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Prevención antimalárica:

Decisiones simples y lógicas

Dr. Israel Molina

Unidad de Medicina Tropical i Salut Internacional

Hospital Universitari Vall Hebron.

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Conflictos de interés

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Información

Métodos Barrera

Quimio profilaxis

Autotratamiento

Vall d'Hebron Hospital

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Factores individuales

Itinerario

Disponibilidad

Duración

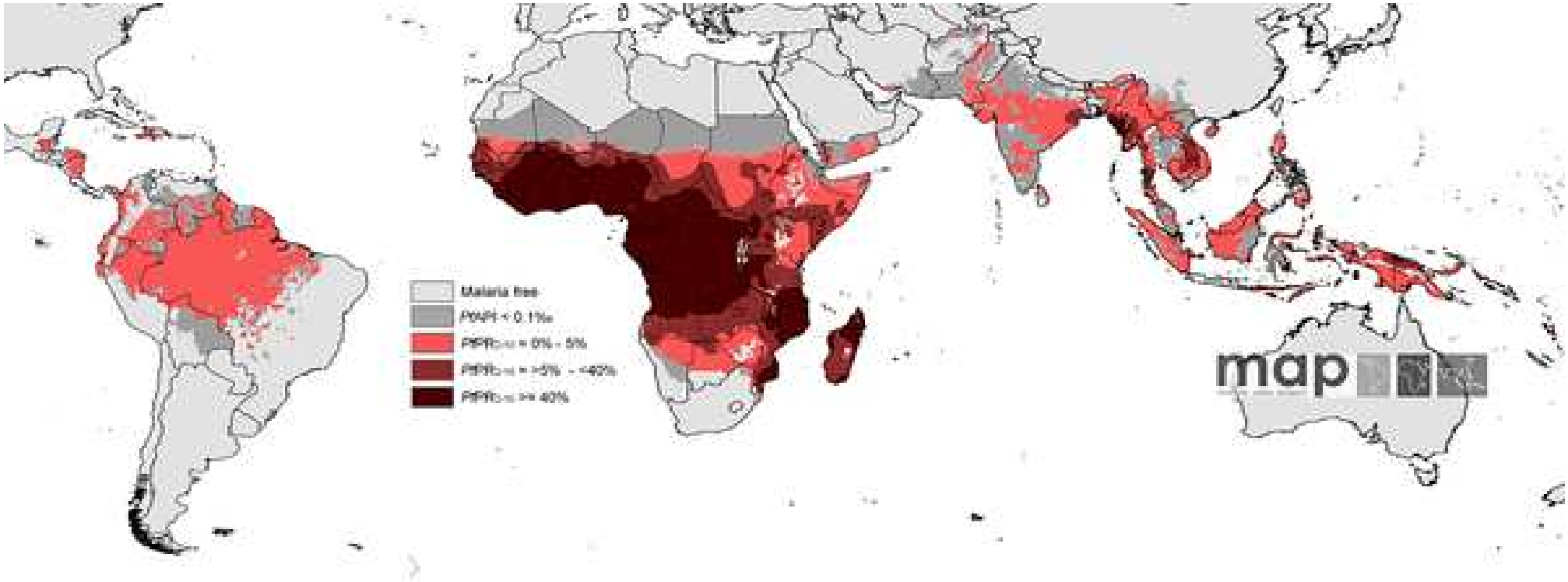
tolerancia

Tipo de viaje

cumplimiento

Hospedaje

Exp previas



Hay SI, Guerra CA, Gething PW, Patil AP, Tatem AJ, et al. (2009) A World Malaria Map: Plasmodium falciparum Endemicity in 2007. PLOS Medicine 6(3): e1000048. https://doi.org/10.1371/journal.pmed.1000048
http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000048

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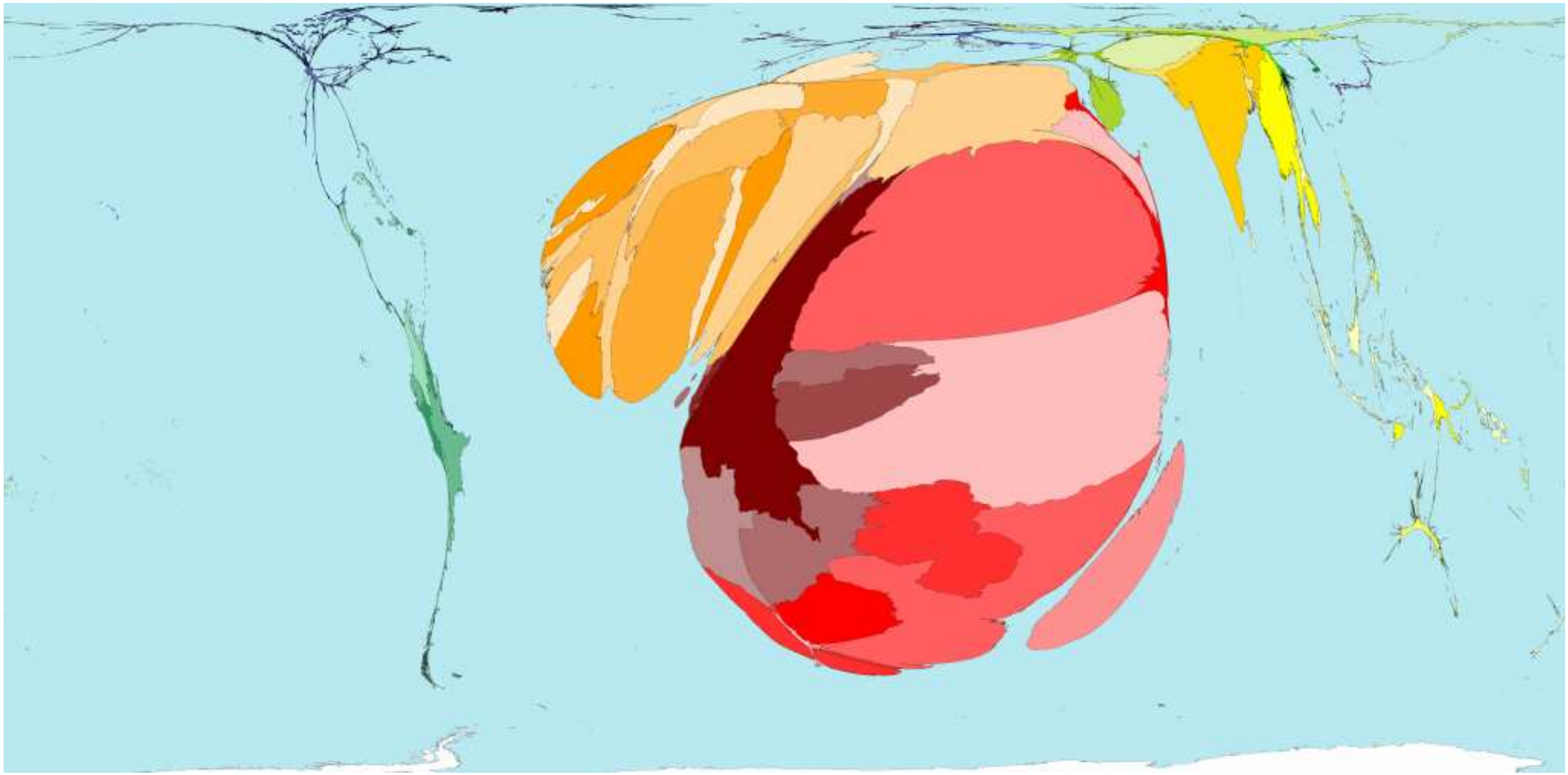

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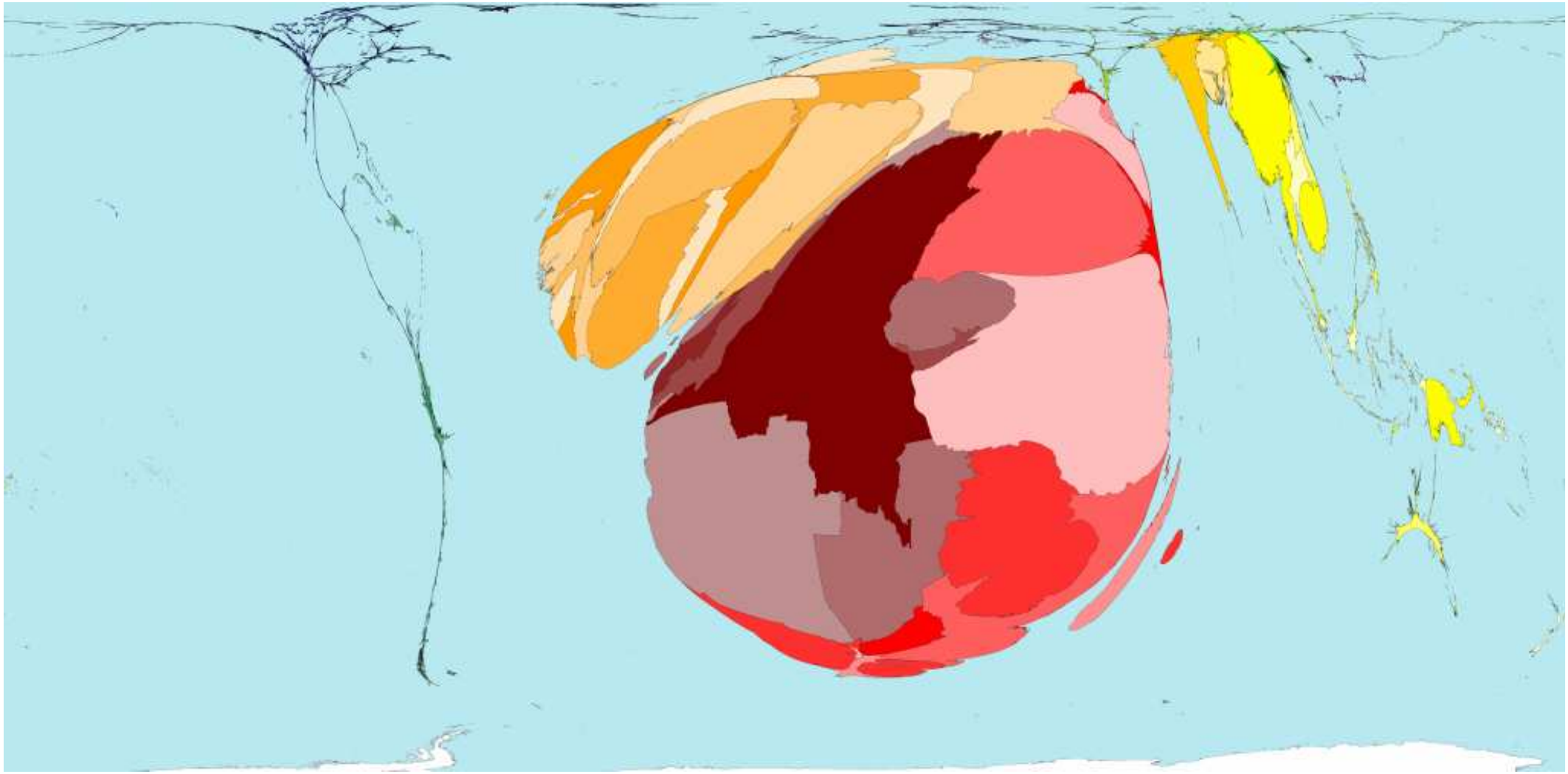

Repelentes

- DEET 30-35%
- Picaridina
- Otros

Insecticidas residuales

- Permetrina
  - 0.5% ropa
  - 13.3% mosquiteras

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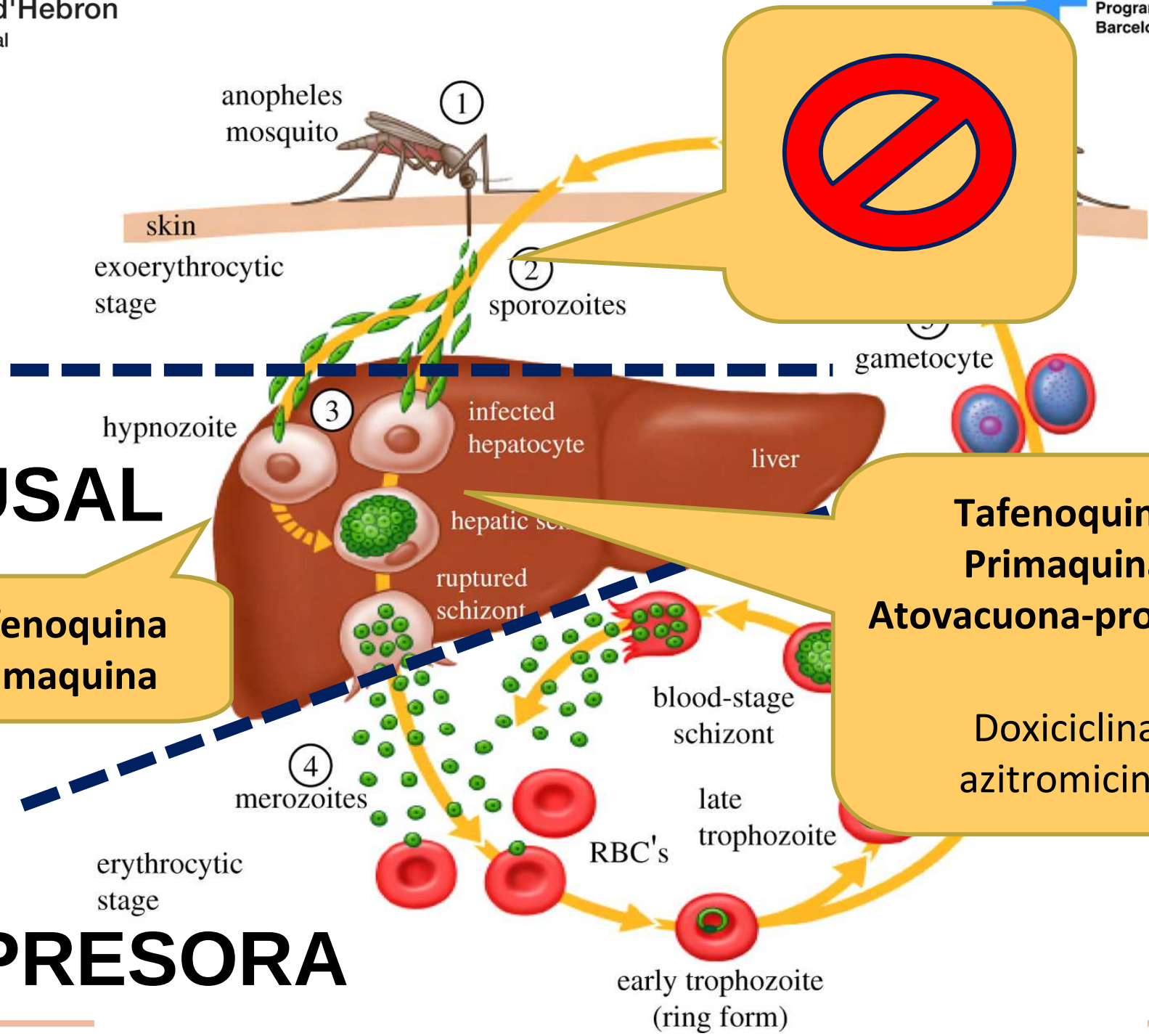

CAUSAL

Tafenoquina
Primaquina

Tafenoquina
Primaquina
Atovacuona-proguanil

Doxiciclina
azitromicina

SUPRESORA

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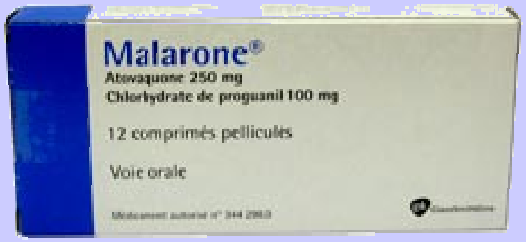
¿Qué profilaxis es la mejor?



ATOVACUONA PROGUANIL
Actividad causal (suspender una semana)
No hipnozoitos

DOXICICLINA
Multirresistencia
Larga duración?

MEFLOQUINA
Embarazo (2º y 3er trim)
Anticoncepción 3 mesos después, no interrupción
Interacción con vacunes bacterias vivas

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Am. J. Trop. Med. Hyg., 75(3), 2006, pp. 430–433

RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY OF MALARONE FOR MALARIA PROPHYLAXIS IN NON-IMMUNE COLOMBIAN SOLDIERS

TABLE 1

Compliance and efficacy

Group	Malarone	Placebo
Randomized [ITT] population	120	60
Prophylactic failure	9	19
Prophylactic efficacy all malaria	87%	
Withdrew consent or missed ≥ 3 doses	10	3
PP1 population	110	57
Prophylactic failure	0 *P. falciparum* 1 *P. vivax*	2 *P. falciparum* 15 *P. vivax*
Protective efficacy all malaria	97% (LL 95% CI = 74%)	
Protective efficacy *P. vivax* malaria*	97% (LL 95% CI = 69%)	
PP2 population†	97	46
Granada deployment		
Total number	47	19
Prophylactic failures	0 *P. falciparum* 0 *P. vivax*	1 *P. falciparum* 8 *P. vivax*
Failure rate	0/47 = 0%	9/19 = 47%
Uraba Deployment		
Total number	50	27
Prophylactic failures	0 *P. falciparum* 0 *P. vivax*	1 *P. falciparum* 3 *P. vivax*
Failure rate	0/50 = 0%	4/27 = 15%
Total failure rate	0/97 = 0%	13/46 = 28%
Protective efficacy all malaria	100% (LL 95% CI = 63%)	
Protective efficacy *P. vivax* malaria*	100% (LL 95% CI = 58%)	

* Protective efficacy for *P. vivax* malaria is based on the number of exposed individuals minus the subjects who were infected with *P. falciparum* and therefore not available to be infected with *P. vivax*.

† The PP2 population excludes the 13 Malarone subjects and the 11 placebo subjects in whom blood analysis showed that correct treatment was not taken.

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Randomized, Placebo-Controlled Trial of Atovaquone/Proguanil for the Prevention of *Plasmodium falciparum* or *Plasmodium vivax* Malaria among Migrants to Papua, Indonesia

Judith Ling,[1,5,a] J. Kevin Baird,[1] David J. Fryauff,[3] Priyanto Sismadi,[2] Michael J. Bangs,[1] Mark Lacy,[1] Mazie J. Barcus,[1] Robert Gramzinski,[1] Jason D. Maguire,[1] Marti Kumusumangsih,[3] Gerri B. Miller,[4] Trevor R. Jones,[3] Jeffrey D. Chulay,[4,a] Stephen L. Hoffman,[3,a] and the Naval Medical Research Unit 2 Clinical Trial Team[b]

[1]Naval Medical Research Unit 2 and [2]Indonesian Ministry of Health, Jakarta, Indonesia; [3]Naval Medical Research Center, Silver Spring, Maryland; [4]GlaxoSmithKline, Research Triangle Park, North Carolina; and [5]Children's National Medical Center and George Washington University, Washington, DC

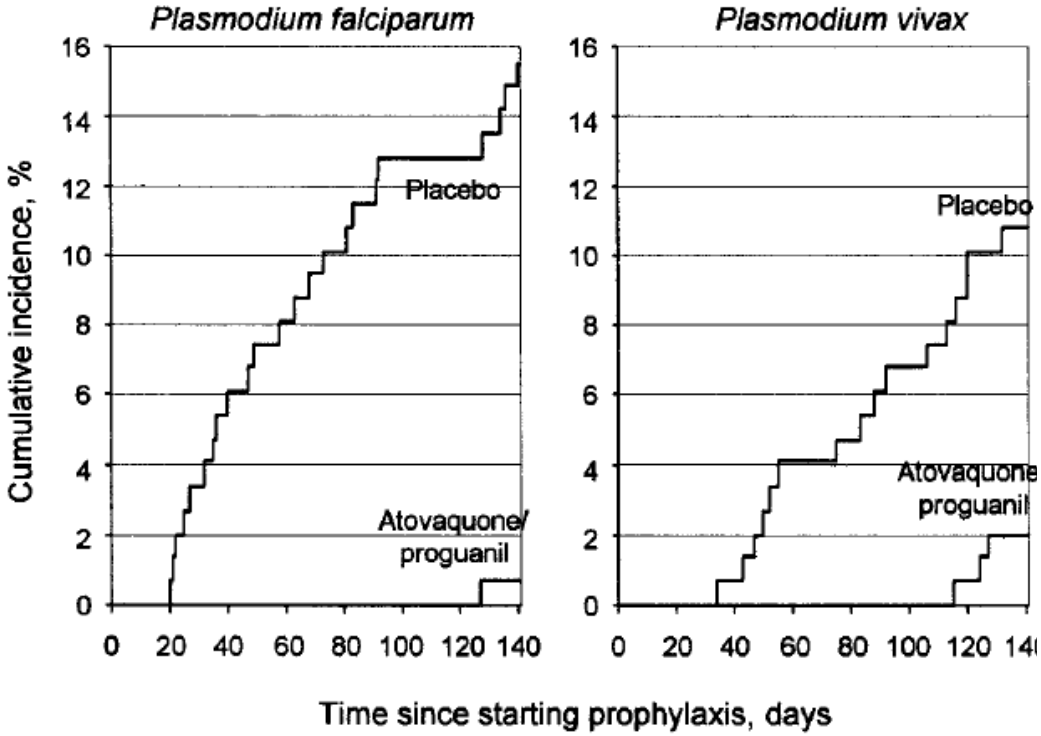

Table 2. Efficacy of atovaquone/proguanil for the prevention of *Plasmodium falciparum* and *Plasmodium vivax* parasitemia.

Variable	Placebo group (n = 149)	Atovaquone/ proguanil group (n = 150)	Efficacy,[a] % (95% CI)	P
Person-weeks	2354	2723		
Incident cases				
P. falciparum	23	1	96 (72–99)	<.001
P. vivax	16	3	84 (44–95)	<.001
Either species	37	3	93 (77–98)	<.001

[a] Efficacy rate = 100 × [1 − (incidence density in atovaquone/proguanil group/incidence density in placebo group)].

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Mefloquine Compared with Doxycycline for the Prophylaxis of Malaria in Indonesian Soldiers

A Randomized, Double-Blind, Placebo-Controlled Trial

Colin Ohrt, MD; Thomas L. Richie, MD, PhD; Hendra Widjaja, MD; G. Dennis Shanks, MD; Januar Fitriadi, MD; David J. Fryauff, ScD; Jürg Handschin, PhD; Douglas Tang, PhD; Bernardus Sandjaja, MD; Emiliana Tjitra, MD, MSc; Lukas Hadiarso, MD; George Watt, MD, DTM&H; and F. Stephen Wignall, MD

Study Group	Participants	*Plasmodium* Species Causing Malaria	Cases of Malaria
	n		*n*
Mefloquine	68	*Plasmodium falciparum*	0
		P. vivax	0
		All species	0
Doxycycline	67	*P. falciparum*	1
		P. vivax	0
		All species	1
Placebo	69	*P. falciparum*	30
		P. vivax	23
		All species	53

	Doxi	Meflo	
NeuroPs	58	69	<0.05
NeuroPs+	5	7	NS

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Malaria Prophylaxis Using Azithromycin: A Double-Blind, Placebo-Controlled Trial in Irian Jaya, Indonesia

Walter R. J. Taylor, Thomas L. Richie, David J. Fryauff, Helena Picarima, Colin Ohrt, Douglas Tang, David Braitman, Gerald S. Murphy, Hendra Widjaja, Emiliana Tjitra, Asep Ganjar, Trevor R. Jones, Hasan Basri, and Josh Berman

From the U.S. Naval Medical Research Unit Number 2, Jakarta, Indonesia; the Department of Tropical Medicine, Tulane University School of Public Health, New Orleans, Louisiana, the Division of Experimental Therapeutics and the Division of Biometrics, Walter Reed Army Institute of Research, Washington, D.C., and the U.S. Army Medical Materiel Development Activity, Fort Dietrick, Maryland, USA; and the Centre for Health Research and Development, National Institutes of Health, and the District Military Health Services, Jayapura, Irian Jaya, Indonesia

Table 2. Malaria incidence rates and prophylactic efficacies for azithromycin and doxycycline.

	Azithromycin (148, 38.88)*			Doxycyline (75, 22.15)*			Placebo (77, 11.83)*	
Malaria species	Cases	IR†	PE‡ (95% CI)	Cases	IR†	PE‡ (95% CI)	Cases	IR†
All malaria	28	0.72	84.7 (75.6–90.7)	3	0.13	97.1 (91.2–99.4)	56	4.73
P. falciparum	27	0.69	71.6 (50.3–83.8)	2	0.09	96.3 (85.4–99.6)	29	2.45
P. vivax	1	0.03	98.9 (93.1–99.9)	1	0.05	98.0 (88.0–99.9)	27	2.28

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Atovac… Malari… Results… …oquine for …e Travelers: …le-Blind Study

David Overbosc… Stephen Toovey… and the Malaro…

[1]Harbor Hospital an… [3]Institute for Tropica… Munich, Germany; [6]… [8]Greenford, United … Africa; and [11]GlaxoS…

…C. Kain,[9] Paul D. Clarke,[7] …oskell,[8] Jeffrey D. Chulay,[11,a]

…G&GD), Amsterdam, The Netherlands; …nfectious Diseases and Tropical Medicine, …STA), London, and GlaxoSmithKline, …Centre, Sunninghill, Republic of South

Table 2. Treatment-emergent adverse events attributed to the study drug.

Event	No. (%) of subjects with adverse events who received: Atovaquone-proguanil (n = 493)	Mefloquine (n = 483)	P
Any adverse event[a]	149 (30)	204 (42)	.001
Any neuropsychiatric event	69 (14)	139 (29)	.001
Strange or vivid dreams	33 (7)	66 (14)	.001
Insomnia	15 (3)	65 (13)	.001
Dizziness or vertigo	11 (2)	43 (9)	.001
Visual difficulties	8 (2)	16 (3)	.134
Anxiety	3 (<1)	18 (4)	.002
Depression	3 (<1)	17 (4)	.003
Any gastrointestinal event	77 (16)	94 (19)	.159
Diarrhea	37 (8)	34 (7)	.875
Nausea	15 (3)	40 (8)	.001
Abdominal pain	26 (5)	23 (5)	.826
Mouth ulcers	29 (6)	17 (4)	.112
Vomiting	7 (1)	9 (2)	.769
Headache	19 (4)	32 (7)	.040
Itching	12 (2)	15 (3)	.657

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Tolerability of malaria chemoprophylaxis in non-immune travellers to sub-Saharan Africa: multicentre, randomised, double blind, four arm study

Patricia Schlagenhauf, Alois Tschopp, Richard Johnson, Hans D Nothdurft, Bernhard Beck, Eli Schwartz, Markus Herold, Bjarne Krebs, Olivia Veit, Regina Allwinn, Robert Steffen

Table 1 Incidence of adverse events in antimalarial prophylaxis arms according to severity. Values are numbers (percentages, 95% confidence intervals) unless stated otherwise

Type of adverse event	Mefloquine group* (n=153)	Chloroquine and proguanil group (n=153)	Doxycycline group (n=153)	Atovaquone and proguanil (n=164)	P value
Severity of adverse event:					
Mild†	135 (88, 83 to 93)	131 (86, 80 to 91)	128 (84, 78 to 90)	134 (82, 75 to 88)	[illegible]
Moderate‡	64 (42, 34 to 50)	69 (45, 37 to 53)	51 (33, 26 to 41)	53 (32, 25 to 40)	0.048
Severe§	16 (11, 6 to 15)	19 (12, 7 to 18)	9 (6, 2 to 10)	11 (7, 2 to 11)	0.14
Withdrawals	6 (4, 1 to 8)	8 (5, 2 to 9)	5 (3, 0 to 6)	3 (2, 0 to 4)	0.42

*One participant had a transient ischaemic attack outside follow up; history of two episodes was not declared (mefloquine serum concentrations were negligible).
†Trivial but some discomfort noted.
‡Interferes with daily activity.
§Medical advice required.

Tolerability of malaria chemoprophylaxis in non-immune tra
do
Pat
Eli

Table 2 Proportion of participants in each antimalarial prophylaxis arm reporting adverse events, by type and severity, Values are numbers (percentages, 95% confidence intervals) unless stated otherwise

Type of adverse event	Mefloquine group (n=153)	Chloroquine and proguanil group (n=153)	Doxycycline group (n=153)	Atovaquone and proguanil group (n=164)	P value
Neuropsychological*:					
Severe	8 (5, to 9)	6 (4, 1 to 7)	1 (1, 0 to 2)	5 (3, 0 to 6)	0.139
Moderate	56 (37, 29 to 44)	46 (30, 23 to 37)	36 (24, 17 to 30)	32 (20, 13 to 26)	0.003
All events	118 (77, 70 to 84)	107 (70, 63 to 77)	105 (69, 61 to 76)	109 (67, 60 to 74)	0.187
Gastrointestinal†:					
Severe	6 (4, 1 to 7)	9 (6, to 10)	3 (2, 0 to 4)	5 (3, 0 to 6)	0.312
Moderate	24 (16, 10 to 22)	31 (20, 14 to 27)	14 (9, 5 to 14)	26 (16, 10 to 22)	0.058
All events	89 (58, 50 to 66)	93 (61, 53 to 69)	81 (53, 45 to 61)	88 (54, 46 to 61)	0.451
Skin‡:					
Severe	1 (1, 0 to 2)	2 (to 3)	3 (2, 0 to 4)	1 (1, 0 to 2)	0.635
Moderate	2 (1, 0 to 3)	12 (8, 4 to 12)	5 (3, 1 to 6)	4 (2, 0 to 5)	0.013
All events	36 (24, 17 to 30)	40 (26, 19 to 33)	36 (24, 17 to 30)	34 (21, 15 to 27)	0.730
Skin and vaginal§:					
Severe	2 (1, 0 to 3)	2 (1, 0 to 3)	4 (3, 0 to 5)	1 (1, 0 to 2)	0.509
Moderate	5 (3, 1 to 6)	13 (9, 4 to 13)	9 (6, 2 to 10)	4 (2, 0 to 5)	0.058
All events	45 (29, 22 to 37)	45 (29, 22 to 37)	42 (28, 20 to 35)	40 (24, 18 to 31)	0.717
Other:					
Severe	3 (2, 0 to 4)	5 (3, 0 to 6)	4 (3, 0 to 5)	2 (1, 0 to 3)	0.644
Moderate	12 (8, 4 to 12)	16 (11, 6 to 15)	12 (8, 4 to 12)	12 (7, 3 to 11)	0.748
All events	46 (30, 23 to 37)	47 (31, 23 to 38)	48 (31, 24 to 39)	36 (22, 16 to 28)	0.201

*Symptoms include headache, strange or vivid dreams, dizziness, anxiety, depression, sleeplessness, and visual disturbance.
†Nausea, diarrhoea, mouth ulcers.
‡Itching, abnormal reddening of skin.
§Itching, abnormal discharge.

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Am. J. Trop. Med. Hyg., 77(6), 2007, pp. 1010–1014

Malaria Chemoprophylaxis: What Do the Travelers Choose, and How Does Pretravel Consultation Influence Their Final Decision

Nicolas Senn,* Valérie D'Acremont, Pierre Landry, and Blaise Genton
Travel Clinic, Department of Ambulatory Care and Community Medicine, Switzerland; Swiss Tropical Institute, Basel, Switzerland

Name of antimalarial tablet	Level of protection	% Total of travelers experiencing adverse events	% of travelers who needed to consult a doctor about adverse events	Main serious adverse events
Lariam Mephaquine (generic)	90%	88%	11%	Anxiety, bad dreams, depression, dizziness, headache
Malarone	90%	81%	7%	Nausea, diarrhea, mouth ulcers
Supracycline (doxycycline)	90%	83%	6%	Vaginal thrush, sunburn

Am. J. Trop. Med. Hyg., 77(6), 2007, pp. 1010–1014

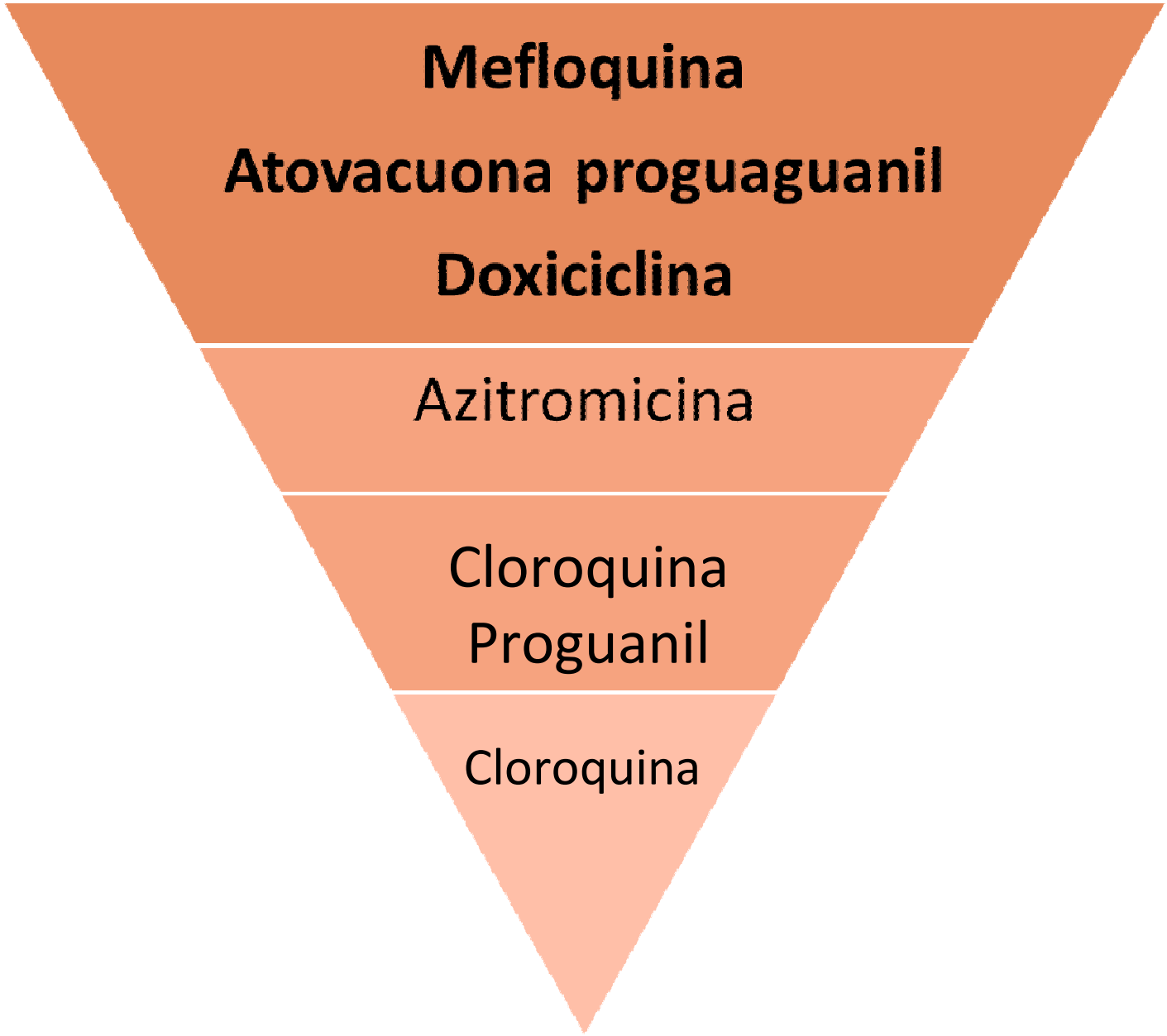
Malaria Chemoprophylaxis: What Do the Travelers Choose, and How Does Pretravel Consultation Influence Their Final Decision

TABLE 3

Antimalarial drugs chosen by the travelers before and after pretravel consultation (47% of travellers changed their mind after consultation, 14% because of medical contraindications)

	Choice before pretravel consultation (%)	Drug prescribed after pretravel consultation (%)
Mefloquine	44.7	50.2
Lariam	20.4	13.5
Mephaquine	24.3	36.6
Malarone	21.4	23.5
Doxycycline	18.5	18.9
Chloroquin/proguanil	0	0.9
Do not know	10.8	0
No prophylaxis	4.6	5.8
Others*	0	0.7

* Others = drugs already prescribed by another institution prior to the consultation (NGO, private practitioner, etc.).


Mefloquina
Atovacuona proguaguanil
Doxiciclina
Azitromicina
Cloroquina
Proguanil
Cloroquina

Poblaciones especiales

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Edad pediátrica

Cloroquina
Malarone >11 kg
Mefloquina >5 kg
Doxi > 8 años
Precaución con los repelentes

Embarazadas

Mefloquina y cloroquina
AtoP sin datos
Doxi contraindicado
Precaución con los repelentes
(1 caso de malformación)

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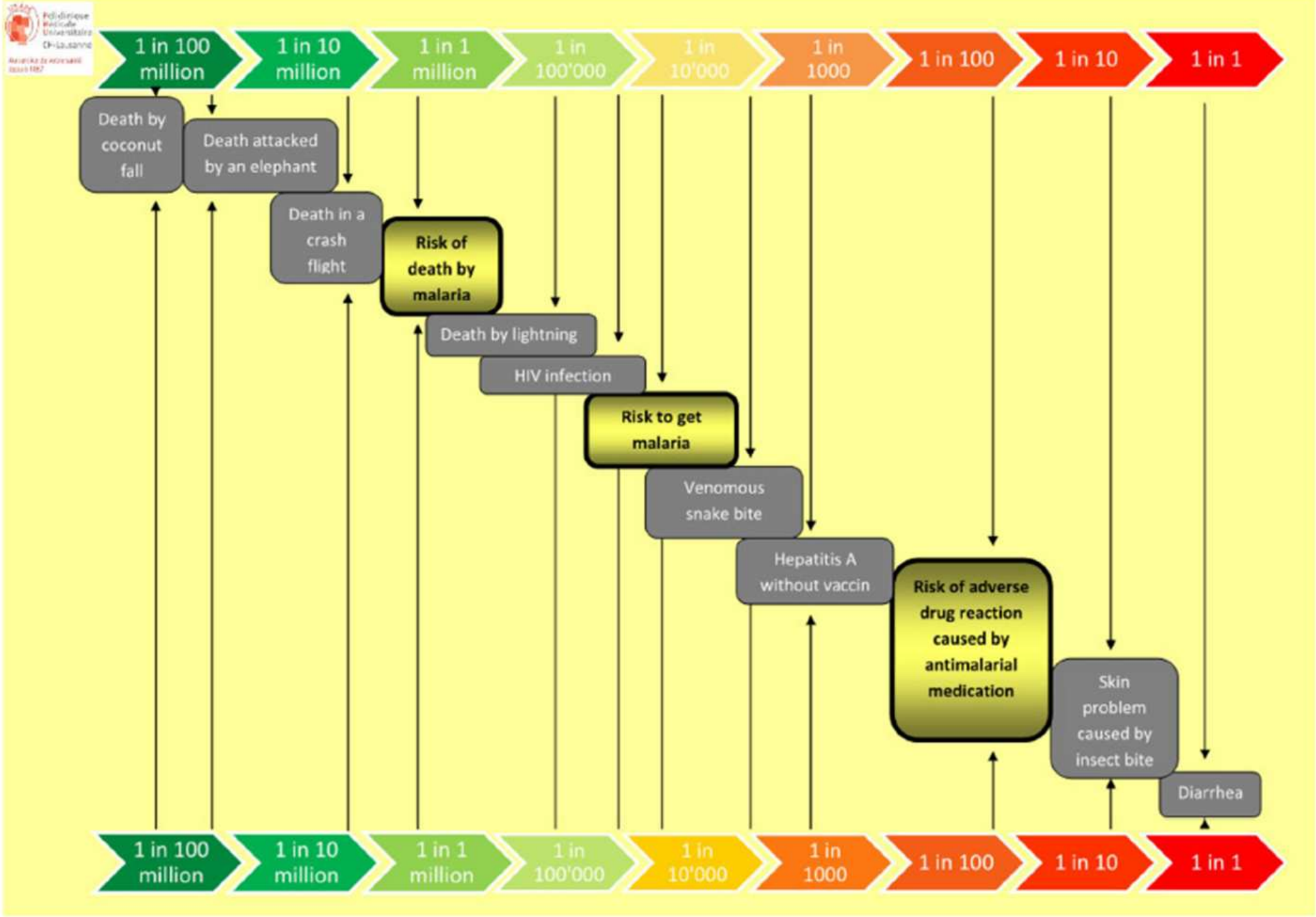
Situaciones especiales



Voumard et al. Malaria Journal (2015) 14:139

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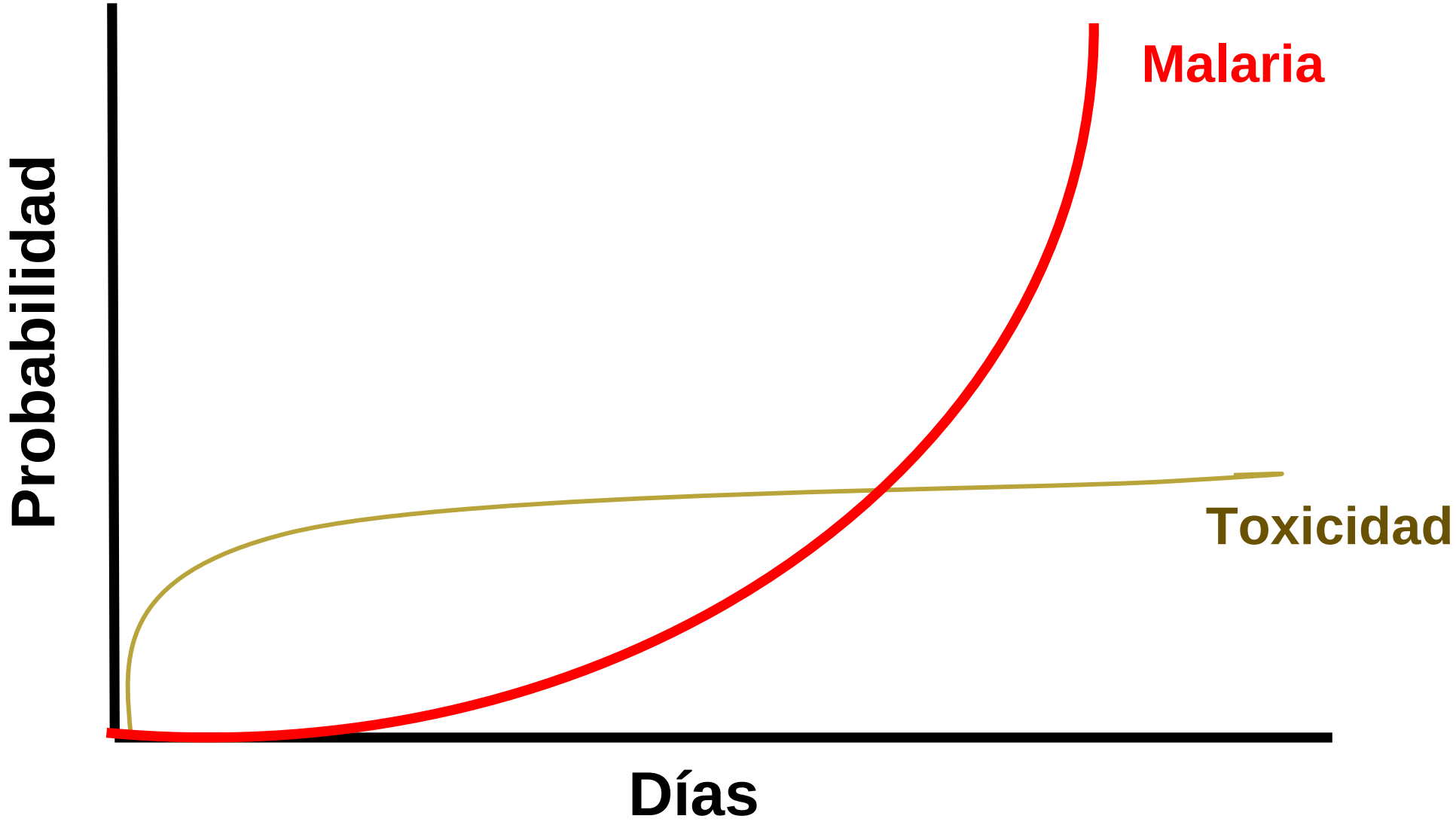
Viajes de bajo riesgo



Fuente propia!!

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Viajes de bajo riesgo

- Corta duración
- Endemicidad baja

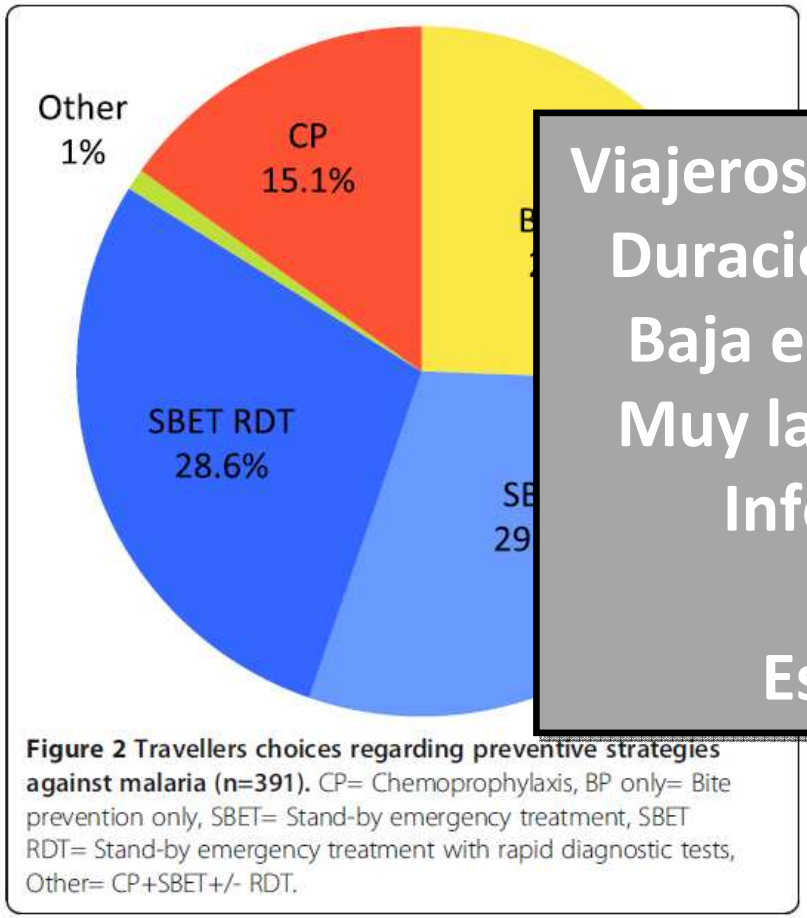

Figure 2 Travellers choices regarding preventive strategies against malaria (n=391). CP= Chemoprophylaxis, BP only= Bite prevention only, SBET= Stand-by emergency treatment, SBET RDT= Stand-by emergency treatment with rapid diagnostic tests, Other= CP+SBET+/- RDT.

Viajeros seleccionados
Duración corta(<7d)
Baja endemia (est)
Muy larga duración
Información

Estudios?

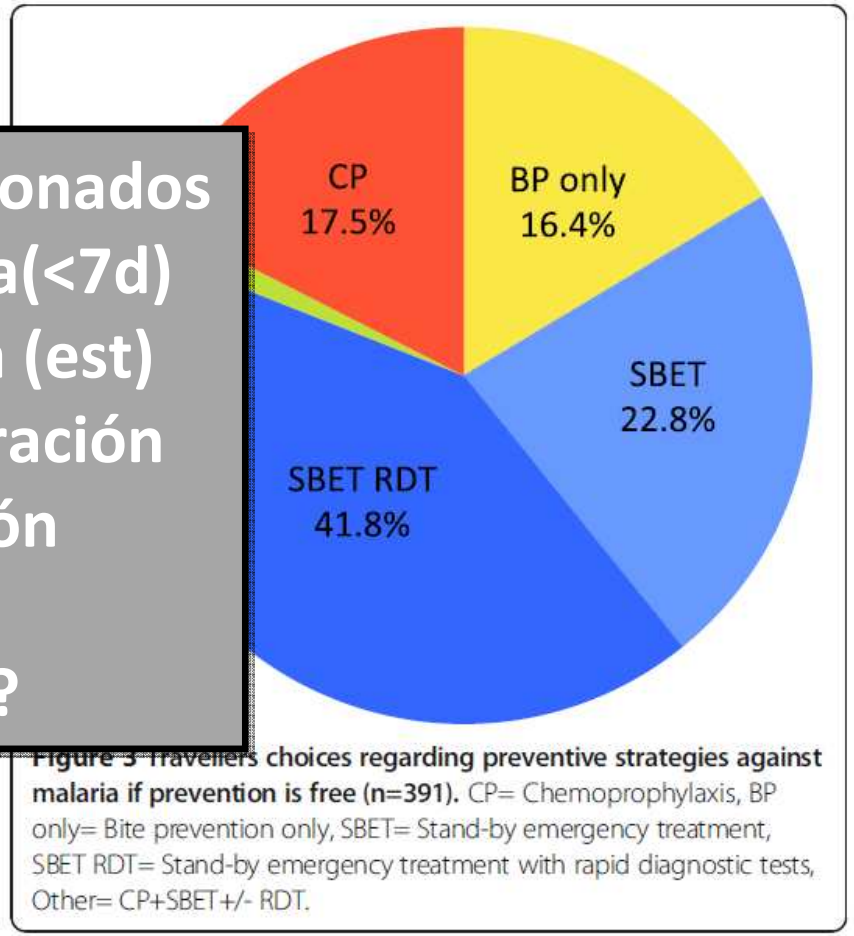

Figure 3 Travellers choices regarding preventive strategies against malaria if prevention is free (n=391). CP= Chemoprophylaxis, BP only= Bite prevention only, SBET= Stand-by emergency treatment, SBET RDT= Stand-by emergency treatment with rapid diagnostic tests, Other= CP+SBET+/- RDT.

Voumard et al. Malaria Journal (2015) 14:139

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Viajes de larga duración

- Profilaxis vs no profilaxis
- **Cloroquina**: retinopatía
- **Mefloquina:**
  - excelente protección
  - no más eadv
- **Doxiciclina:**
  - soldados 1 año
  - otras indicaciones
- **Malarone**?????

Voumard et al. Malaria Journal (2015) 14:139

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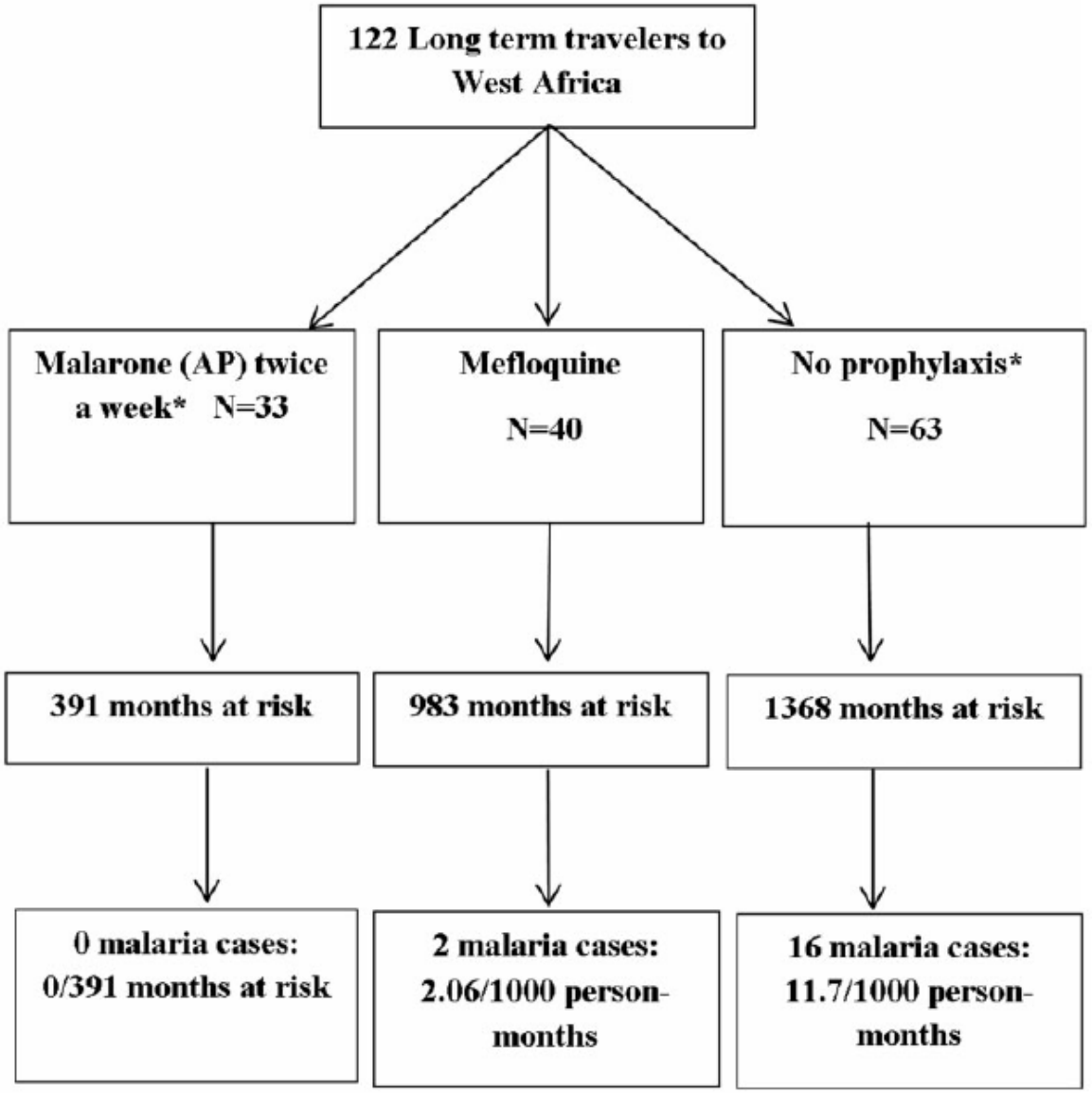
Viajes de larga duración



2016, 1–5
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Original Art

Effectiv
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Tamar Lach
Eli Schwart

[1]The Infectious
Paz, Malabo, Eq
Israel. and [4]Sacl

dico La
shomer,

Vall d'Hebron
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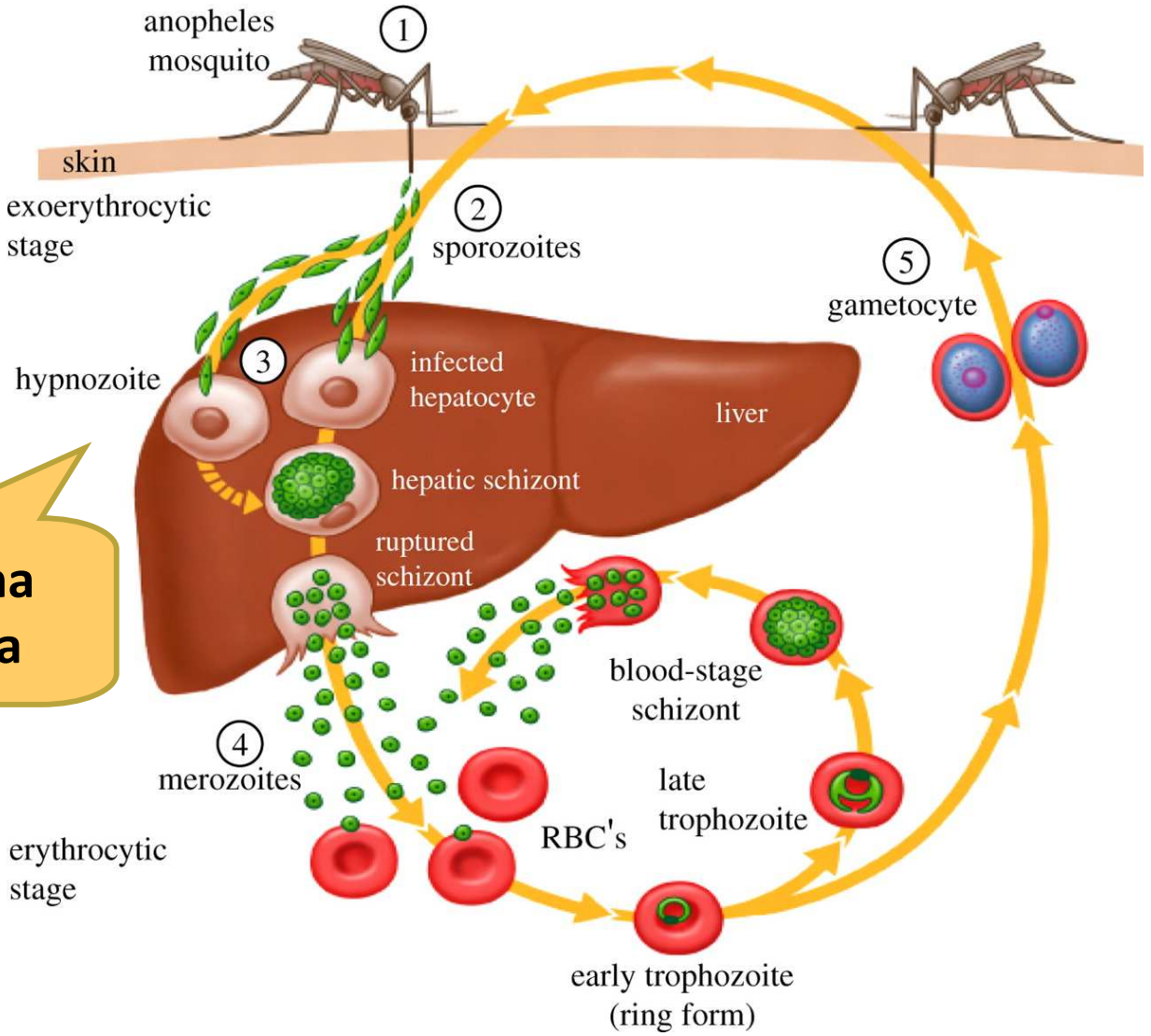
No profilaxis

- Anofelinos
- Hembras
- Preferencia nocturna
- Antropofílicos
- Endofílicos
- Condiciones ambientales

¿ Y profilaxis para *P. vivax*?



Tafenoquina
Primaquina

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Infecciones importadas por inmigrantes y viajeros: resultados de la Red Cooperativa para el estudio de las Enfermedades Importadas por Inmigrantes y Viajeros +Redivi

Marta Díaz-Menéndez[a,*], Jose A. Pérez-Molina[a], Nuria Serre[b], Begoña Treviño[b], [illegible]orrús[c], Mariano Matarranz[d], Esteban Martín[e], Gerardo Rojo-Marcos[f], Paloma Aguile[illegible][h], Inés Suárez-García[i], Rogelio López-Vélez[a] y Grupo de trabajo de +Redivi[◊]

Diagnósticos más frecuentes según tipo de caso

Diagnósticos[a,b]	Viajeros	Inmigrantes	VFR-inmigrantes	VFR-viajeros
Sano[c]	372 (33,7%)	411 (18,4%)	124 (21,6%)	29 (28,1%)
Diarrea aguda de etiología desconocida	117 (10,6%)	4 (0,2%)	15 (2,6%)	2 (1,9%)
Giardiasis	93 (8,4%)	64 (2,9%)	24 (4,2%)	1 (0,9%)
Malaria	43 (3,9%)	57 (2,5%)	60 (10,4%)	6 (5,8%)
Síndrome febril inespecífico	42 (3,8%)	9 (0,4%)	8 (1,4%)	5 (4,9%)
Eosinofilia de etiología desconocida	37 (3,4%)	286 (12,8)	80 (13,9)	14 (13,6)
Esquistosomiasis	36 (3,3%)	66 (3%)	10 (1,7%)	2 (1,9%)
Dengue	30 (2,7%)	1 (0,95%)	4 (0,7%)	2 (1,9%)
Larva *migrans* cutánea	23 (2,1%)	5 (0,2%)	2 (0,3%)	0
Infección del tracto urinario	19 (1,7%)	37 (1,7%)	1 (0,2%)	1 (1%)
Amebiasis	16 (1,5%)	32 (1,4%)	16 (2,8%)	4 (3,9%)
Infección tuberculosa latente	9 (0,8%)	274 (12,2%)	32 (5,5%)	1 (0,9%)
Estrongiloidiasis	9 (0,8%)	136 (6%)	56 (9,7%)	2 (1,9%)
Otras geohelmintiasis	5 (0,5%)	57 (2,5%)	13 (2,3%)	2 (1,9%)
Enfermedad de Chagas	0	492 (22%)	82 (14,3%)	0
Infección por VIH	3 (0,3%)	52 (2,3%)	2 (0,3%)	1 (1%)
Infección crónica por VHB	1 (0,1%)	41 (1,8%)	15 (2,6%)	0

VFR: inmigrante que viaja *(visiting friends and relatives)*; VIH: virus de la inmunodeficiencia humana; VHB: virus de la hepatitis B.

Díaz-Menéndez et al, Enferm Infecc Microbiol Clin. 2012; 30: 528-54

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PROSICS
Institut Català de la Salut
Programa de salut internacional
Barcelona

Mètodes barrera: Repel·lents químics, xarxa i roba impregnada
Cloroquina: (adults i nens)
Doxiciclina
Atovaquona Proguanil

Cloroquina-Proguanil en adults (no emb)
Mefloquina en adults (no emb)
Repel·lents DEET nens i embarassades

Primaquina
Amodiquina


Gracias