]
AID - 1475-2875-7-173 [pii]
AID - 10.1186/1475-2875-7-173 [doi]
PST - epublish
SO - Malar J. 2008 Sep 9;7:173. doi: 10.1186/1475-2875-7-173.

PMID- 17961284
OWN - NLM
STAT- MEDLINE
DCOM- 20080421
LR - 20191210
IS - 1469-8161 (Electronic)
IS - 0031-1820 (Linking)
VI - 135
IP - 3
DP - 2008 Mar
TI - Evaluation of an in vitro and in vivo model for experimental
infection
      with Leishmania (Viannia) braziliensis and L. (V.) peruviana.
PG - 319-26
AB - Leishmania (Viannia) braziliensis and L. (V.) peruviana are
two parasite
      species characterized by a very different pathogenicity in

humans despite
      a high genetic similarity. We hypothesized previously that L. (V.)
      peruviana would descend from L. (V.) braziliensis and would have acquired
      its 'peruviana' character during the southward colonization and
      adaptation of the transmission cycle in the Peruvian Andes. In order to
      have a first appreciation of the differences in virulence between both
      species, we evaluated an in vitro and in vivo model for experimental
      infection. A procedure was adapted to enrich culture forms in infective
      stages and the purified metacyclics were used to infect macrophage cell
      lines and golden hamsters. The models were tested with 2 representative
      strains of L. (V.) braziliensis from cutaneous and mucosal origin
      respectively and 2 representative strains of L. (V.) peruviana from
      Northern and Southern Peru respectively. Our models were reproducible and
      sensitive enough to detect phenotypic differences among strains. We
      showed in vitro as well as in vivo that the L. (V.) braziliensis was more
      infective than L. (V.) peruviana. Furthermore, we found that in vitro
      infectivity patterns of the 4 strains analysed, were in agreement with
      the geographical structuring of parasite populations demonstrated in our
      previous studies. Further work is needed to confirm our results with more
      strains of different geographical origin and their specific clinical
      outcome. However, our data open new perspectives for understanding the
      process of speciation in Leishmania and its implications in terms of
      pathogenicity.
FAU - Gamboa, D
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, A.P. 4314, Lima 100, Peru.
FAU - Torres, K
AU - Torres K
FAU - De Doncker, S
AU - De Doncker S
FAU - Zimic, M

AU - Zimic M
FAU - Arevalo, J
AU - Arevalo J
FAU - Dujardin, J-C
AU - Dujardin JC
LA - eng
PT - Comparative Study
PT - Evaluation Study
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20071026
PL - England
TA - Parasitology
JT - Parasitology
JID - 0401121
SB - IM
MH - Adaptation, Biological
MH - Animals
MH - Cell Line
MH - Cricetinae
MH - *Disease Models, Animal
MH - Hydrogen-Ion Concentration
MH - Leishmania braziliensis/genetics/*pathogenicity
MH - Leishmaniasis, Cutaneous/*parasitology
MH - Macrophages/*parasitology
MH - Male
MH - *Mesocricetus
MH - Mice
MH - Peru
MH - Phenotype
MH - Random Allocation
MH - Species Specificity
MH - Time Factors
MH - Virulence
EDAT- 2007/10/27 09:00
MHDA- 2008/04/22 09:00
CRDT- 2007/10/27 09:00
PHST- 2007/10/27 09:00 [pubmed]
PHST- 2008/04/22 09:00 [medline]
PHST- 2007/10/27 09:00 [entrez]
AID - S0031182007003848 [pii]
AID - 10.1017/S0031182007003848 [doi]
PST - ppublish
SO - Parasitology. 2008 Mar;135(3):319-26. doi: 10.1017/
S0031182007003848.
      Epub 2007 Oct 26.

PMID- 17897481
OWN - NLM
STAT- MEDLINE
DCOM- 20081105
LR - 20151119
IS - 0031-1820 (Print)
IS - 0031-1820 (Linking)

VI - 134
IP - Pt 12
DP - 2007 Nov
TI - Putative markers of infective life stages in Leishmania (Viannia)
      braziliensis.
PG - 1689-98
AB - Gene expression is known to vary significantly during the Leishmania
      life-cycle. Its monitoring might allow identification of molecular
      changes associated with the infective stages (metacyclics and
      amastigotes) and contribute to the understanding of the complex host-
      parasite relationships. So far, very few studies have been done on
      Leishmania (Viannia) braziliensis, one of the most pathogenic species.
      Such studies require, first of all, reference molecular markers. In the
      present work, we applied differential display analysis (DD analysis) in
      order to identify transcripts that might be (i) candidate markers of
      metacyclics and intracellular amastigotes of L. (V.) braziliensis or (ii)
      potential controls, i.e. constitutively expressed. In total, 48 DNA
      fragments gave reliable sequencing data, 29 of them being potential
      markers of infective stages and 12 potential controls. Eight sequences
      could be identified with reported genes. Validation of the results of DD
      analysis was done for 4 genes (2 differentially expressed and 2 controls)
      by quantitative real-time PCR. The infective insect stage-specific
      protein (meta 1) was more expressed in metacyclic-enriched preparations.
      The oligopeptidase b showed a higher expression in amastigotes. Two
      genes, glucose-6-phosphate dehydrogenase and a serine/threonine protein
      kinase, were found to be similarly expressed in the different biological
      samples.
FAU - Gamboa, D
AU - Gamboa D
AD - Instituto de Medicina Tropical Alexander von Humboldt, Universidad
      Peruana Cayetano Heredia, A.P. 4314, Lima 100, Peru.
FAU - Van Eys, G
AU - Van Eys G

FAU - Victoir, K
AU - Victoir K
FAU - Torres, K
AU - Torres K
FAU - Adaui, V
AU - Adaui V
FAU - Arevalo, J
AU - Arevalo J
FAU - Dujardin, J-C
AU - Dujardin JC
LA - eng
SI - GENBANK/AM420310
SI - GENBANK/AM420311
SI - GENBANK/AM420312
SI - GENBANK/AM420313
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
DEP - 20070926
PL - England
TA - Parasitology
JT - Parasitology
JID - 0401121
RN - 0 (Biomarkers)
SB - IM
MH - Animals
MH - Base Sequence
MH - Biomarkers/metabolism
MH - Gene Expression Profiling
MH - *Gene Expression Regulation
MH - Genes, Protozoan/*genetics
MH - Humans
MH - Leishmania braziliensis/*genetics/*metabolism
MH - Leishmaniasis, Cutaneous/*parasitology
MH - Molecular Sequence Data
MH - Reproducibility of Results
MH - Reverse Transcriptase Polymerase Chain Reaction
EDAT- 2007/09/28 09:00
MHDA- 2008/11/06 09:00
CRDT- 2007/09/28 09:00
PHST- 2007/09/28 09:00 [pubmed]
PHST- 2008/11/06 09:00 [medline]
PHST- 2007/09/28 09:00 [entrez]
AID - S003118200700306X [pii]
AID - 10.1017/S003118200700306X [doi]
PST - ppublish
SO - Parasitology. 2007 Nov;134(Pt 12):1689-98. doi:
      10.1017/S003118200700306X. Epub 2007 Sep 26.

PMID- 17971864
OWN - NLM
STAT- MEDLINE
DCOM- 20080715
LR - 20211020
IS - 1932-6203 (Electronic)

IS - 1932-6203 (Linking)
VI - 2
IP - 10
DP - 2007 Oct 31
TI - A randomised controlled trial to assess the efficacy of
      dihydroartemisinin-piperaquine for the treatment of
uncomplicated
      falciparum malaria in Peru.
PG - e1101
AB - BACKGROUND: Multi-drug resistant falciparum malaria is an
important
      health problem in the Peruvian Amazon region. We carried out a
randomised
      open label clinical trial comparing mefloquine-artesunate, the
current
      first line treatment in this region, with dihydroartemisinin-
piperaquine.
      METHODS AND FINDINGS: Between July 2003 and July 2005, 522
patients with
      P. falciparum uncomplicated malaria were recruited, randomized
(260 with
      mefloquine-artesunate and 262 with dihydroartemisinin-
piperaquine),
      treated and followed up for 63 days. PCR-adjusted adequate
clinical and
      parasitological response, estimated by Kaplan Meier survival
and Per
      Protocol analysis, was extremely high for both drugs (99.6%
for
      mefloquine-artesunate and 98.4% and for dihydroartemisinin-
piperaquine)
      (RR: 0.99, 95%CI [0.97-1.01], Fisher Exact p = 0.21). All
recrudescences
      were late parasitological failures. Overall, gametocytes were
cleared
      faster in the mefloquine-artesunate group (28 vs 35 days) and
new
      gametocytes tended to appear more frequently in patients
treated with
      dihydroartemisinin-piperaquine (day 7: 8 (3.6%) vs 2 (0.9%),
RR: 3.84,
      95%CI [0.82-17.87]). Adverse events such as anxiety and
insomnia were
      significantly more frequent in the mefloquine-artesunate
group, both in
      adults and children. CONCLUSION: Dihydroartemisinin-
piperaquine is as
      effective as mefloquine-artesunate in treating uncomplicated
P.
      falciparum malaria but it is better tolerated and more
affordable than
      mefloquine-artesunate (US$1.0 versus US$18.65 on the local
market).
      Therefore, it should be considered as a potential candidate

for the first
      line treatment of P. falciparum malaria in Peru. TRIAL
REGISTRATION:
      ClinicalTrials.gov NCT00373607.
FAU - Grande, Tanilu
AU - Grande T
AD - Institute of Ttropical Medicine-Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru.
FAU - Bernasconi, Andrea
AU - Bernasconi A
FAU - Erhart, Annette
AU - Erhart A
FAU - Gamboa, Dioni
AU - Gamboa D
FAU - Casapia, Martin
AU - Casapia M
FAU - Delgado, Christopher
AU - Delgado C
FAU - Torres, Kathy
AU - Torres K
FAU - Fanello, Caterina
AU - Fanello C
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
FAU - D'Alessandro, Umberto
AU - D'Alessandro U
LA - eng
SI - ClinicalTrials.gov/NCT00373607
PT - Journal Article
PT - Randomized Controlled Trial
PT - Research Support, Non-U.S. Gov't
DEP - 20071031
PL - United States
TA - PLoS One
JT - PloS one
JID - 101285081
RN - 0 (Antimalarials)
RN - 0 (Artemisinins)
RN - 0 (Quinolines)
RN - 0 (Sesquiterpenes)
RN - 60W3249T9M (Artesunate)
RN - 6A9O50735X (artenimol)
RN - A0HV2Q956Y (piperaquine)
RN - TML814419R (Mefloquine)
SB - IM
MH - Adolescent
MH - Adult
MH - Antimalarials/*pharmacology
MH - Artemisinins/*administration & dosage
MH - Artesunate
MH - Child
MH - Child, Preschool
MH - Female

MH - Humans
MH - Malaria, Falciparum/*drug therapy
MH - Male
MH - Mefloquine/administration & dosage
MH - Middle Aged
MH - Peru
MH - Quinolines/*administration & dosage
MH - Sesquiterpenes/*administration & dosage
PMC - PMC2040506
EDAT- 2007/11/01 09:00
MHDA- 2008/07/17 09:00
CRDT- 2007/11/01 09:00
PHST- 2007/06/25 00:00 [received]
PHST- 2007/10/03 00:00 [accepted]
PHST- 2007/11/01 09:00 [pubmed]
PHST- 2008/07/17 09:00 [medline]
PHST- 2007/11/01 09:00 [entrez]
AID - 10.1371/journal.pone.0001101 [doi]
PST - epublish
SO - PLoS One. 2007 Oct 31;2(10):e1101. doi: 10.1371/
journal.pone.0001101.

PMID- 17710315
OWN - NLM
STAT- MEDLINE
DCOM- 20080417
LR - 20190606
IS - 0074-0276 (Print)
IS - 0074-0276 (Linking)
VI - 102
IP - 5
DP - 2007 Aug
TI - Isolation and molecular identification of Leishmania (Viannia)
peruviana
      from naturally infected Lutzomyia peruensis (Diptera:
Psychodidae) in the
      Peruvian Andes.
PG - 655-8
AB - Leishmania (Viannia) peruviana was isolated from 1/75
Lutzomyia peruensis
      captured during May 2006 in an endemic cutaneous leishmaniasis
region of
      the Peruvian Andes (Chaute, Huarochiri, Lima, Peru). Sand fly
gut with
      promastigotes was inoculated into a hamster and the remaining
body was
      fixed in ethanol. L. (Viannia) sp. was determined by
polymerase chain
      reaction (PCR), and Leishmania species through molecular
genotyping by
      PCR-restriction fragment length polymorphism analyses
targeting the genes
      cpb and hsp70, resulting L. (V.) peruviana. The infected sand
fly

      appeared 15 days after the rains finished, time expected and
useful real
      time data for interventions when transmission is occurring.
FAU - Perez, J Enrique
AU - Perez JE
AD - Instituto de Medicina Tropical Alexander von Humboldt,
Universidad
      Peruana Cayetano Heredia, Lima, Peru. kike@upch.edu.pe
FAU - Veland, Nicolas
AU - Veland N
FAU - Espinosa, Diego
AU - Espinosa D
FAU - Torres, Katherine
AU - Torres K
FAU - Ogusuku, Elena
AU - Ogusuku E
FAU - Llanos-Cuentas, Alejandro
AU - Llanos-Cuentas A
FAU - Gamboa, Dionicia
AU - Gamboa D
FAU - Arevalo, Jorge
AU - Arevalo J
LA - eng
PT - Journal Article
PL - Brazil
TA - Mem Inst Oswaldo Cruz
JT - Memorias do Instituto Oswaldo Cruz
JID - 7502619
RN - 0 (DNA, Protozoan)
SB - IM
MH - Animals
MH - Cricetinae
MH - DNA, Protozoan/*analysis
MH - Female
MH - Genotype
MH - Leishmania braziliensis/genetics/*isolation & purification
MH - Male
MH - Peru
MH - Polymerase Chain Reaction
MH - Polymorphism, Restriction Fragment Length
MH - Psychodidae/*parasitology
EDAT- 2007/08/22 09:00
MHDA- 2008/04/18 09:00
CRDT- 2007/08/22 09:00
PHST- 2007/02/13 00:00 [received]
PHST- 2007/07/02 00:00 [accepted]
PHST- 2007/08/22 09:00 [pubmed]
PHST- 2008/04/18 09:00 [medline]
PHST- 2007/08/22 09:00 [entrez]
AID - S0074-02762007000500020 [pii]
AID - 10.1590/s0074-02762007005000077 [doi]
PST - ppublish
SO - Mem Inst Oswaldo Cruz. 2007 Aug;102(5):655-8. doi:
      10.1590/s0074-02762007005000077.

PMID- 15975146
OWN - NLM
STAT- MEDLINE
DCOM- 20061026
LR - 20181113
IS - 1475-2875 (Electronic)
IS - 1475-2875 (Linking)
VI - 4
DP - 2005 Jun 23
TI - Clustered local transmission and asymptomatic Plasmodium falciparum and
      Plasmodium vivax malaria infections in a recently emerged, hypoendemic
      Peruvian Amazon community.
PG - 27
AB - BACKGROUND: There is a low incidence of malaria in Iquitos, Peru, suburbs
      detected by passive case-detection. This low incidence might be
      attributable to infections clustered in some households/ regions and/or
      undetected asymptomatic infections. METHODS: Passive case-detection (PCD)
      during the malaria season (February-July) and an active case-detection
      (ACD) community-wide survey (March) surveyed 1,907 persons. Each month,
      April-July, 100-metre at-risk zones were defined by location of
      Plasmodium falciparum infections in the previous month. Longitudinal ACD
      and PCD (ACP+PCD) occurred within at-risk zones, where 137 houses (573
      persons) were randomly selected as sentinels, each with one month of
      weekly active sampling. Entomological captures were conducted in the
      sentinel houses. RESULTS: The PCD incidence was 0.03 P. falciparum and
      0.22 Plasmodium vivax infections/person/malaria-season. However, the
      ACD+PCD prevalence was 0.13 and 0.39, respectively. One explanation for
      this 4.33 and 1.77-fold increase, respectively, was infection clustering
      within at-risk zones and contiguous households. Clustering makes PCD,
      generalized to the entire population, artificially low. Another
      attributable-factor was that only 41% and 24% of the P. falciparum and P.
      vivax infections were associated with fever and 80% of the asymptomatic

      infections had low-density or absent parasitaemias the
following week.
      After accounting for asymptomatic infections, a 2.6-fold
increase in
      ACD+PCD versus PCD was attributable to clustered transmission
in at-risk
      zones. CONCLUSION: Even in low transmission, there are
frequent highly-
      clustered asymptomatic infections, making PCD an inadequate
measure of
      incidence. These findings support a strategy of concentrating
ACD and
      insecticide campaigns in houses adjacent to houses were
malaria was
      detected one month prior.
FAU - Branch, OraLee
AU - Branch O
AD - Department of Medicine, Geographic Medicine, University of
Alabama at
      Birmingham, Bevill Research Building BBRB-556, Birmingham
35294-2170,
      USA. obranch@uab.edu
FAU - Casapia, W Martin
AU - Casapia WM
FAU - Gamboa, Dionicia V
AU - Gamboa DV
FAU - Hernandez, Jean N
AU - Hernandez JN
FAU - Alava, Freddy F
AU - Alava FF
FAU - Roncal, Norma
AU - Roncal N
FAU - Alvarez, Eugenia
AU - Alvarez E
FAU - Perez, Enrique J
AU - Perez EJ
FAU - Gotuzzo, Eduardo
AU - Gotuzzo E
LA - eng
GR - R01 AI064831/AI/NIAID NIH HHS/United States
GR - R03 TW008064/TW/FIC NIH HHS/United States
PT - Journal Article
PT - Research Support, N.I.H., Extramural
PT - Research Support, U.S. Gov't, P.H.S.
DEP - 20050623
PL - England
TA - Malar J
JT - Malaria journal
JID - 101139802
RN - 0 (Antimalarials)
SB - IM
MH - Adolescent
MH - Adult
MH - Aged

MH - Aged, 80 and over
MH - Animals
MH - Anopheles/parasitology
MH - Antimalarials/therapeutic use
MH - Child
MH - Child, Preschool
MH - Female
MH - Humans
MH - Incidence
MH - Infant
MH - Malaria, Falciparum/diagnosis/drug therapy/*epidemiology/
*transmission
MH - Malaria, Vivax/*diagnosis/drug therapy/*epidemiology/
*transmission
MH - Male
MH - Middle Aged
MH - Peru/epidemiology
MH - Plasmodium falciparum/isolation & purification
MH - Plasmodium vivax/isolation & purification
MH - Prevalence
MH - Suburban Population
MH - Time Factors
PMC - PMC1190209
EDAT- 2005/06/25 09:00
MHDA- 2006/10/27 09:00
CRDT- 2005/06/25 09:00
PHST- 2005/03/13 00:00 [received]
PHST- 2005/06/23 00:00 [accepted]
PHST- 2005/06/25 09:00 [pubmed]
PHST- 2006/10/27 09:00 [medline]
PHST- 2005/06/25 09:00 [entrez]
AID - 1475-2875-4-27 [pii]
AID - 10.1186/1475-2875-4-27 [doi]
PST - epublish
SO - Malar J. 2005 Jun 23;4:27. doi: 10.1186/1475-2875-4-27.

PMID- 10904411
OWN - NLM
STAT- MEDLINE
DCOM- 20000829
LR - 20190605
IS - 0074-0276 (Print)
IS - 0074-0276 (Linking)
VI - 95
IP - 4
DP - 2000 Jul-Aug
TI - Genomic rearrangements in trypanosomatids: an alternative to
the "one
      gene" evolutionary hypotheses?
PG - 527-34
AB - Most molecular trees of trypanosomatids are based on point
mutations
      within DNA sequences. In contrast, there are very few
evolutionary

studies considering DNA (re) arrangement as genetic characters. Waiting for the completion of the various parasite genome projects, first information may already be obtained from chromosome size-polymorphism, using the appropriate algorithms for data processing. Three illustrative models are presented here. First, the case of Leishmania (Viannia) braziliensis/L. (V.) peruviana is described. Thanks to a fast evolution rate (due essentially to amplification/deletion of tandemly repeated genes), molecular karyotyping seems particularly appropriate for studying recent evolutionary divergence, including eco-geographical diversification. Secondly, karyotype evolution is considered at the level of whole genus Leishmania. Despite the fast chromosome evolution rate, there is qualitative congruence with MLEE- and RAPD-based evolutionary hypotheses. Significant differences may be observed between major lineages, likely corresponding to major and less frequent rearrangements (fusion/fission, translocation). Thirdly, comparison is made with Trypanosoma cruzi. Again congruence is observed with other hypotheses and major lineages are delineated by significant chromosome rearrangements. The level of karyotype polymorphism within that "species" is similar to the one observed in "genus" Leishmania. The relativity of the species concept among these two groups of parasites is discussed.
FAU - Dujardin, J C
AU - Dujardin JC
AD - Prins Leopold Instituut voor Tropische Geneeskunde, Belgium. jcdujard@itg.be
FAU - Henriksson, J
AU - Henriksson J
FAU - Victoir, K
AU - Victoir K
FAU - Brisse, S
AU - Brisse S
FAU - Gamboa, D
AU - Gamboa D
FAU - Arevalo, J
AU - Arevalo J
FAU - Le Ray, D
AU - Le Ray D

LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
PL - Brazil
TA - Mem Inst Oswaldo Cruz
JT - Memorias do Instituto Oswaldo Cruz
JID - 7502619
SB - IM
MH - Animals
MH - *Evolution, Molecular
MH - *Gene Rearrangement
MH - *Genome, Protozoan
MH - Karyotyping
MH - Leishmania braziliensis/cytology/genetics
MH - Polymorphism, Genetic
MH - Trypanosoma cruzi/cytology/genetics
MH - Trypanosomatina/*genetics
EDAT- 2000/07/25 11:00
MHDA- 2000/09/02 11:01
CRDT- 2000/07/25 11:00
PHST- 2000/07/25 11:00 [pubmed]
PHST- 2000/09/02 11:01 [medline]
PHST- 2000/07/25 11:00 [entrez]
AID - S0074-02762000000400015 [pii]
AID - 10.1590/s0074-02762000000400015 [doi]
PST - ppublish
SO - Mem Inst Oswaldo Cruz. 2000 Jul-Aug;95(4):527-34. doi:
      10.1590/s0074-02762000000400015.