TRATAMIENTO DE LAS ENFERMEDADES PARASITARIAS

Dra. Paloma Merino Amador

I PARTE

ENFERMEDADES PARASITARIAS

Dra. Paloma Merino Amador

ENFERMEDADES PARASITARIAS

La evolución del Parásito

Neglected tropical diseases

The 17 neglected tropical diseases

The neglected tropical diseases result from four different causative pathogens:

Virus

Dengue/Severe dengue

Rabies

Protozoa

Chagas disease

Human African trypanosomiasis (sleeping sickness)

Leishmaniases

Helminth

Cysticercosis/Taeniasis

Dracunculiasis (guinea-worm disease)

Echinococcosis

Foodborne trematodiases

Lymphatic filariasis

Onchocerciasis (river blindness)

Schistosomiasis

Soil-transmitted helminthiases

Bacteria

Buruli ulcer

Leprosy (Hansen disease)

Trachoma

Yaws

Other neglected conditions

Chronic suppurative otitis media (CSOM)

Mycetoma

Podoconiosis

Scabies

Snakebite

Strongyloidiasis

I PARTE

ENFERMEDADES PARASITARIAS

Autóctonas

Importadas*

* Pérez-Molina et al. Enferm Infecc Microbiolo clin.2010;28(1):44-59

II PARTE

ENFERMEDADES PARASITARIAS

ANTIPARASITARIOS

PROTOZOOS

- **METRONIDAZOL**
- **PARAMOMICINA**
- **TETRACICLINAS**
- **ANFOTERICINA B**
- **ANTIPALÚDICOS**
- **BENZNIDAZOL**
- **NIFURTIMOX**

* SURAMINA, MELARSOPROL…

HELMINTOS

IVERMECTINA
DIETILCARBAMACINA
ALBENDAZOL
PRAZICUANTEL

III PARTE

CASOS CLÍNICOS

SÍNDROME DIARREICO

CASO CLÍNICO I

Varón de 45 años sin antecedentes personales de interés que consulta por cuadro de diarrea de 3 meses de evolución , que comienza tras la vuelta de un viaje a Poiteirs, Francia, donde estuvo en casa de unos familiares. La diarrea ha sido intermitente. Lleva una semana en la que han aumentado el número de deposiciones, sanguinolentas ha presentado fiebre de hasta 39ºC.

Exploración: Dolor a la palpación difuso en abdomen y en hipocondrio derecho.

Pruebas complementarias:

Analítica: Aumento de las enzimas hepáticas

Ecografía abdominal: Absceso en lóbulo hepático derecho

CASO CLÍNICO I

PROTOZOOS

Intestinales
- Entamoeba
- Naegleria
- Isospora
- Giardia
- Cryptosporidium
- Balantidium

Tisulares
- Plasmodium
- Toxoplasma
- Leishmania
- Trypanosoma

Entamoeba histolytica/dispar

- *Portadores asintomáticos*

Paramomicina

- *Infección intestinal*
- *Infección extraintestinal*

Metronidazol +
Paramomicina

AMEBIASIS

Giardia lamblia

1. **Metronidazol**
2. **Metronidazol+Abendazol**
3. **Paramomicina *(EMBARAZADA)**

INTOLERANCIA POSTERIOR A LACTOSA

PROTOZOOS INTESTINALES Y GENITALES

Tratamiento farmacológico de protozoosis intestinales y genitales

Entidad	Fármaco	Dosis adultos	Dosis pediátrica
Balantidiasis			
Elección	Tetraciclina	500 mg/6 h × 10 d	40mg/kg/d (máx 2 g) en 4 dosis (no en niños < 8 años)
Alternativa	Metronidazol	750 mg/8 h × 5 d	35–50 mg/kg/d en 3 dosis × 5 d
	Iodoquinol	650 mg/8 h × 20 d	30–40 mg/kg/d (máx. 2 g) en 3 dosis × 20 d
Ciclosporiasis			
Elección	Trimetoprima + sulfametoxazol	Trimetoprima 160 mg + sulfametoxazol 800 mg/12 h × 10 d	Trimetoprima 5 mg/kg + sulfametoxazol 25 mg/kg/d en 2 dosis × 10 d
Alternativa	Ciprofloxacino	500 mg/12 h × 7 d	
	Nitazoxanida	500 mg/12 h × 3 d	
Criptosporidiasis			
Elección	Nitazoxanida	500 mg/12 h × 3 d	1–3 años: 100 mg/12 h × 3 d 4–11 años: 200 mg/12h × 3 d > 12 años = adultos
Alternativa	Paramomicina	30 mg/kg/d en 3 dosis (hasta respuesta terapéutica)	30mg/kg/d en 3 dosis (hasta respuesta terapéutica)
Giardiasis			
Elección	Metronidazol	250 mg/8 h × 5d	15mg/kg/d en 3 dosis × 5 d
	Tinidazol	2 gr dosis única	50mg/kg (máx. 2 g) dosis única
Alternativa	Nitazoxanida	500 mg/12 h × 3 d	1–3 a: 100 mg/12 h × 3 d 4–11 a: 200mg/12 h × 3 d > 12 años = adultos
	Furazolidona	100 mg/6 h × 7–10 d	6 mg/kg/d en 3 dosis 7–10 d
	Quinacrina	100 mg/8 h × 5d	2 mg/kg/d en 3 dosis × 5d (máx. 300mg/d)
Isosporidiasis			
Elección	Trimetoprima + sulfametoxazol	Trimetoprima 160 mg + sulfametoxazol 800 mg/12 h × 10 d	Trimetoprima 5 mg/kg + sulfametoxazol 25 mg/kg/d en 2 dosis × 10 d
Alternativa	Pirimetamina	75 mg/24h durante 3 semanas	
Microsporidiasis intestinal			
Encephalitozoon intestinalis	Albendazol	400 mg /8 h × 21 días	15mg/kg/día en 2 tomas × 21 días
Enterocytozoon bieneusi	Fumagilina	20 mg /8 h durante 14 días	
Sarcocistiosis	No precisa		
Trichomoniasis			
Elección	Metronidazol	2 g dosis única	
	Tinidazol	2 grdosis única	

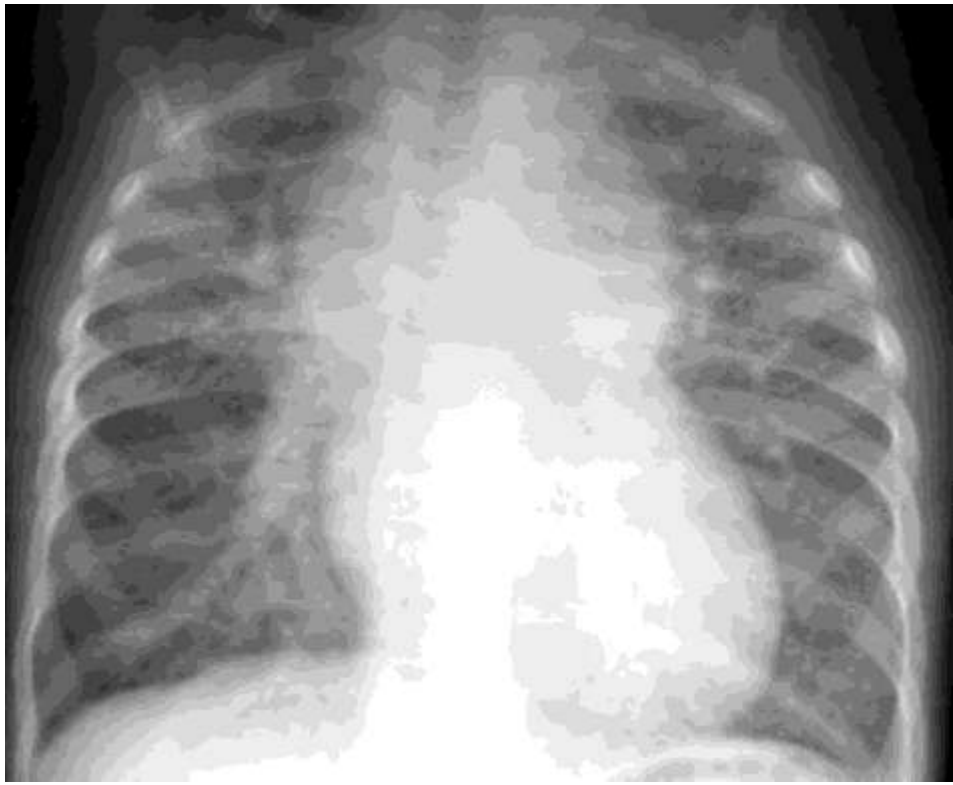
J.A. Pérez-Molina et al / Enferm Infecc Microbiol Clin. 2010;28(1):44–59

CASO CLÍNICO II

Paciente varón de 64 años de edad trasplantado renal hace 3 años en tratamiento con inmunosupresores. Ingresa por cuadro de varias semanas de evolución de diarrea.
Hace 48 horas ha comenzado con tos y disnea.

EXPLORACIÓN / PRUEBAS COMPLEMENTARIAS:

-ANALÍTICA: EOSINOFILIA
-Rx Tórax: Infiltrado reticular difuso
-ESTUDIO PARASITOLÓGICO



Helmintos

Nematodos

Enterobius, Ascaris, Strongyloides	Trichuris Uncinarias	**Cestodos** Taenia	**Trematodos** Schistosoma
Toxocara	Trichinella Filarias	Echinococcus Hymenolepis	Fasciola, Opistorchis Paragonimus

Sd.hiperinfestación

Strongyloides stercoralis

- Ivermectina

  Streptomyces avermitilis

  200µg/Kg/día 5-7 días

  +

- Albendazol

  400 mg/12 3 días

COSMOPOLITA

NEMATODOS

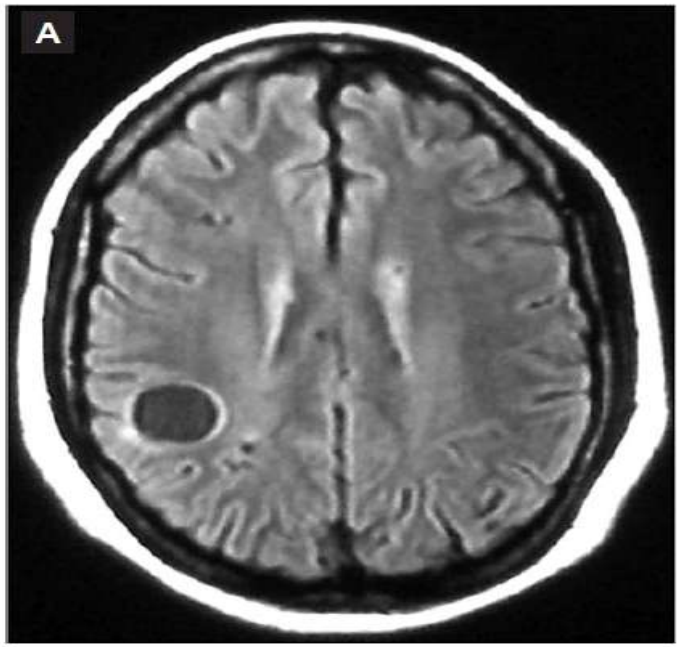
Tratamiento farmacológico de las nematodosis

Nematodos intestinales			
Ascariasis			
Elección:	Albendazol	400 mg d.u.	400 mg d.u.
	Mebendazol	100 mg/12 h × 3d o 500 mg d.u.	100 mg/12 h × 3 d o 500 mg d.u.
Alternativa	Ivermectina	200 µg/kg/día d.u.	200 µg/kg/día d.u.
Enterobiasis[a]			
Elección	Albendazol	400 mg d.u.	400 mg d.u.
	Mebendazol	100 mg/12 h d.u.	100 mg/12 h d.u.
Alternativa	Pamoato pirantel	11 mg/kg (máx. 1 g). Repetir en 2 sem.	11 mg/kg (máx. 1 g). Repetir en 2 sem.
Estrongiloidosis[b]			
Elección	Ivermectina	200 µg/kg/d × 3 días	200 µg/kg/d × 3 días
Alternativa	Albendazol	400 mg /12 h × 3–5días	400 mg /12 h × 3–5días
Trichuriasis			
Elección	Mebendazol	100 mg/12 h × 3 días	100 mg/12 h × 3 días
	Albendazol	400 mg/12h × 3 días	400 mg /12 h × 3 días
Alternativa	Ivermectina	200 µg/kg/día d.u.	200 µg/kg/día d.u.
Uncinarias			
Elección	Albendazol	400 mg d.u.	400 mg d.u.
	Mebendazol	100 mg/12 h × 3 d o 500 mg d.u.	100 mg/12 h × 3 d o 500 mg d.u.
Alternativa	Pamoato de pirantel	11 mg/kg (máx. 1 g) × 3 días	11 mg/kg (máx. 1 g) × 3 días
Capilariasis			
Elección	Albendazol	400 mg/12 h × 10 días	400 mg/12 h × 10 días
	Mebendazol	200 mg/d × 20 días	200 mg/d × 20 días
Nematodos hemáticos: filarias			
Filariosis linfática			
Elección[c]	DEC	6 mg/kg d.u.[d]	6 mg/kg d.u.
	+/–	+/–	+/-
	albendazol	400 mg/12 h	400 mg/12 h
Alternativa	Doxiciclina	200 mg/d × 4 sem.	4 mg/kg/d × 4 sem.
	+	+	+
	Ivermectina[e]	150 µg/kg d.u.	150 µg/kg d.u.

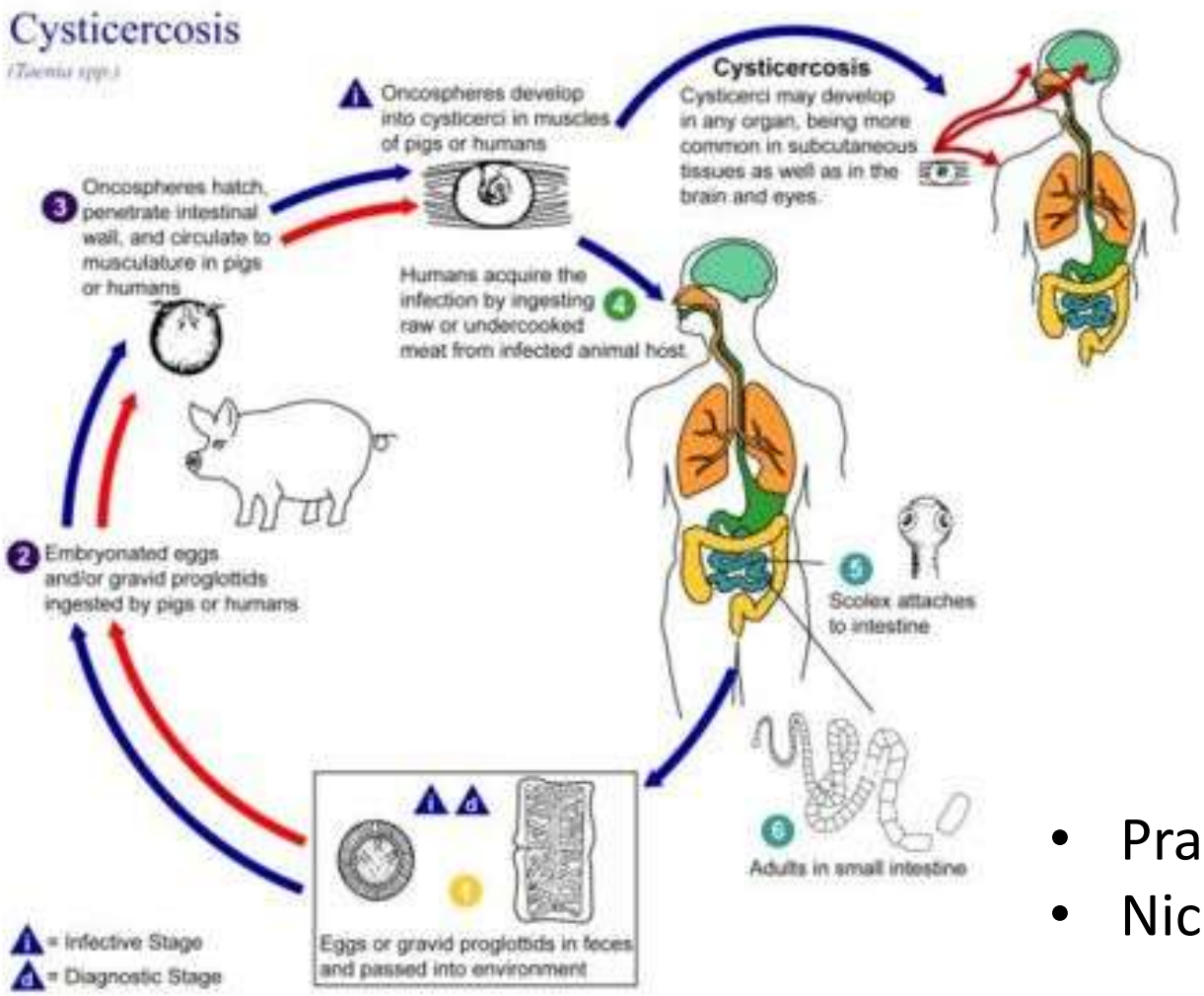
III PARTE

CASO CLÍNICO III

- Paciente mujer de 32 años procedente de Ecuador.
- Tiempo en España: 5 años
- No antecedentes personales de interés
- Acude al servicio de urgencias por presentar cuadro epiléptico con estatus
- Se realiza RM



CASO CLÍNICO III



Taenia solium

- Praziquantel 5-10 mg/Kg
- Niclosamida 2g

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PLOS | NEGLECTED TROPICAL DISEASES

Neurocysticercosis as a Cause of Epilepsy and Seizures in Two Community-Based Studies in a Cysticercosis-Endemic Region in Peru

Luz M. Moyano[1]*, Mayuko Saito[1,2], Silvia M. Montano[3], Guillermo Gonzalvez[1], Sandra Olaya[1], Viterbo Ayvar[1], Isidro González[4], Luis Larrauri[4], Victor C. W. Tsang[5], Fernando Llanos[6], Silvia Rodriguez[4], Armando E. Gonzalez[7], Robert H. Gilman[2], Hector H. Garcia[1,2,4,8] for The Cysticercosis Working Group in Peru

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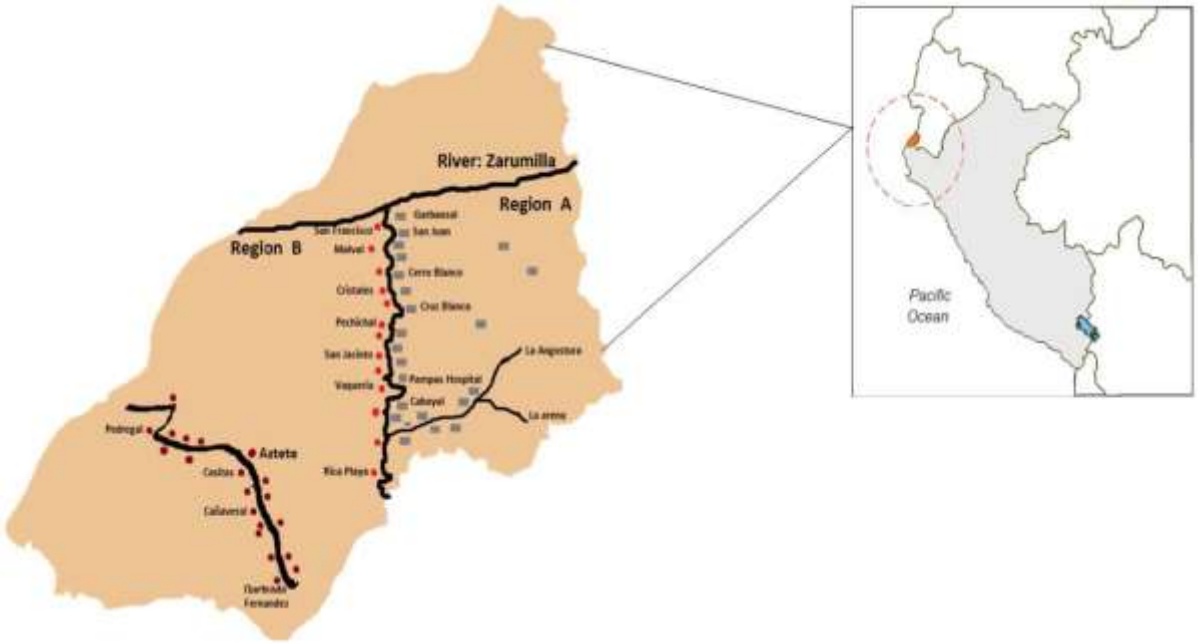
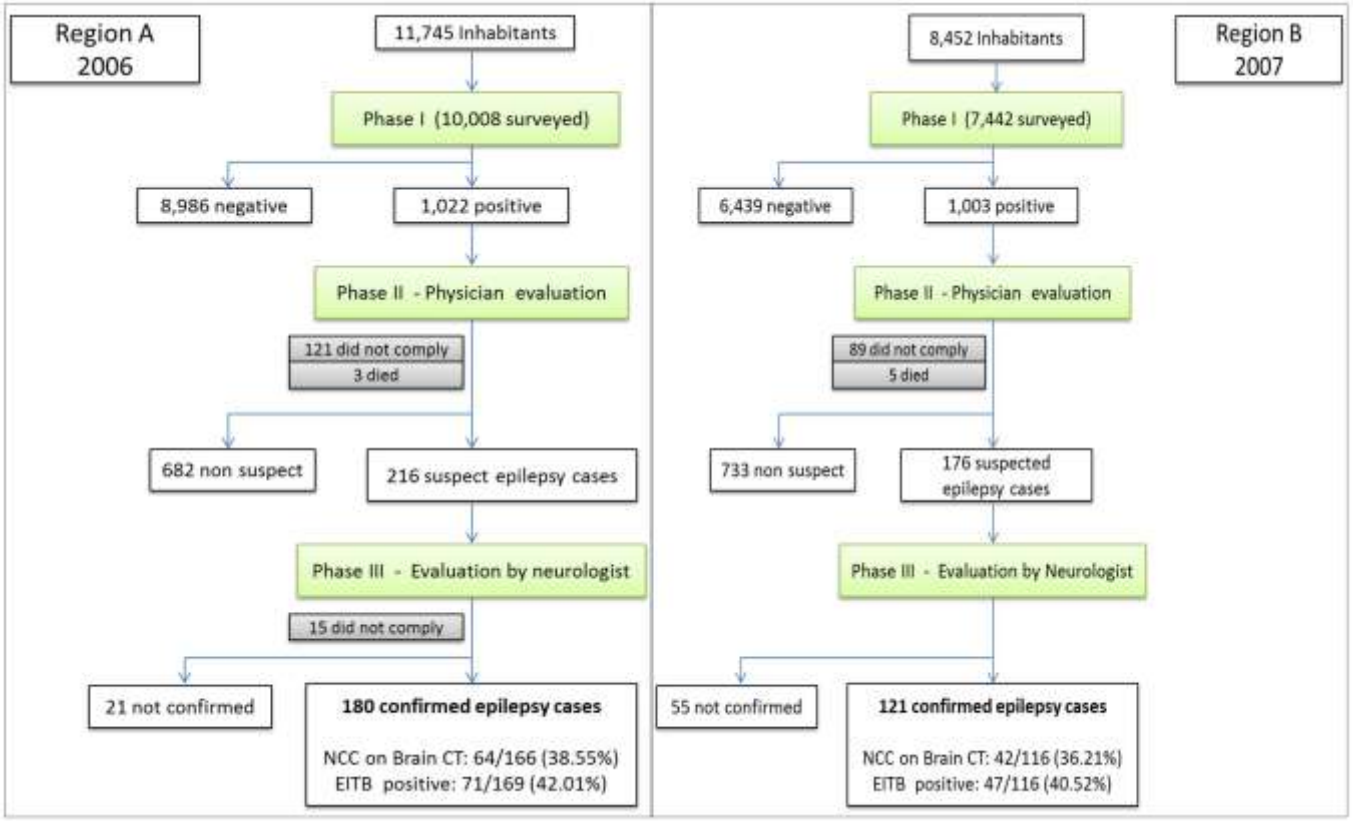


Figure 1. Map of Tumbes and rural communities intervened in 2006 (region A) and 2007 (region B).
doi:10.1371/journal.pntd.0002692.g001

III PARTE

CASO CLÍNICO III



CASO CLÍNICO III

Table 3. NCC-compatible CT findings in seronegative and seropositive individuals with epilepsy in Tumbes, Peru.

NCC-compatible CT	Seropositive	Seronegative
(n = 109)	(n = 62)*	(n = 47)
Subarachnoid NCC, with or without other lesions	3	0
Viable cysts, with or without edema	6	0
Calcified cysts without hydrocephalus	53	43
Calcified cysts with hydrocephalus	2	2
Hydrocephalus only	4	2

*Some patients had more than one finding.
doi:10.1371/journal.pntd.0002692.t003

Principal findings: In two surveys, 17,450 individuals were evaluated. Lifetime prevalence of epilepsy was 17.25/1000, and prevalence of active epilepsy was 10.8/1000 inhabitants. The prevalence of epilepsy increased after age 25 years and dropped after age 45. Only 24% (45/188) of patients with active epilepsy were taking antiepileptic drugs, all at sub-therapeutic doses. Antibodies to cysticercosis were found in approximately 40% of individuals with epilepsy in both studies. In one survey only individuals presenting strong antibody reactions were significantly associated with having epilepsy (OR 5.74; $p<0.001$). In the second, the seroprevalence as well as the proportion presenting strong antibody reactions were both significantly higher in individuals with epilepsy (OR 2.2 and 4.33, respectively). Brain CT showed NCC-compatible images in 109/282 individuals with epilepsy (39%). All individuals with viable parasites on CT were seropositive.

Conclusion: The prevalence of epilepsy in this cysticercosis endemic region is high and NCC is an important contributor to it.

World Health Organization

ELIMINATING SOIL-TRANSMITTED HELMINTHIASES AS A PUBLIC HEALTH PROBLEM IN CHILDREN

PROGRESS REPORT 2001–2010 AND STRATEGIC PLAN 2011–2020

Intestinal worms

© C. Carnemark/World Bank. Children lining up to recieve treatment for soil-transmitted helminthiases, Nigeria, 2012.

Soil-transmitted helminths
Soil-transmitted helminth infections are among the most common infections worldwide and affect the poorest and most deprived communities. They are transmitted by eggs present in human faeces which in turn contaminate soil in areas where sanitation is poor.

The main species that infect people are the roundworm (*Ascaris lumbricoides*), the whipworm (*Trichuris trichiura*) and the hookworms (*Necator americanus* and *Ancylostoma duodenale*.

Soil-transmitted helminth infections are widely distributed in all WHO Regions. | Read more

2011

30%

Reported coverage school-age children

Soil-transmitted helminthiases: number of children treated in 2010

2012

212 Million

Number of deworming tablets for school age children donated in 2012. Expected coverage school-age children: >40%

Eliminating soil-transmitted helminthiases as a public health problem in children: Progress report 2001–2010 and strategic plan 2011–2020

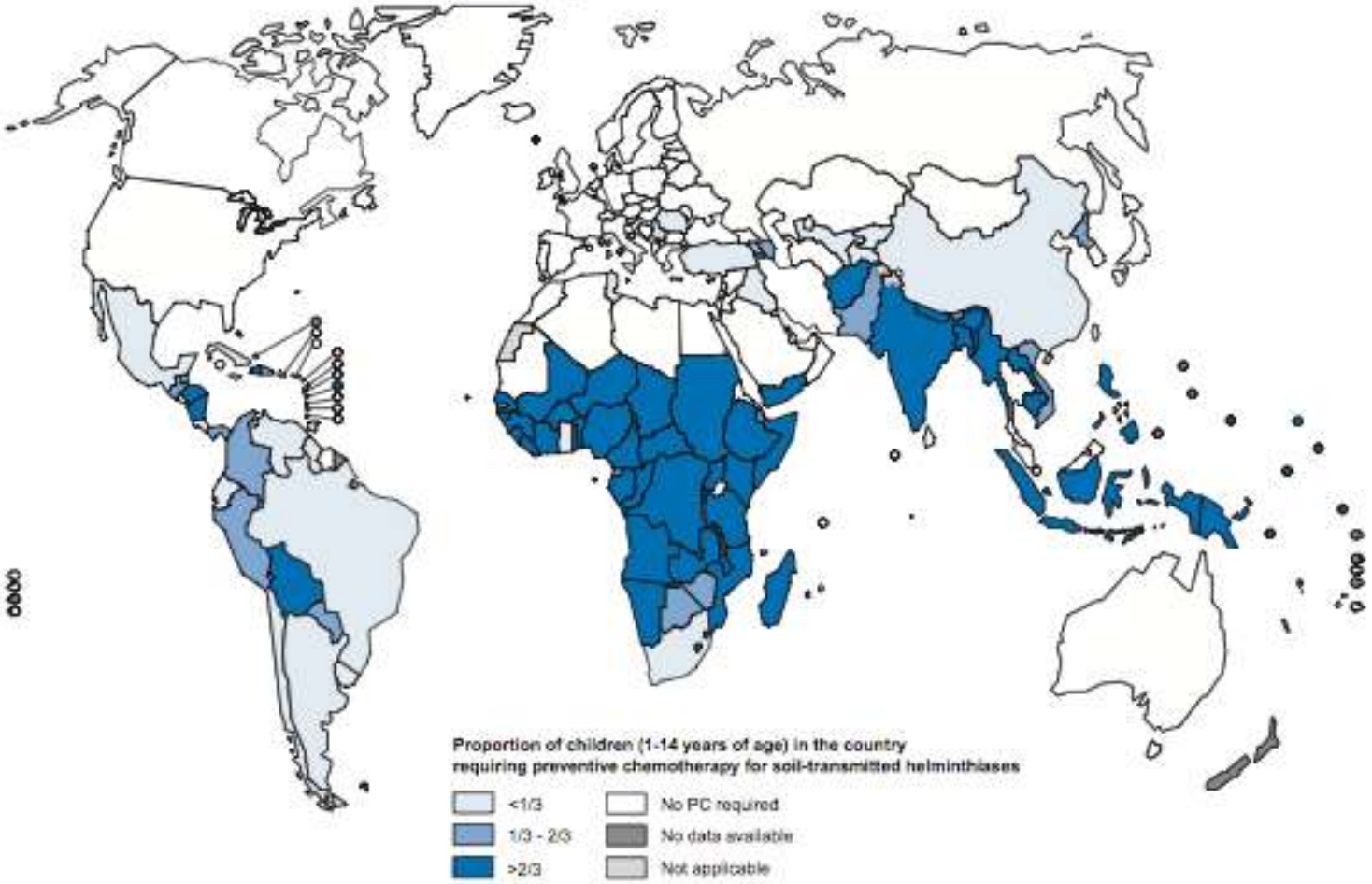
2013

189 Million

Number of deworming tablets for school age children donated (until February 2013). Target 295 million

Eliminating soil-transmitted helminthiases as a public health problem in children: Progress report 2001–2010 and strategic plan 2011–2020

Figure 1. Proportion of children aged 1–14 years requiring preventive chemotherapy (PC) for soil-transmitted helminthiases (STH), by country, 2009



http://www.childrenwithoutworms.org/

Three classes of intensity (light, moderate and heavy) of infection are defined for each STH; the thresholds for each class are shown below.[1]

Organism	Light-intensity infections	Moderate-intensity infections	Heavy-intensity infections
Ascarsis lumbricoides	1 – 4 999 epg	5 000 – 49 999 epg	>50 000 epg
Trichuris trichiura	1 – 999 epg	1 000 – 9 999 epg	>10 000 epg
Hookworms (*Necator americanus* or *Ancylostoma duodenale*)	1 – 1 999 epg	2 000 – 3 999 epg	>4 000 epg

epg = eggs per gram of faeces.


COUNTRY STATUS
STRATEGIC APPROACH
TARGET
Not started deworming
Not reached 75% coverage
Reached 75% coverage
Country free of childhood morbidity due to STH
Strengthen political commitment
Harmonize coordination
Build technical capacity and provide guidance
Improve sustainability and facilitate governemntal responsibility
Refine monitor/surveillance capacity
By 2015
100% of countries started deworming
By 2020
100% of countries reached 75% coverage

Figure 5. Ten countries with larger numbers of children (school-age and preschool-age) in need of deworming

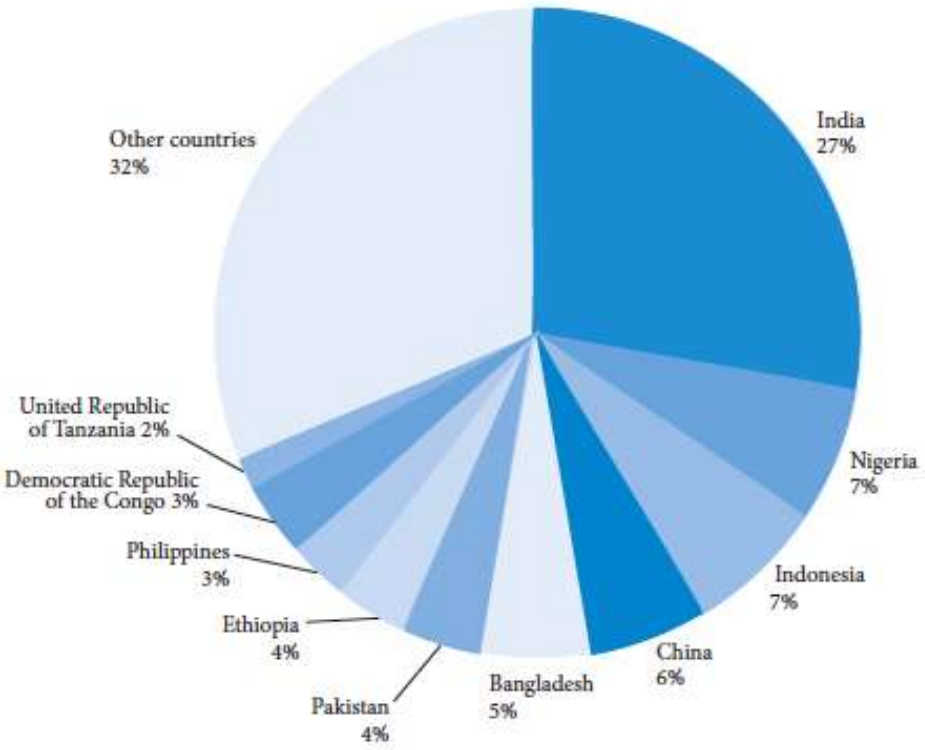
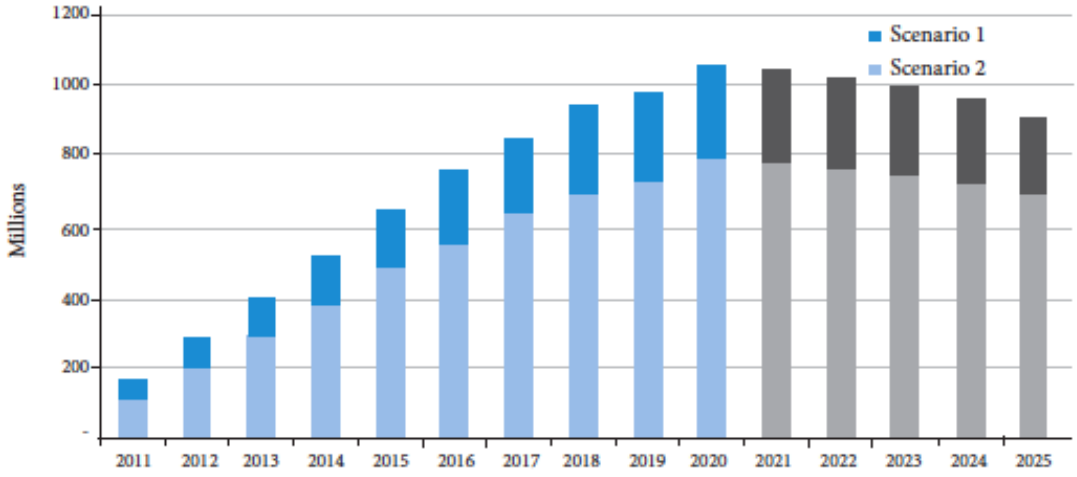


Figure 8. Global
Estimated number of albendazole (ALB) and mebendazole (MBD) tablets required to achieve the global target for coverage of school-age children by 2020



Scenario	Number of ALB/MBD tablets required (million)														
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	159	277	392	509	646	751	850	932	978	1,054	1,041	1,016	996	958	902
	119	208	294	382	485	563	637	699	733	791	781	762	747	718	676

Scenario 1: All countries reach 100% national coverage by 2020
Scenario 2: All countries reach 75% national coverage by 2020

Figure 12. Proportion of children requiring preventive chemotherapy for soil-transmitted helminthiases, by country, WHO African Region, 2009

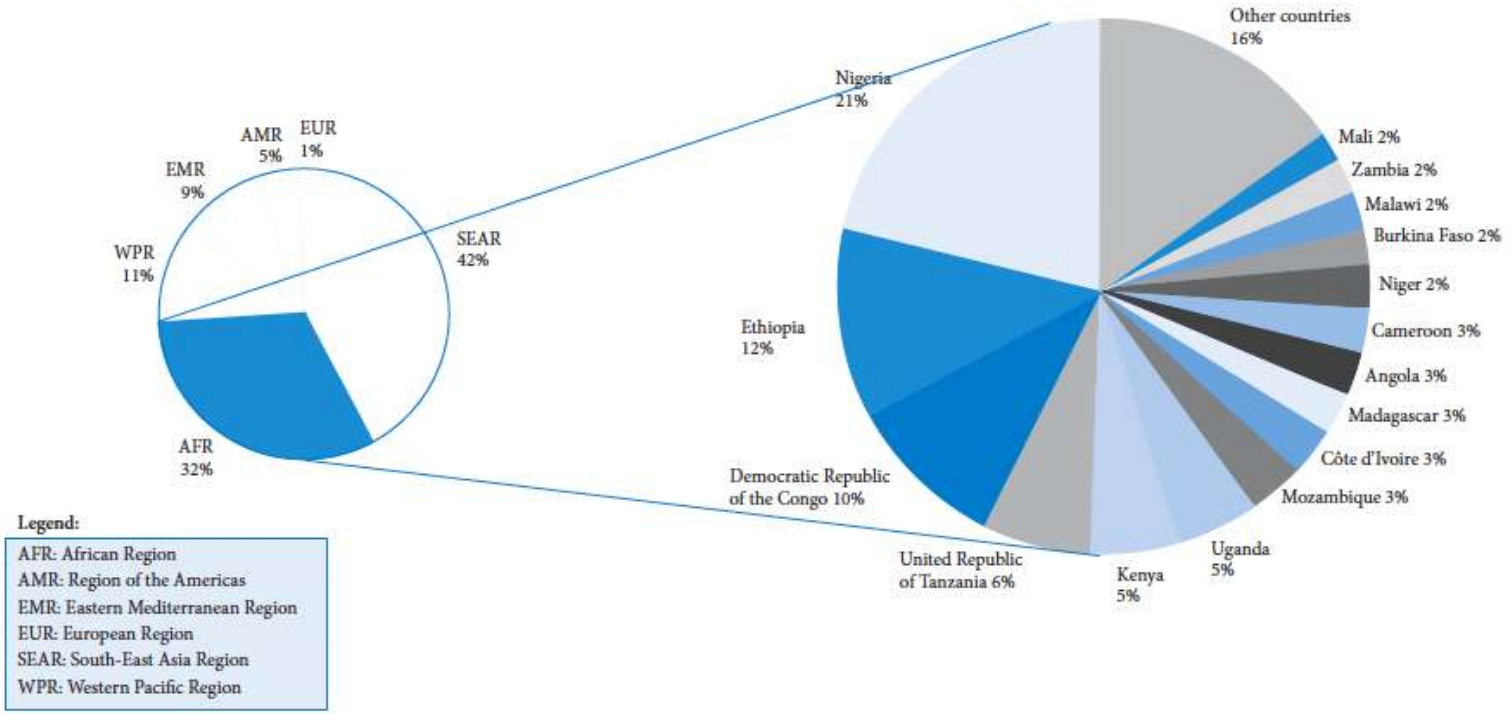


Figure 17. Proportion of children requiring preventive chemotherapy, by country, WHO Region of the Americas, 2009

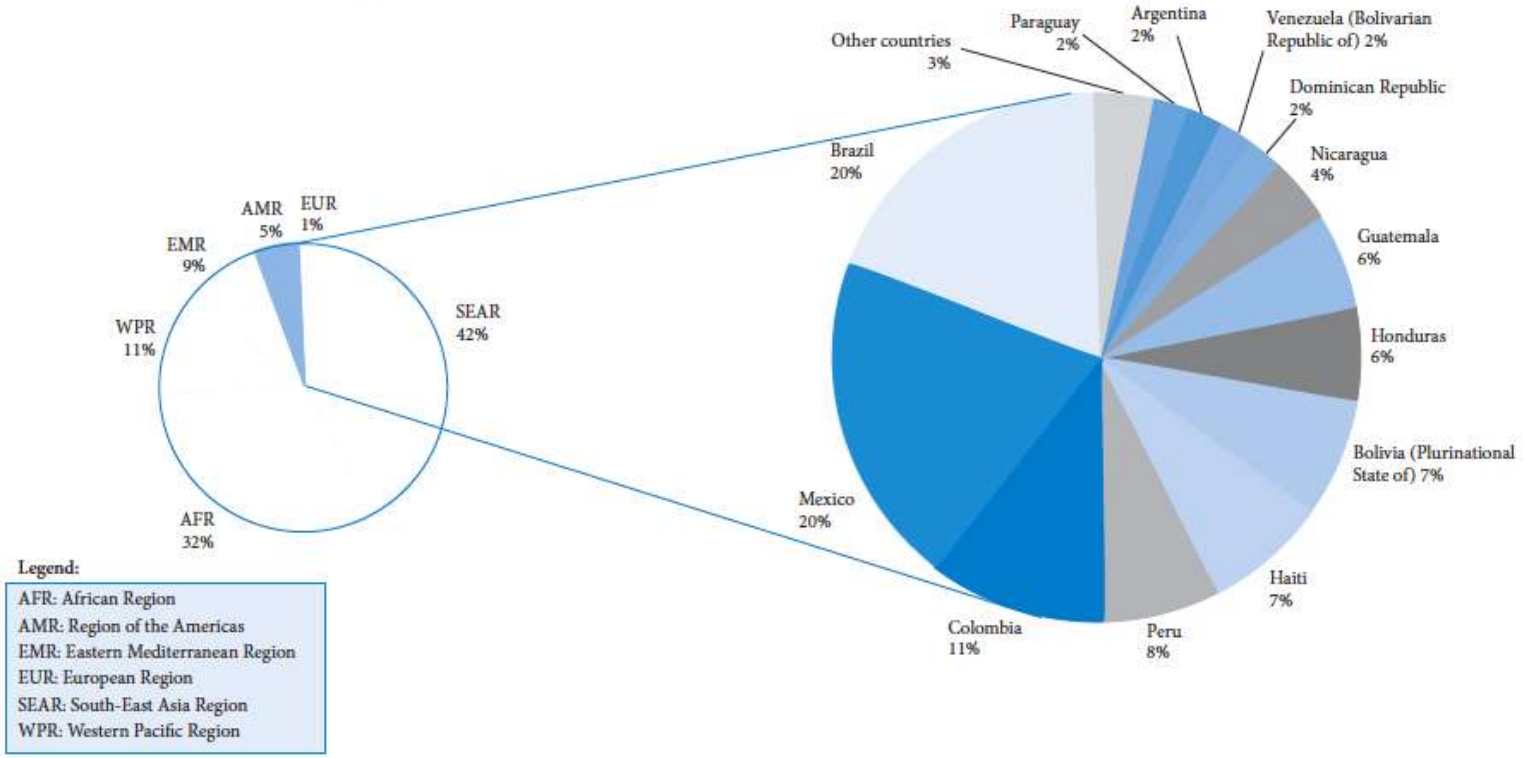


Figure 23. Proportion of children requiring preventive chemotherapy, by country, WHO South-East Asia Region, 2009

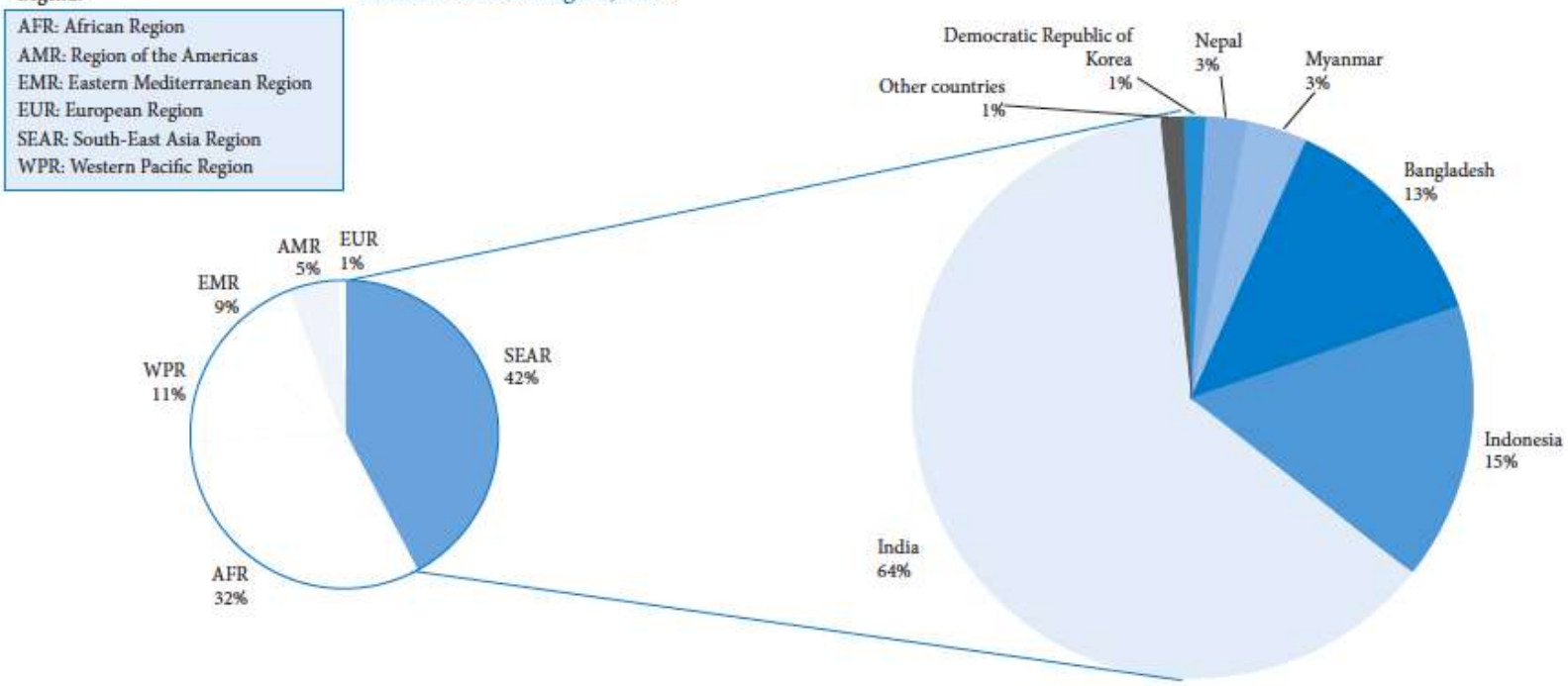


Figure 28. Proportion of children requiring preventive chemotherapy, by country, WHO European Region, 2009

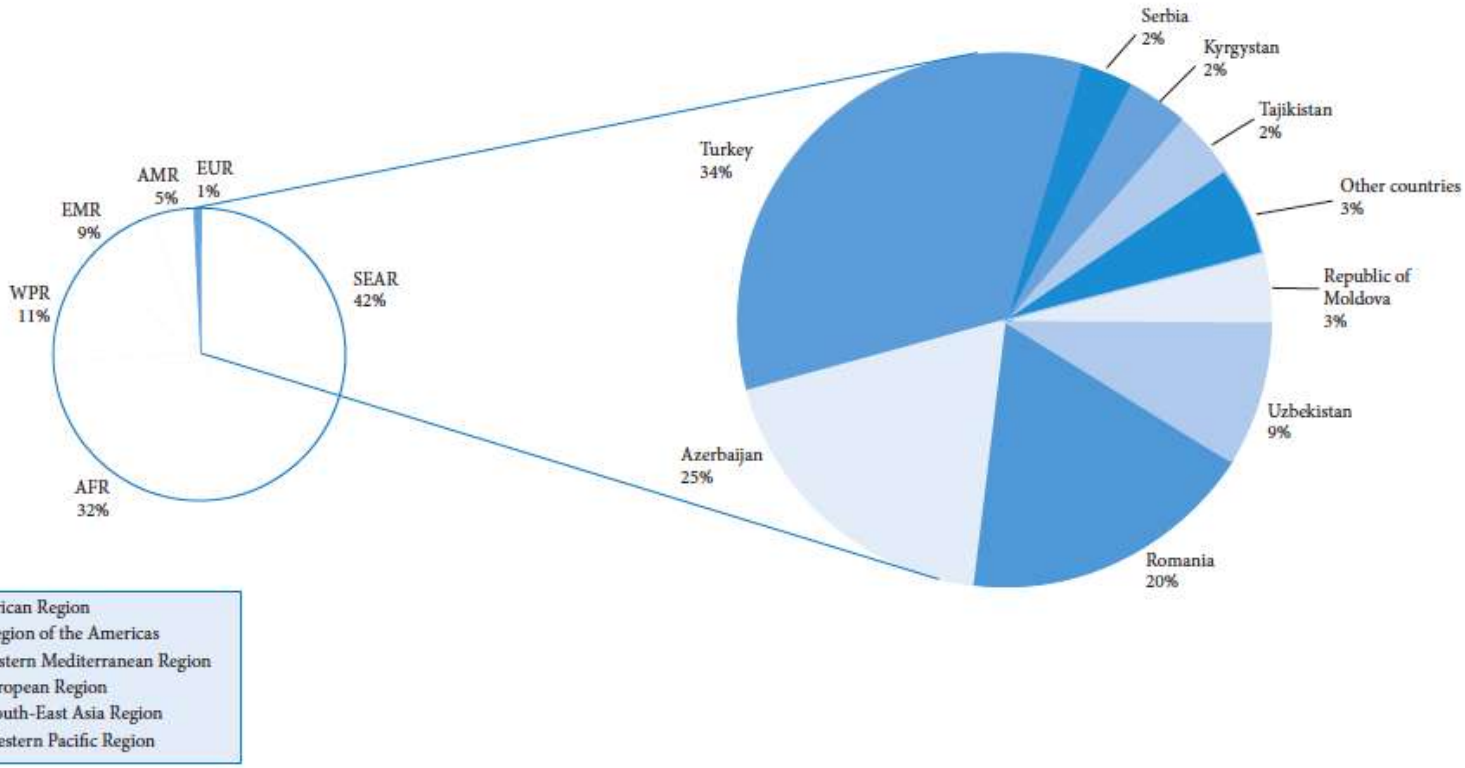


Figure 33. Proportion of children requiring preventive chemotherapy, by country, WHO Eastern Mediterranean Region, 2009

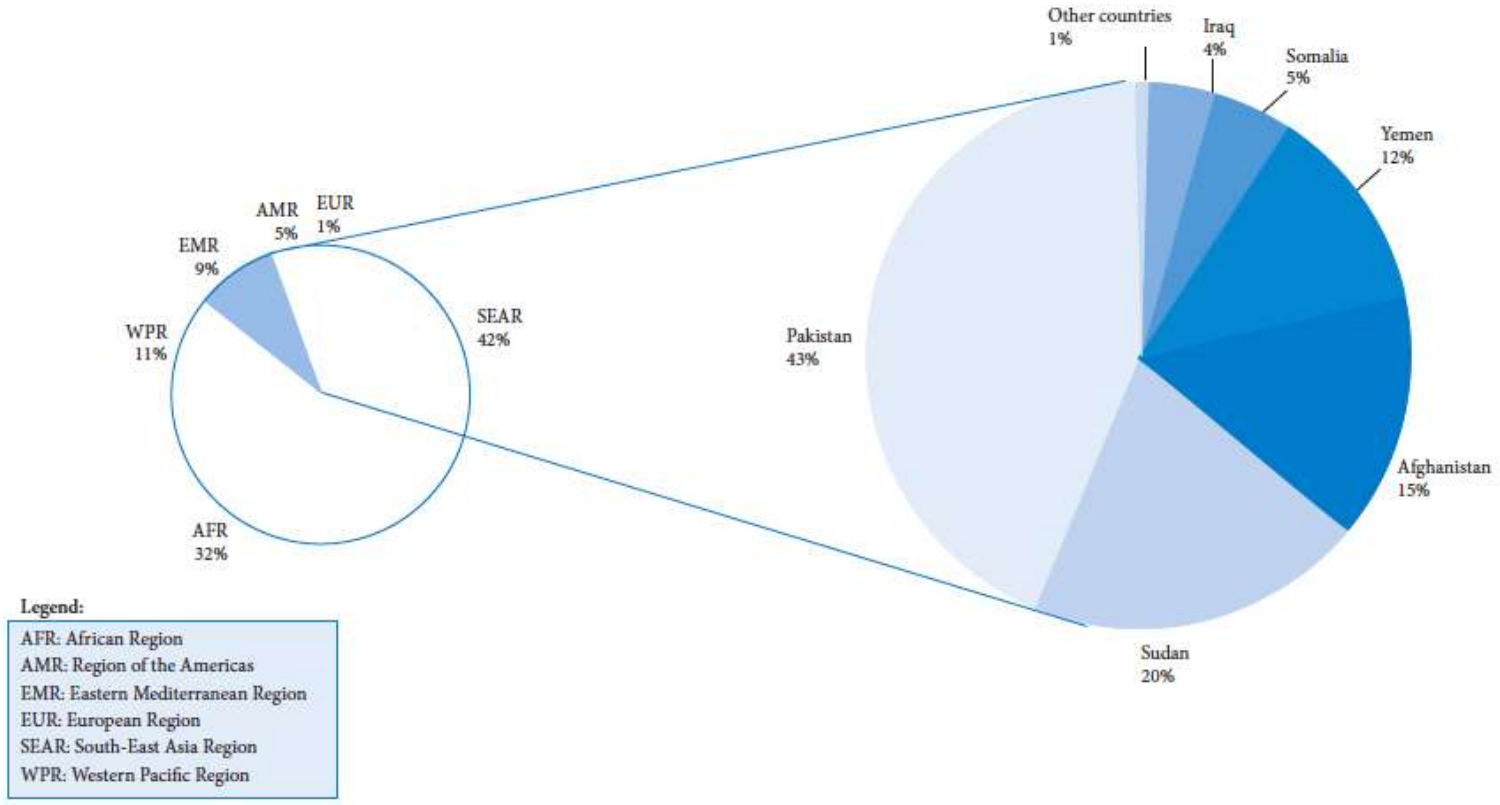
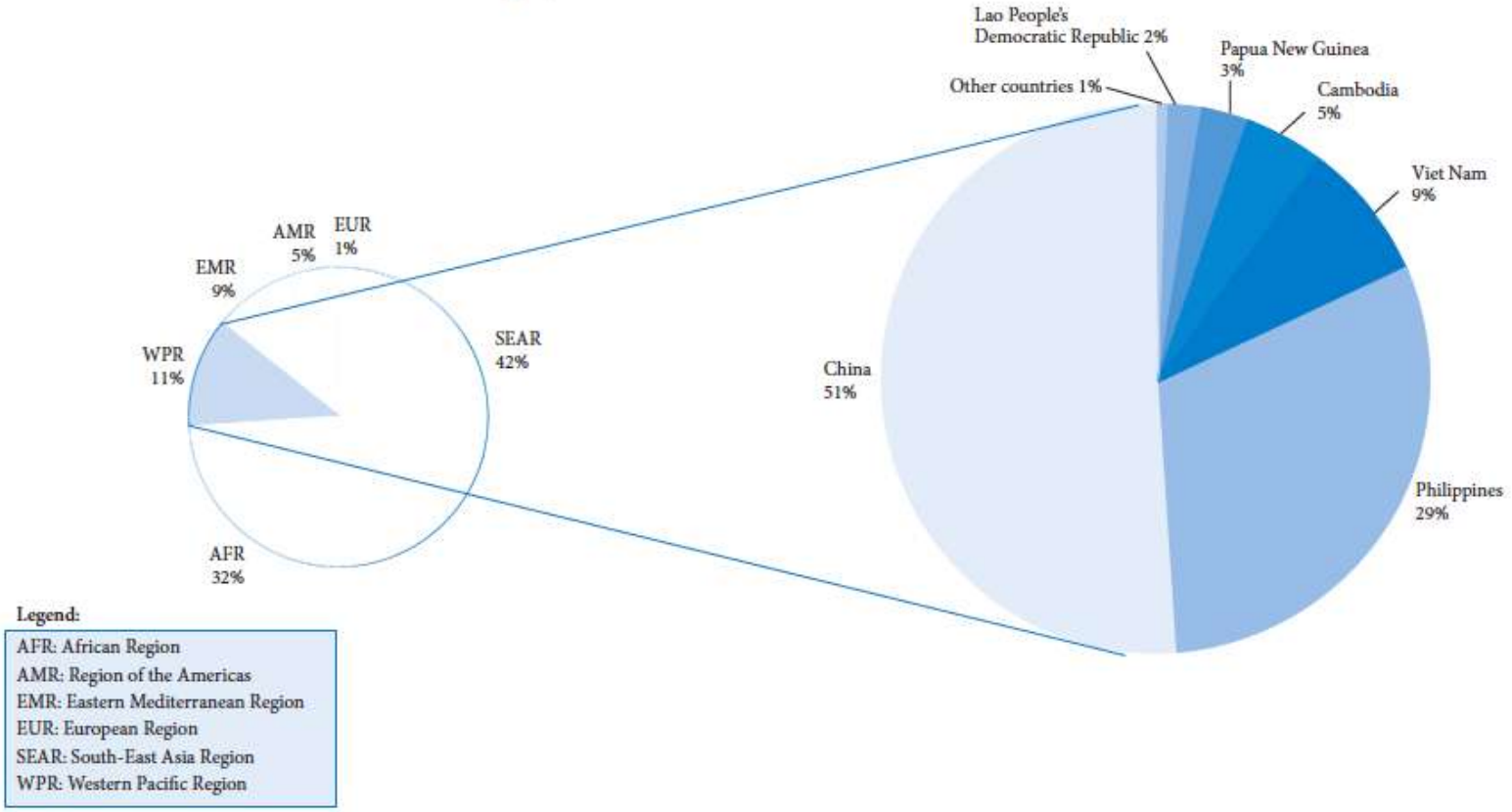


Figure 38. Proportion of children requiring preventive chemotherapy, by country, WHO Western Pacific Region, 2009



Parasites & Vectors

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Once a year school-based deworming with praziquantel and albendazole combination may not be adequate for control of urogenital schistosomiasis and hookworm infection in Matuga District, Kwale County, Kenya

Parasites & Vectors 2014, 7:74 doi:10.1186/1756-3305-7-74

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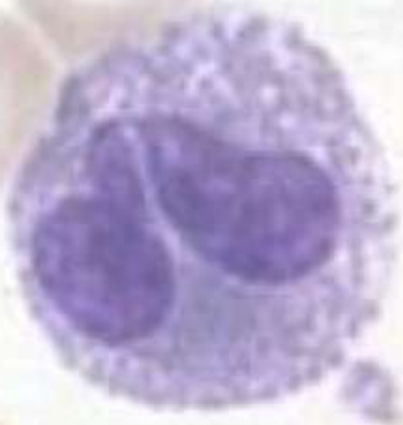
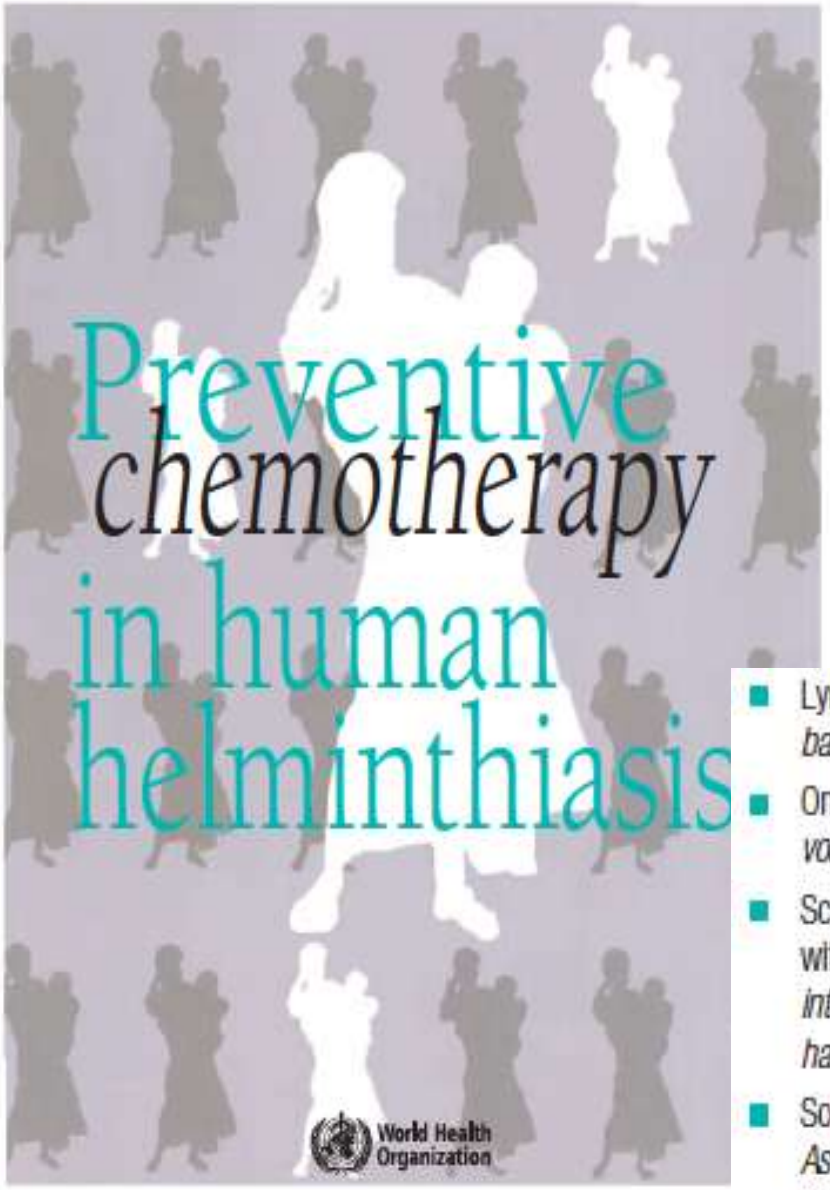
Background

Neglected tropical diseases (NTDs) predominantly occur in resource poor settings where they often present a serious public health burden. Sustained global advocacy has been important in raising awareness of NTDs and the relatively low cost for control of helminthic NTDs using preventive chemotherapy. This enthusiasm was recently boosted at the London declaration on NTDs through commitments by different partners to avail resources required for control of NTDs particularly those that employ preventive chemotherapy as the major intervention strategy. Subsequently, national NTD programmes are responding to these new opportunities by implementing preventive chemotherapy including school-based deworming (SBD). Further, with the availability of increased resources, both financial and pharma, the optimal strategies for implementing preventive chemotherapy in highly endemic settings are under debate and this paper goes some way to addressing this issue in a specific setting in coastal Kenya.

The results of the current study suggest once per year treatment may not be adequate preventive chemotherapy strategy against hookworm and *S. haematobium* infections in areas where transmission is high and sanitation coverage is low, such as in rural areas of Kwale County. Our intervention failed to reduce the prevalence of hookworm and rebounds in rates of urogenital schistosomiasis were observed. Thus there is an urgent need to consider alternative treatment regimens so as to effectively control the infection in the area. Since these infections were previously shown to be high in adults in this area [8], it is critical to consider expanding preventive chemotherapy to include all community members in the ongoing intervention programmes. For sustainable NTD control in this area, it is important to also find ways of engaging the communities in construction of household latrines as well as hygiene behavioral change so as to improve community level sanitation.

EOSINOFILIA





- Lymphatic filariasis (LF) – caused by infection with the nematodes *Wuchereria bancrofti*, *Brugia malayi* and *B. timori*.
- Onchocerciasis (ONCHO) – caused by infection with the nematode *Onchocerca volvulus*.
- Schistosomiasis (SCH) – SCHi (intestinal schistosomiasis) caused by infection with the trematodes *Schistosoma mansoni*, *S. mekongi*, *S. japonicum* and *S. intercalatum*, and SCHu (urinary schistosomiasis) caused by infection with *S. haematobium*.
- Soil-transmitted helminthiasis (STH) – caused by infection with the nematodes *Ascaris lumbricoides* (roundworm), *Ancylostoma duodenale* and *Necator americanus* (hookworm), and *Trichuris trichiura* (whipworm).

Sustained, large-scale preventive chemotherapy against helminthic infections is a cost-effective intervention that contributes to the achievement of several Millennium Development Goals (*20*, *21*) including:

1. eradicating extreme poverty and hunger
2. achieving universal primary education
3. promoting gender equality
4. reducing child mortality
5. improving maternal health and
6. combating HIV/AIDS, malaria and tuberculosis.

A6.1 Lymphatic filariasis

The disease

It is estimated that 1.2 billion people in 83 countries live in areas endemic for lymphatic filariasis and about 120 million people are affected by the disease.

The causal agents of lymphatic filariasis are the filariae *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*. The adult worms live in the lymphatic system of humans. After mating, each female worm produces several thousand larvae (microfilariae), which appear in the peripheral blood at times that coincide with the biting activity of mosquito vectors. The microfilariae are ingested along with the blood meal by the mosquitoes, develop inside the insects and are transmitted to another human host through mosquito bites.

Filarial infection may be clinically asymptomatic; the disease may also present as one or more acute manifestations (fever, local swelling, tropical pulmonary eosinophilia syndrome, lymphangitis). Chronic complications include lymphoedema or elephantiasis of the limbs, damage to the genital organs (including hydrocele in men), and damage to the kidney (including chyluria) and lymphatic system.

Recommended intervention strategy and aim

The strategy of the Global Programme to Eliminate Lymphatic Filariasis has two components:

- Mass drug administration of two drugs (DEC + albendazole or ivermectin + albendazole), given together to the entire eligible population once a year until transmission is reduced and ultimately interrupted, or regular intake of DEC-fortified salt.
- Home-based care to prevent and alleviate the suffering of affected individuals and community education programmes to promote the benefits of intensive local hygiene and self-management of affected organs and limbs.

Table 1. WHO-recommended anthelminthic drugs for use in preventive chemotherapy[a,b]

Note: Drug names are given in full in the list of abbreviations at the front of the manual.

	Disease	ALB	MBD	DEC	IVM	PZQ	LEV[c]	PYR[c]
Target diseases for which a well-defined strategy is available	Ascariasis	✓	✓	–	(✓)	–	✓	✓
	Hookworm disease	✓	✓	–	–	–	✓	✓
	Lymphatic filariasis	✓	–	✓	✓	–	–	–
	Onchocerciasis	–	–	–	✓	–	–	–
	Schistosomiasis	–	–	–	–	✓	–	–
	Trichuriasis	✓	✓	–	(✓)	–	(✓)[d]	(✓)[d]
Target diseases for which a strategy is being developed	Clonorchiasis	–	–	–	–	✓	–	–
	Opisthorchiasis	–	–	–	–	✓	–	–
	Paragonimiasis	–	–	–	–	✓	–	–
	Strongyloidiasis	✓	(✓)	–	✓	–	–	–
	Taeniasis	–	–	–	–	✓ (up to 10 mg/kg)	–	–
Additional benefits	Cutaneous larva migrans (zoonotic ancylostomiasis)	✓	(✓)	–	(✓)	–	(✓)	(✓)
	Ectoparasitic infections (scabies and lice)	–	–	–	✓	–	–	–
	Enterobiasis	✓	✓	–	(✓)	–	(✓)	✓
	Intestinal trematodiases	–	–	–	–	✓	–	–
	Visceral larva migrans (toxocariasis)	–	–	✓	(✓)	–	–	–

[a] Prescribing information and contraindications are given in the *WHO Model Formulary 2004 (13)*.

[b] In this table, ✓ indicates drugs recommended by WHO for treatment of the relevant disease, and (✓) indicates drugs that are not recommended for treatment but that have a (suboptimal) effect against the disease.

[c] At present, LEV and PYR do not have a prominent role in preventive chemotherapy as described in this manual. However, they remain useful drugs for the treatment of soil-transmitted helminthiasis, and since – unlike ALB and MBD – they do not belong to the benzimidazole group, they will be expected to contribute to the management of drug-resistant STH infections should that problem emerge.

[d] LEV and PYR have only a limited effect on trichuriasis but, when used in combination with oxantel, PYR has an efficacy against trichuriasis comparable to that observed with MBD (14).

Table 2. Drugs, dosages, implementation thresholds and regimens in preventive chemotherapy interventions

Note: Drug names are given in full in the list of abbreviations at the front of the manual.

Disease	Drugs and dosages	Threshold for implementation of preventive chemotherapy interventions[b]	Frequency of intervention
Lymphatic filariasis (in countries where onchocerciasis is co-endemic)	IVM according to height (using IVM tablet-pole) **plus** ALB 400 mg	Prevalence of infection ≥ 1%	Once a year
Lymphatic filariasis (in countries where onchocerciasis is not co-endemic)	DEC 6 mg/kg (using age as criterion for dose) **plus** ALB 400 mg	Prevalence of infection ≥ 1%	Once a year
Onchocerciasis	IVM according to height (using IVM tablet-pole)	Prevalence of infection ≥ 40% or prevalence of palpable nodules ≥ 20%	Once a year
Schistosomiasis	PZQ 40 mg/kg (using PZQ tablet-pole)	Presence of infection	According to prevalence of infection (see Annex 2)
Soil-transmitted helminthiasis (ascariasis, trichuriasis, hookworm disease)	ALB 400 mg **or** MBD 500 mg[a]	Presence of infection	According to prevalence of infection (see Annex 2)
Trachoma	Azilthromycin 20mg/kg (using tablet-pole) max 1g in adults	Active trachoma (TF) prevalence > 5 % in 1–9 years old at district level[c]	Once a year

[a] LEV 2.5 mg/kg or PYR 10 mg/kg is useful where trichuriasis does not pose a significant problem.

[b] For details, see Annex 6.

[c] TF >10% at district level: district-wide mass treatment. If TF <5% at district level, some communities might still require community wide treatment.

Box B. Co-administration of albendazole, ivermectin and praziquantel

In some instances, co-administration of albendazole, ivermectin and praziquantel would provide evident operational advantages. However, the following precautions should be exercised:

- In a population that has never been subjected to mass treatment with any of these drugs, the initial 1–2 rounds of treatment with praziquantel should be given separately from albendazole and/or ivermectin treatment;*
- In a population that has previously been subjected to (separate) mass treatment with praziquantel and ivermectin or praziquantel and ivermectin+albendazole, extra safety monitoring should be carried out during the initial rounds of large-scale combined treatment to monitor for any unanticipated adverse reactions.

The same precautions should be taken in case of co-admistration of ivermectin and praziquantel.

*Co-administration of PZQ and ALB (in SCH and STH control) and of IVM and ALB (in LF elimination) has already been approved for all circumstances.

5.6 Problems caused by concurrent infections

Programme managers should be aware that sustainable anthelminthic treatment for lymphatic filariasis, onchocerciasis, schistosomiasis and soil-transmitted helminthiasis may be disrupted if serious adverse experiences occur as a result of the inadvertent treatment of certain concurrent infections that have not been recognized (e.g. following praziquantel treatment of neurocysticercosis). The following precautionary measures are therefore recommended:

PZQ

As praziquantel can exacerbate central nervous system pathology due to schistosomiasis, paragonimiasis or *Taenia solium* cysticercosis, as a general rule this drug should not be administered in large-scale interventions to individuals reporting a history of epilepsy and/or other signs of potential central nervous system involvement such as subcutaneous nodules suggestive of cystercosis (*55*).

IVM in loiasis-endemic areas

Special measures should be taken when ivermectin alone is used in MDA interventions against onchocerciasis in areas where *Loa loa* is endemic (*68*). See intervention MDA3 box in section 5.4.2 for further details.

IVM+ALB in loiasis-endemic areas

The same special measures should also be taken when ivermectin is used in combination with albendazole in MDA interventions against lymphatic filariasis and onchocerciasis in areas where *Loa loa* is endemic. There is no biological rationale or available data to suggest that the addition of albendazole to MDA interventions with ivermectin in areas where *Loa loa* is endemic would increase the number or severity of SAEs if the two drugs were to be used together to treat populations co-endemic for onchocerciasis, lymphatic filariasis and loiasis. However, special surveillance measures are recommended (*69*). See intervention MDA1 box in section 5.4.2 for further details.

CASO CLÍNICO IV

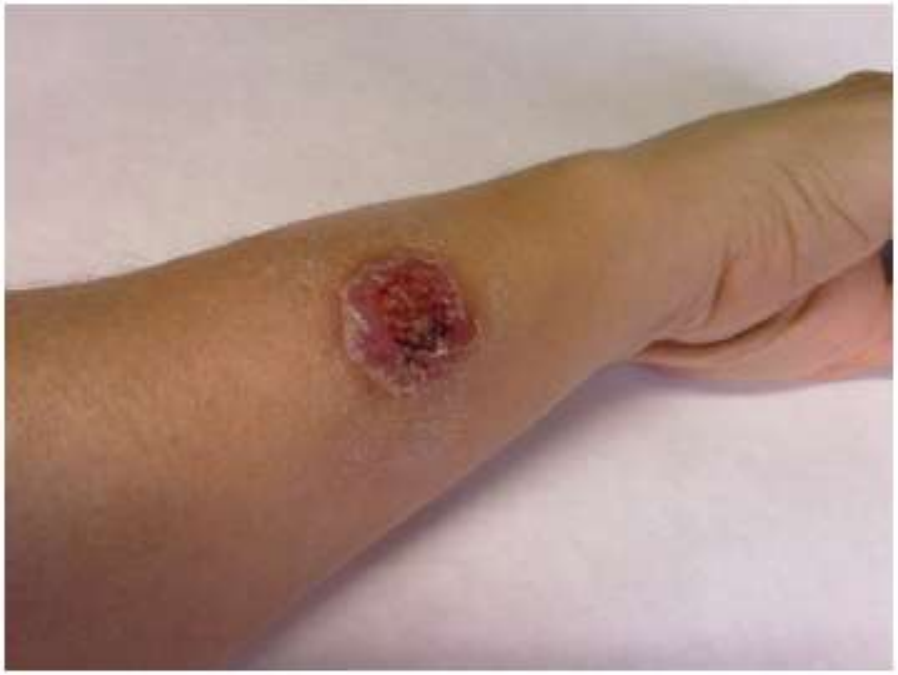
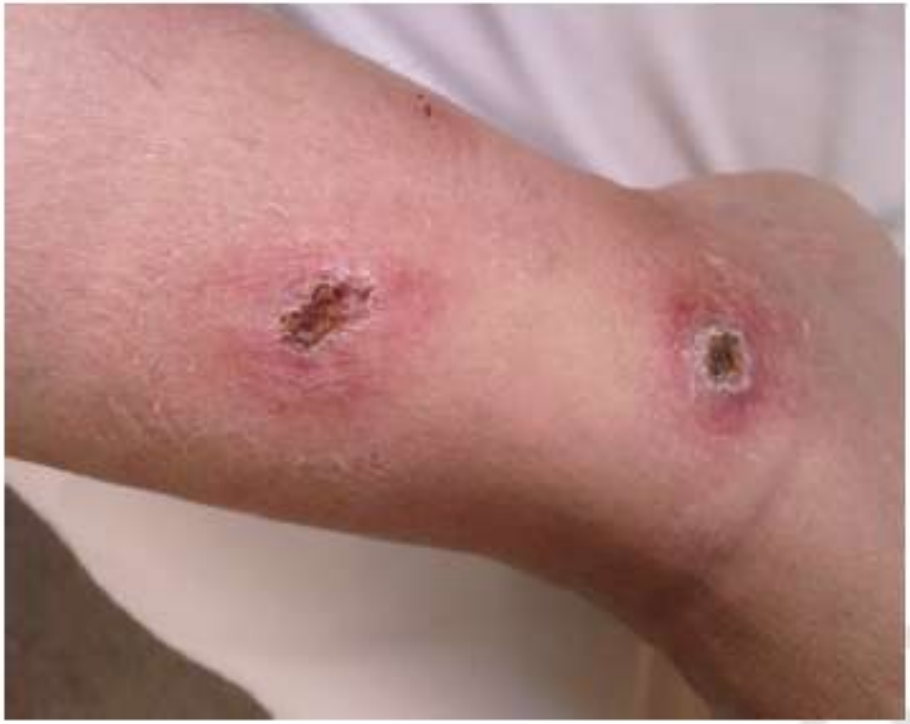


Figura 1. Lesión en antebrazo derecho el primer día de consulta.



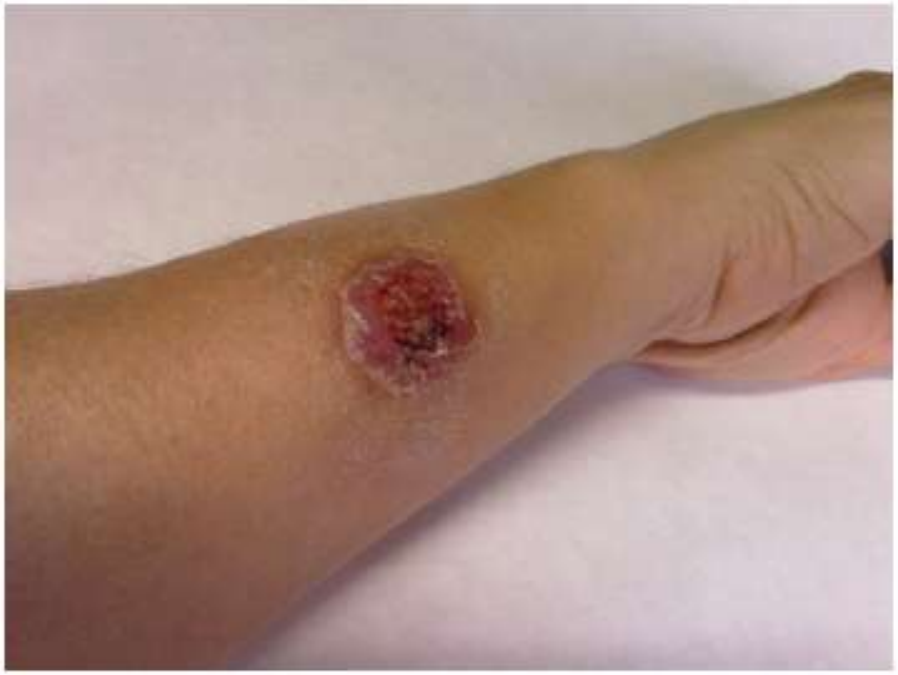


Figura 1. Lesión en antebrazo derecho el primer día de consulta.

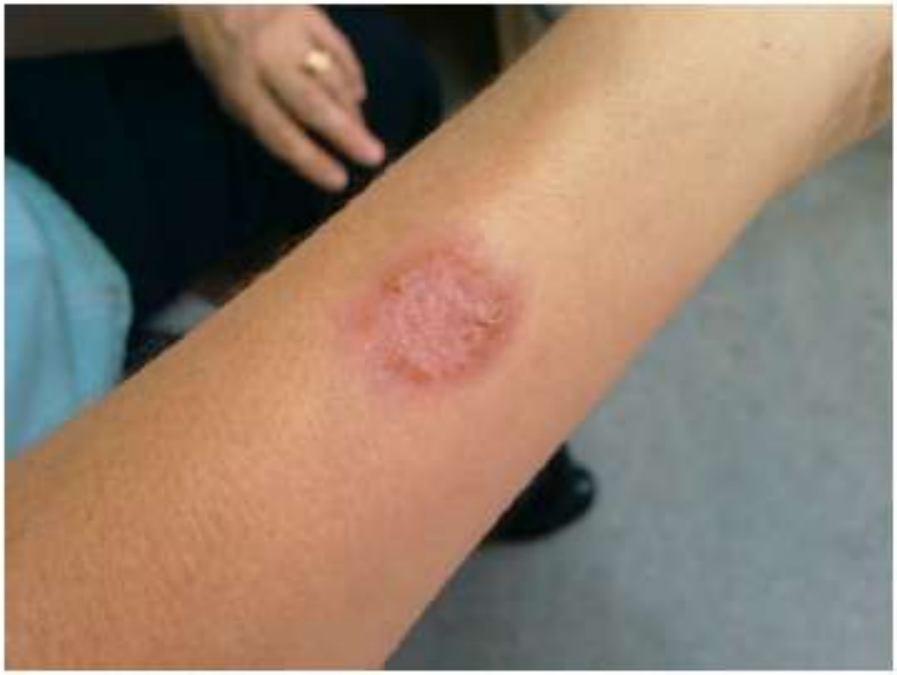
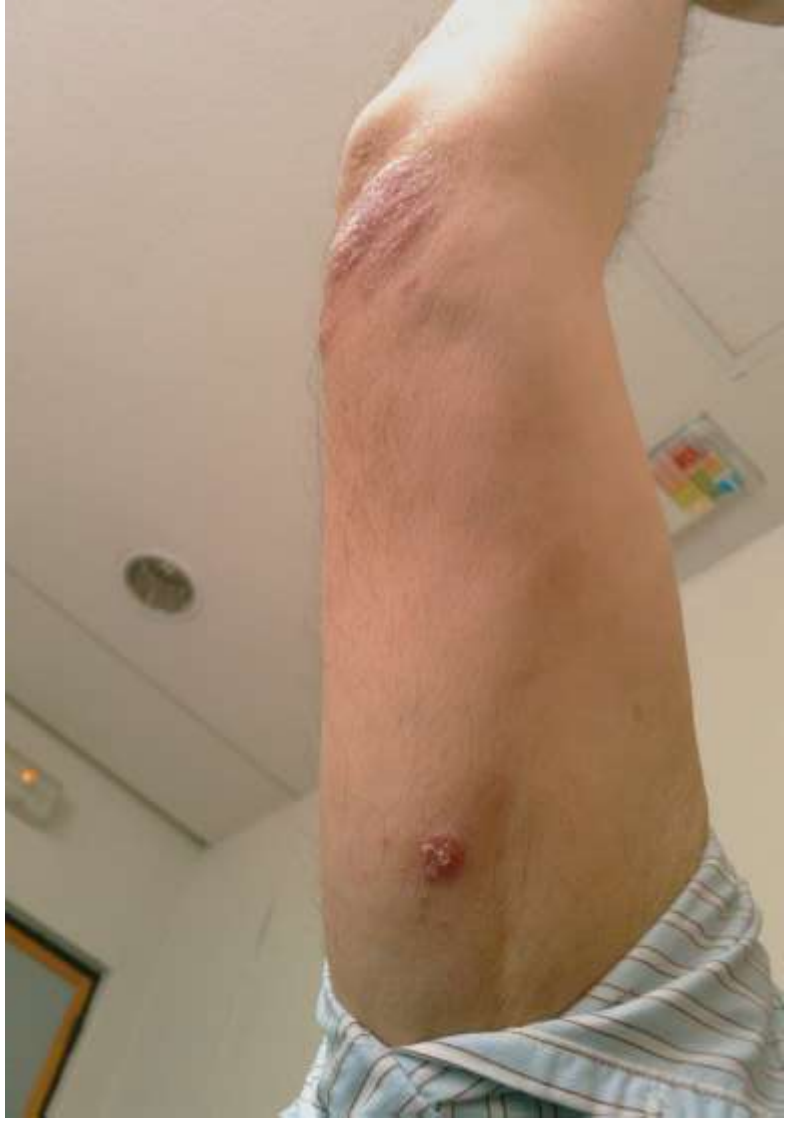
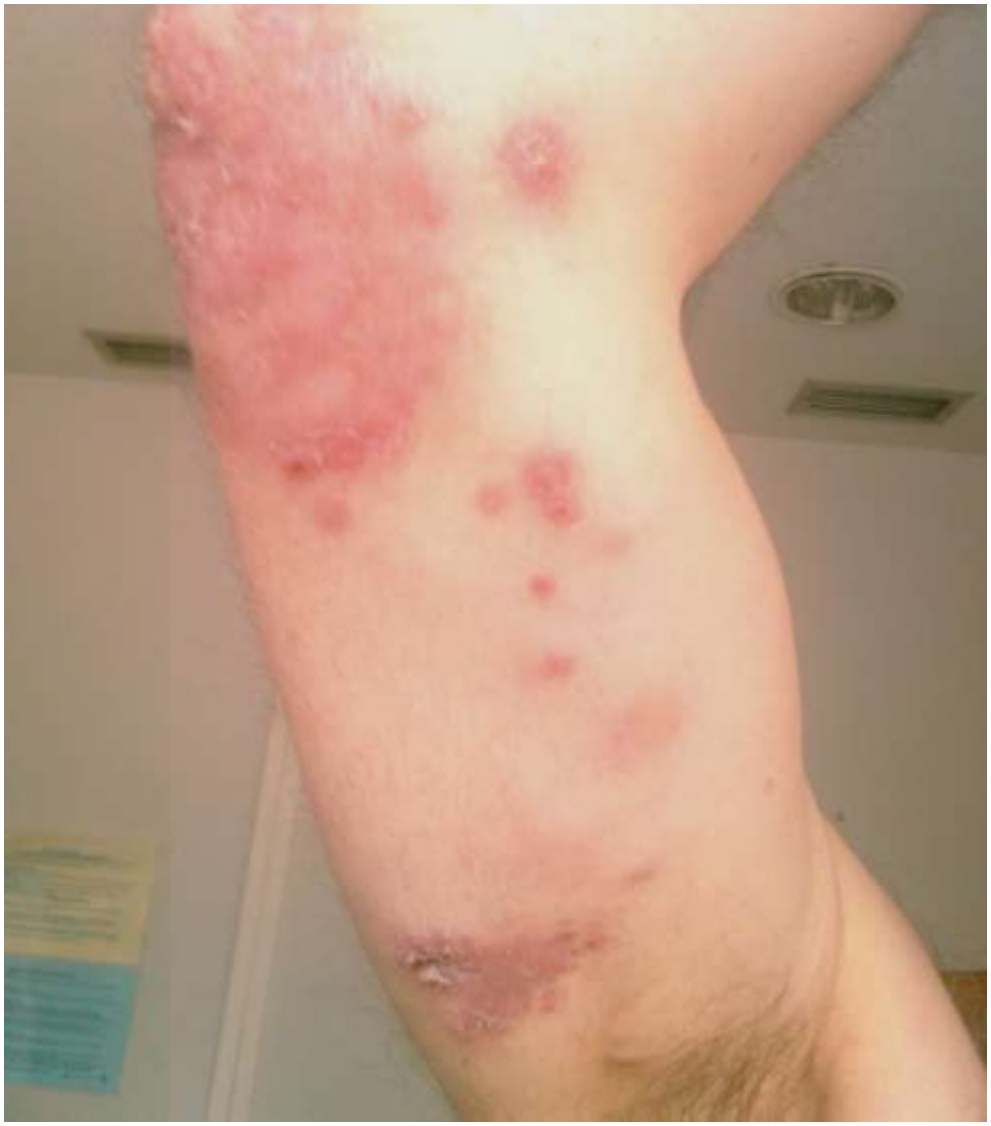


Figura 3. Lesión en antebrazo derecho tras tratamiento.

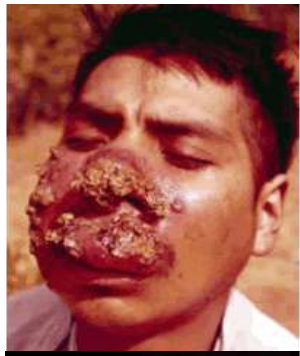


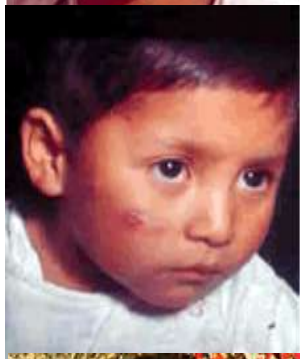
Antimoniales pentavalentes intralesionales
Crioterapia
Anfotericina B liposomal



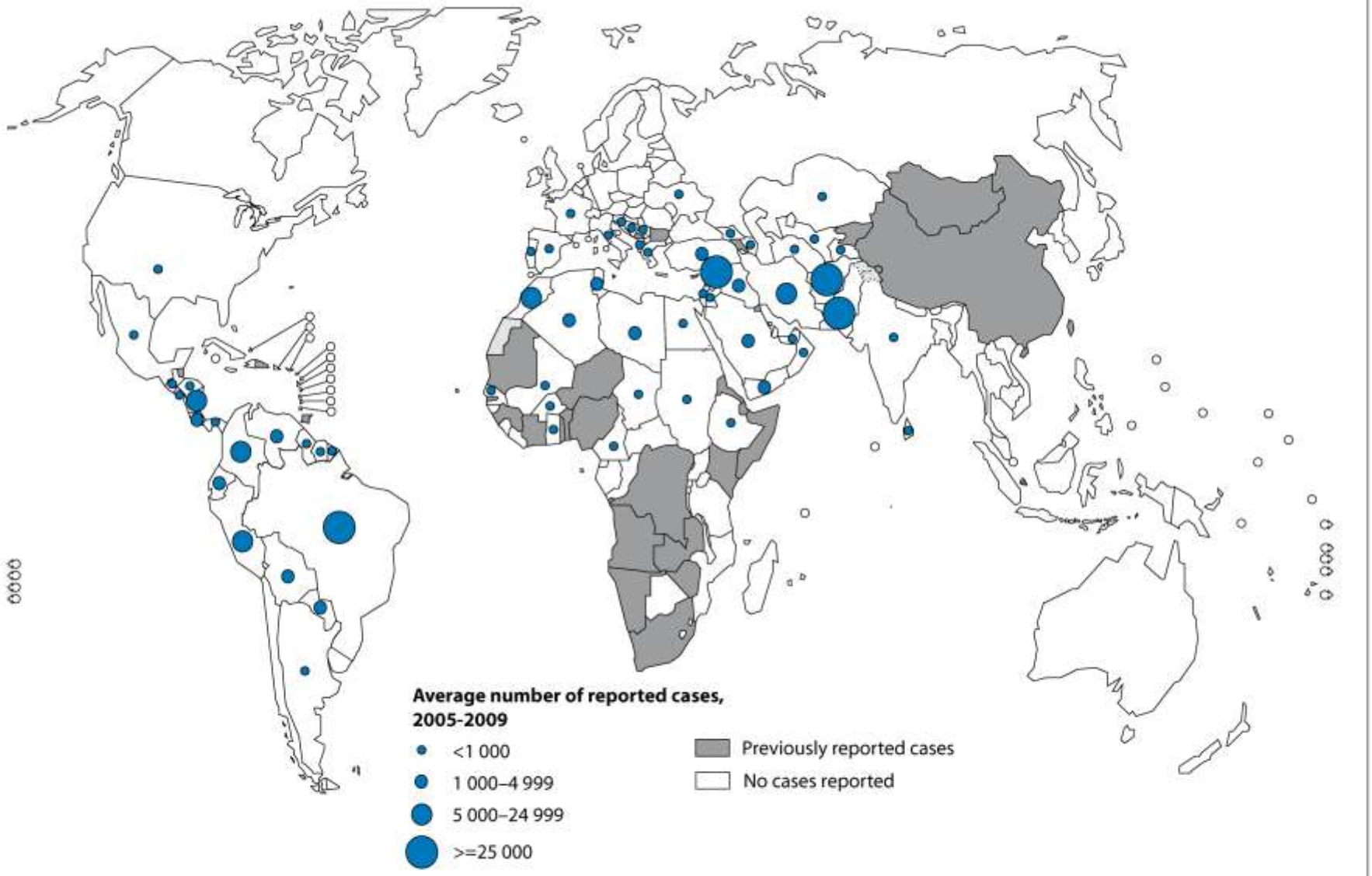
LEISHMANIASIS

Species	Type of disease	Reservoir hosts	Geographic distribution	Vector
Cutaneous Leishmaniasis[a]				
L. tropica minor	Dry cutaneous	Rodents, dogs	Southern Europe, Middle East	*Phlebotomus* spp.
L. tropica major	Wet cutaneous, oriental sore	Rodents, dogs	Southern Europe, Africa, Middle East	*Phlebotomus* spp.
L. aethiopica	Diffuse or dry cutaneous	*Hyrax* sp.	Ethiopia, Kenya	*Phlebotomus* spp.
L. braziliensis braziliensis	Espundia, mucocutaneous	Rodents	Mexico, Brazil	*Lutzomyia* spp., *Psychodopypus* spp.
L. peruviana	Uta, cutaneous	Dogs	Peru	*Lutzomyia* spp.
L. mexicana mexicana	Chiclero ulcer, cutaneous	Rodents	Central America	*Lutzomyia* spp.
L. mexicana amazonensis	Diffuse, cutaneous	Rodents	Amazonas region	*Lutzomyia* spp.
L. mexicana pifanoi	Cutaneous, mucocutaneous	Rodents	Venezuela	*Lutzomyia* spp.
Visceral Leishmaniasis				
L. donovani donovani	Kala-azar, dum-dum fever, visceral	Dogs, foxes	Africa, Asia, Middle East, Southern Russia, South America	*Phlebotomus* spp.
L. donovani infantum	Visceral, infantile	Dogs	Mediterranean countries	*Phlebotomus* spp.
L. donovani chagasi[b]	Visceral	Foxes, cats, dogs	South America	*Lutzomyia* spp.





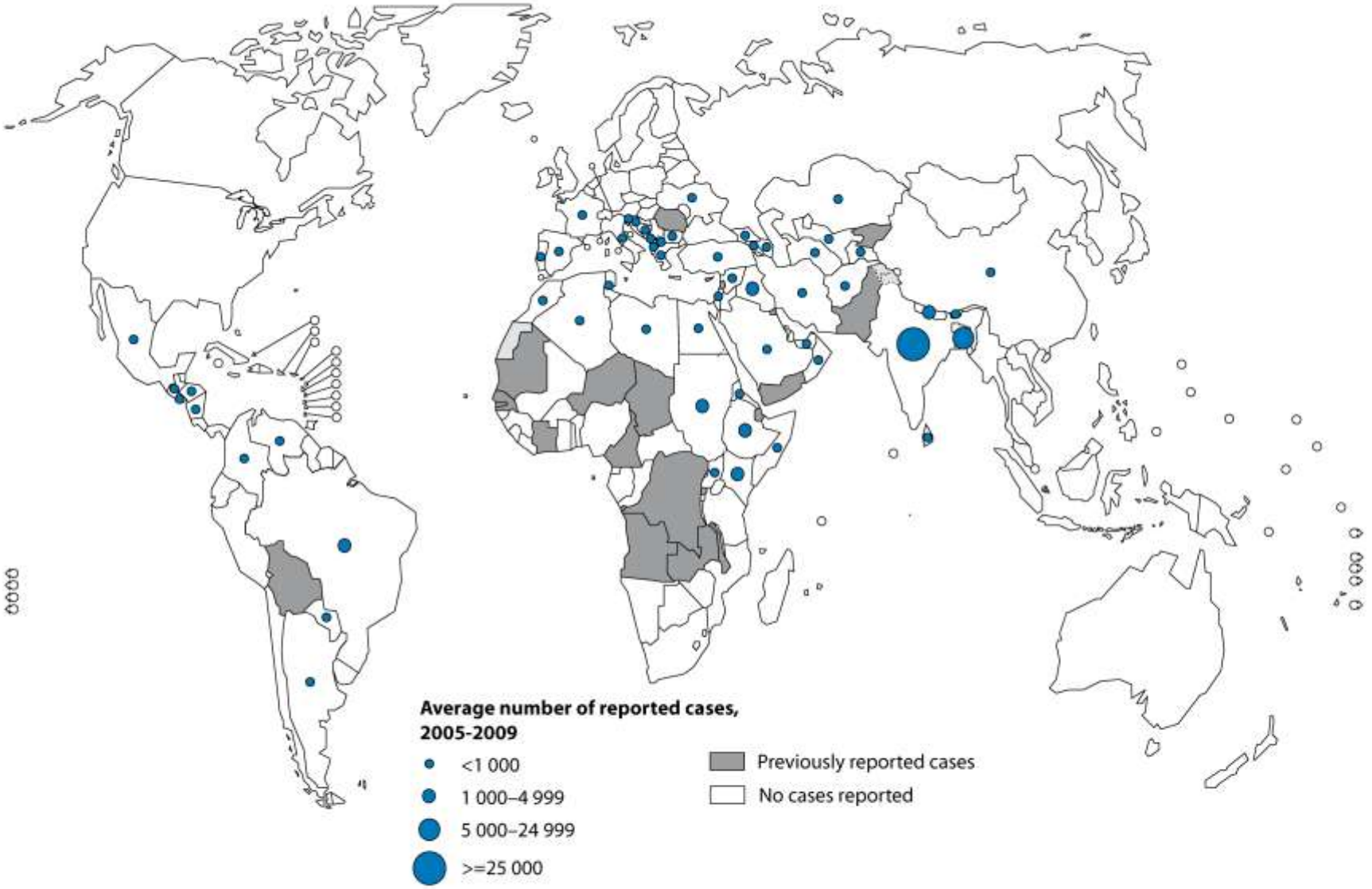
Distribution of cutaneous leishmaniasis, worldwide, 2009



Data Source: World Health Organization
Map Production: Control of Neglected Tropical Diseases (NTD)
World Health Organization

World Health Organization

Distribution of visceral leishmaniasis, worldwide, 2009



Data Source: World Health Organization
Map Production: Control of Neglected Tropical Diseases (NTD)
World Health Organization

World Health Organization

Actas Dermosifiliogr. 2013;104(4):334–342

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ORIGINAL

Brote de leishmaniasis cutánea en el municipio de Fuenlabrada

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Disponible en Internet el 16 de enero de 2013

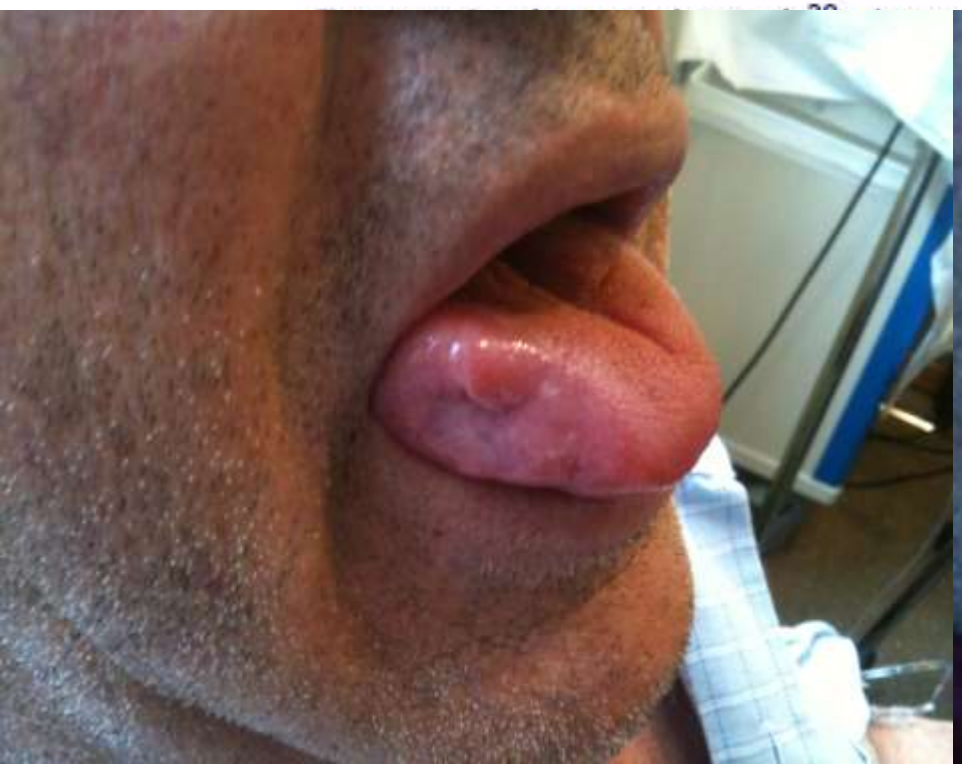
Tabla 1 Notificaciones de leishmaniasis entre julio de 2009 y diciembre de 2011 en los municipios de Fuenlabrada, Leganés y Getafe

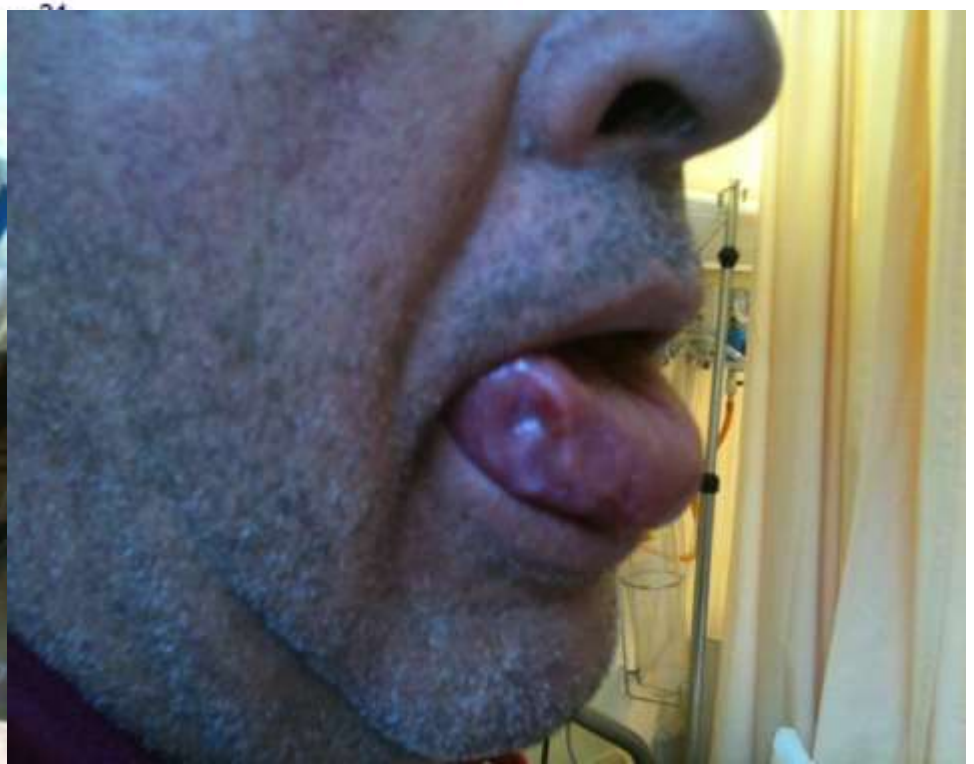
	Leishmaniasis visceral		Leishmaniasis cutánea		Total	
	N	TI	N	TI	N	TI
Fuenlabrada	67	12,05	108	19,43	175	31,48
Leganés	18	3,85	7	1,5	25	5,34
Getafe	8	1,89	1	0,24	9	2,14
Total	93	10,71	116	13,36	209	24,08

N: número de pacientes; TI: tasa de incidencia.
Fuente: Tomada de Brote comunitario de leishmaniasis en los municipios de Fuenlabrada, Leganés y Getafe (2009-2011)[2].

Tabla 5 Indicaciones de tratamiento sistémico en la leishmaniasis cutánea

Lesiones de gran tamaño (> 4 cm)
Múltiples lesiones (> 5)
Falta de respuesta a tratamiento tópico
Datos de diseminación locorregional
Pacientes inmunodeprimidos (VIH)
Lesiones en cara, orejas
Lesiones en manos y pies
Lesiones localizadas en zonas que puedan originar déficit funcionales





Chagas

Enfermedad olvidada

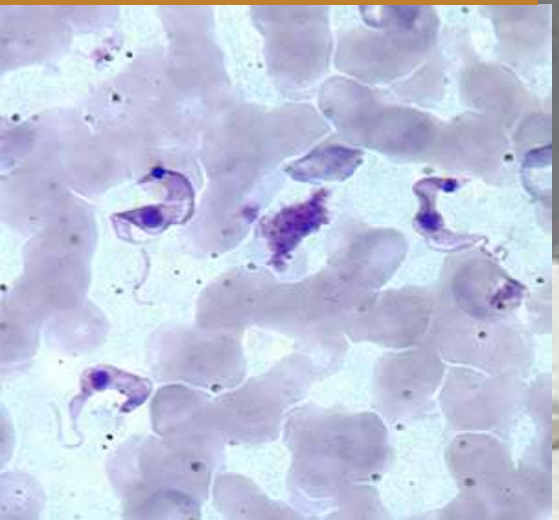
Enfermedad transmisible

Chagas

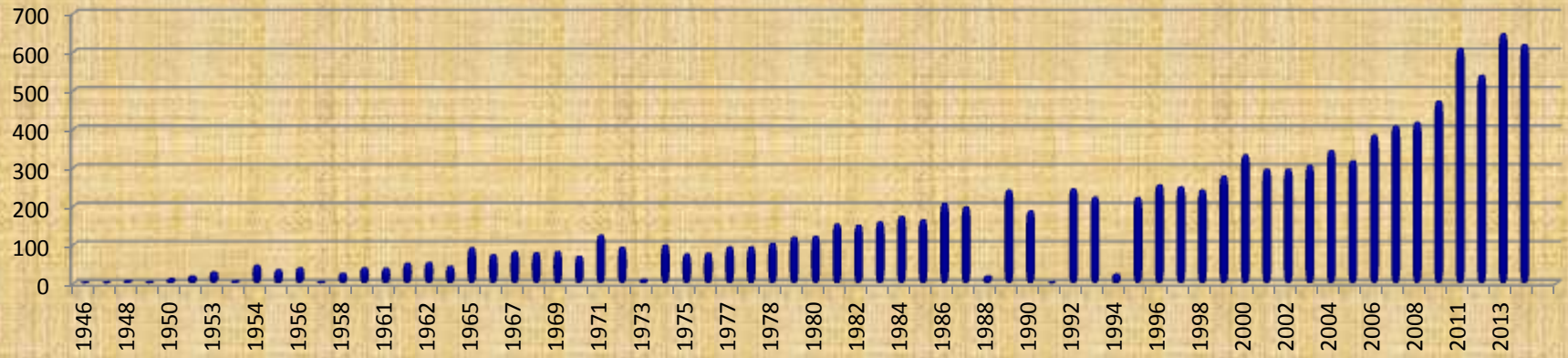
Enfermedad olvidada

Enfermedad transmisible

Trypanosoma cruzi



ARTICULOS PUBLICADOS

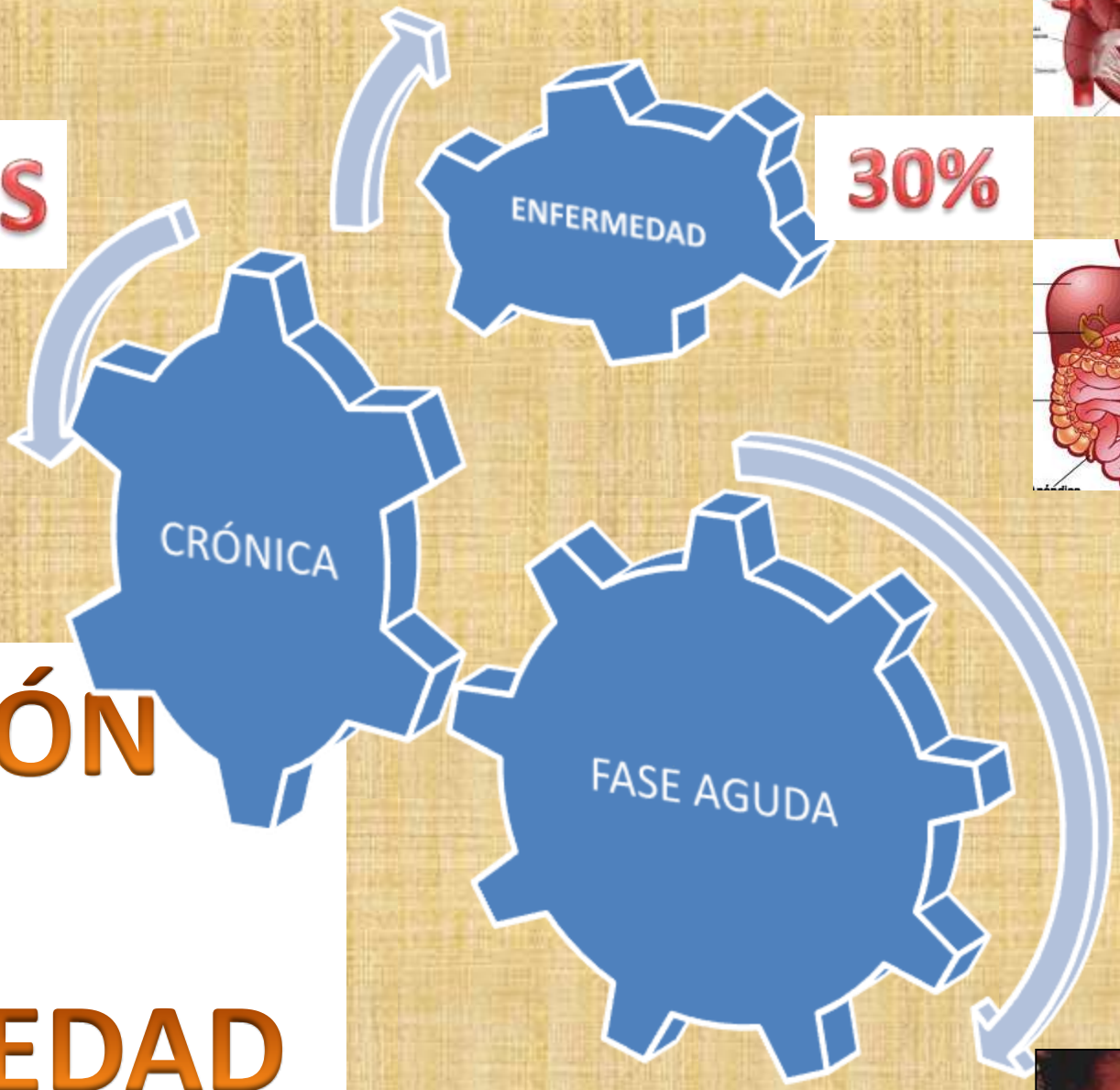


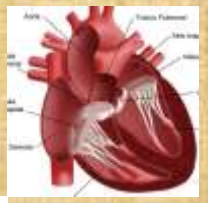
- 1908
  - •PARÁSITO
- 1922-1923
  - •AGUDA
  - •CARDIOPATÍA
  - •BOCIO
- 1935
  - •IX MEPRA
  - •MENDOZA
- 1950
  - •MAPAS DE DISTRIBUCIÓN
- 1956
  - •CIRCULATION
- INMIGRACIÓN A EE.UU
- INMIGRACIÓN A ESPAÑA

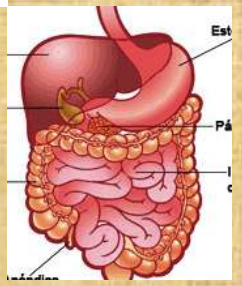
EVOLUCIÓN DE LA ENFERMEDAD

15-30 AÑOS

30%







COMPONENTES DEL PROGRAMA NACIONAL DE CHAGAS

Documento de Consenso

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Control de la infección por *Trypanosoma cruzi* / Enfermedad de Chagas en gestantes Latinoamericanas y sus hijos

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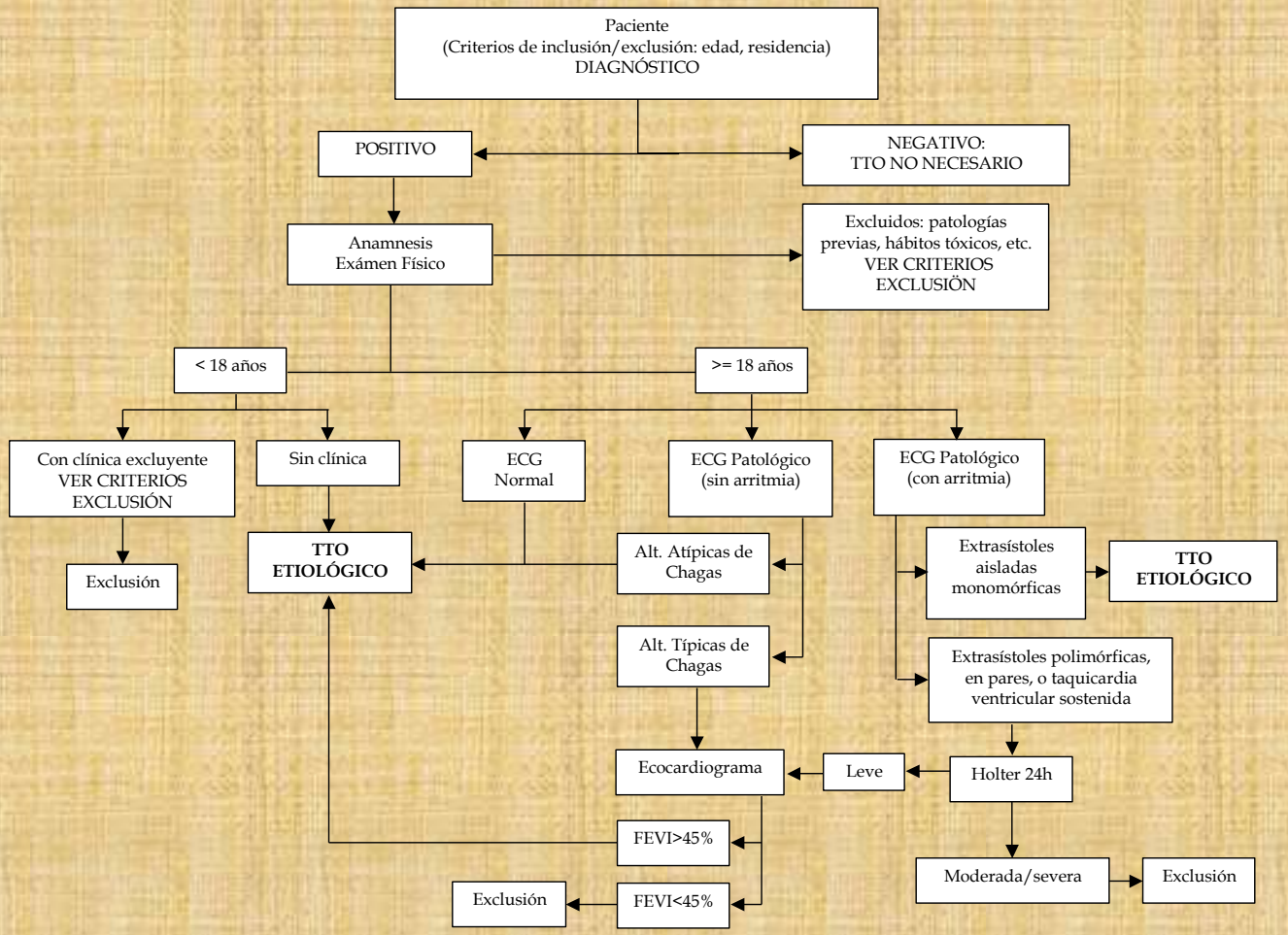
Protocolo de Estudio y Manejo Clínico de la Patología Cardiaca y Digestiva de la Enfermedad de Chagas Crónica (Tratamiento no etiológico) Cochabamba - 2007

Tabla 6. Clasificación de la alteración miocárdica en la cardiopatía chagásica crónica.

Estadios	Electrocardiograma	Ecocardiograma	Insuficiencia cardiaca
A	Alterado	Normal	Ausente
B1	Alterado	Alterado FEVI>45%	Ausente
B2	Alterado	Alterado FEVI<45%	Ausente
C	Alterado	Alterado	Compensable
D	Alterado	Alterado	Refractaria al tratamiento

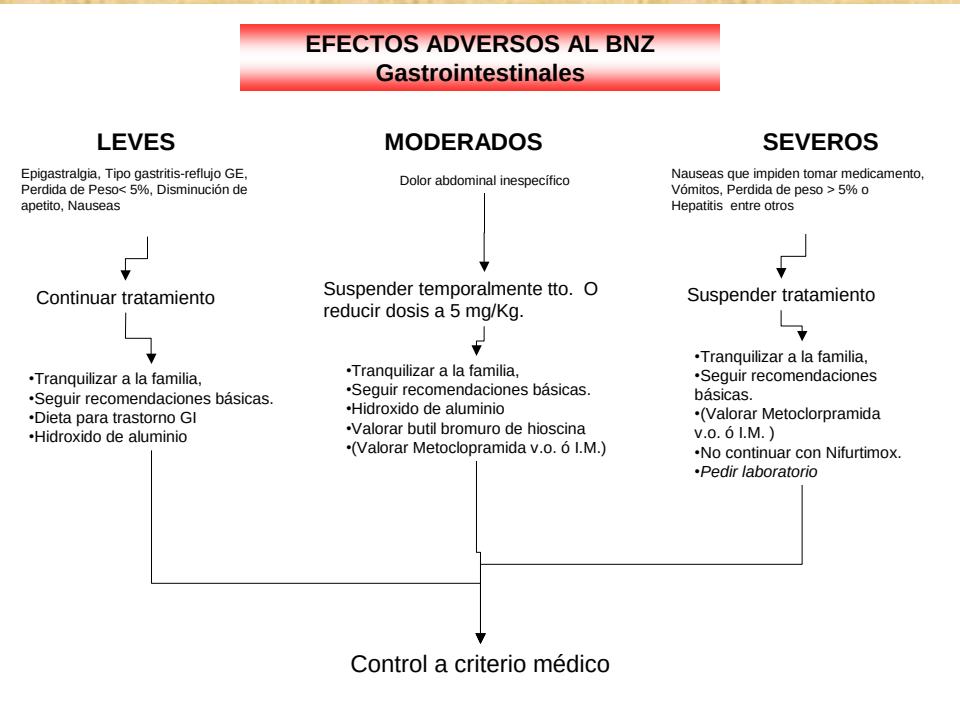
Fuente: Ministério da Saúde Brasil. Consenso Brasileiro em Doença de Chagas [en Portugués]. Revista da Sociedade Brasileira de Medicina Tropical 38 Suplemento 3: 7-29, 2005.

FLUJOGRAMA DE PACIENTES



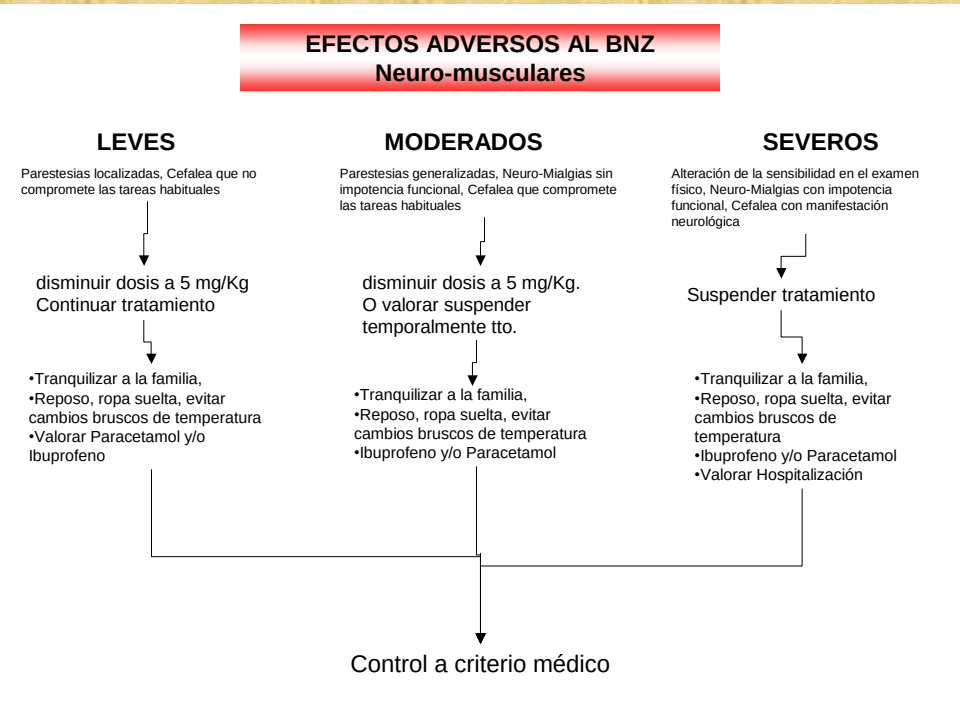
BENZNIDAZOL 5 mg/Kg/día

(No sobrepasar los 300 mg/día)



BENZNIDAZOL 5 mg/Kg/día

(No sobrepasar los 300 mg/día)



EFECTOS ADVERSOS AL BNZ
Cutáneos

LEVES

Prurito localizado o generalizado que no condiciona la realización de tareas habituales, Eritema localizado, con o sin prurito, Erupción papular *no inflamatoria localizada*, con o sin prurito

Continuar tratamiento

- •Tranquilizar a la familia
- •Seguir recomendaciones básicas
  - •Evitar el sol, calor excesivo, Se recomiendan baños frios, higiene estricta.
  - •reducir alimentos estimulantes o alergenos mas comunes (café, te, cola, chocolate, picantes, frutos secos, alimentos enlatados y conservas)
- •Valorar Clorferinamina/Loratadina
- •Valorar uso de loción de calamina Y/o *pomada de hidrocortisona*
- *•Control clínico cada día, si no mejora en 4 días, tratar como moderado.*

MODERADOS

Exantema pápulo-macular, no ampollar ni descamativo, localizado, con o sin prurito, Urticaria localizada sin signos de compromiso sistemico, Prurito que condiciona la realización de tareas habituales. *Exantema papular inflamatorio localizado*.

Suspender temporalmente tto.

- •Tranquilizar a la familia,
- •Seguir recomendaciones básicas.
- •Tto tópico corticoide (y/o antihistaminico)
- •Valorar corticoide oral y/o Clorferinamina
- •Sobre infección: valorar Cloxacilina, Eritro o Penicilinas orales.
- *•Control clínico cada día*
- *•Si empeora, tratar como grave*

SEVEROS

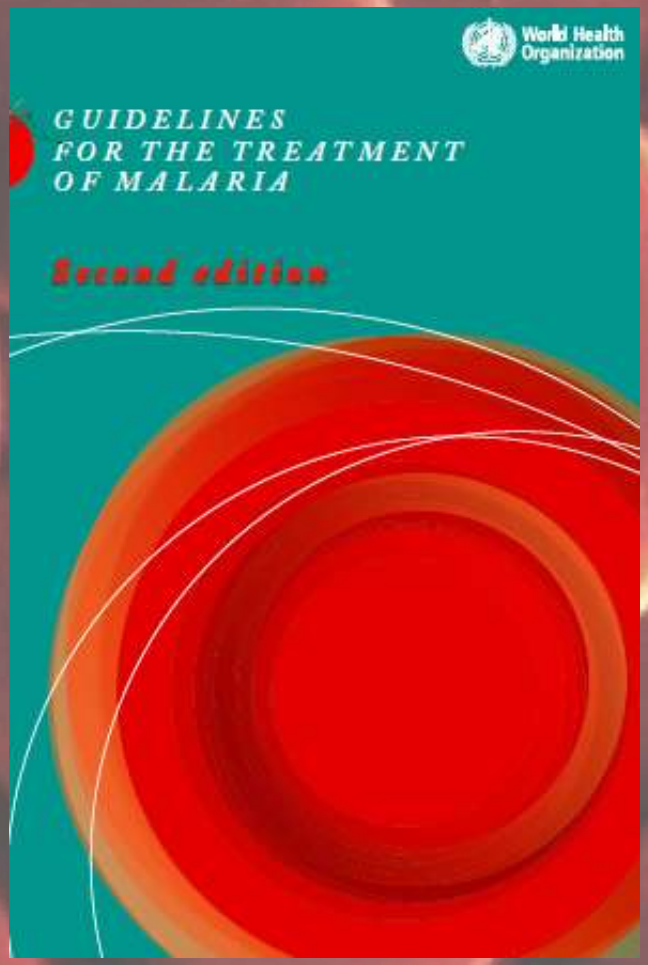
Afección muco-cutánea, Exantema *maculo-papular o papular* generalizado, Urticaria generalizada, o con signos de anafilaxia, Síndrome de Stevens-Johnson (SJS) o Necrólisis Epidérmica Tóxica (NET) entre otros

Suspender tratamiento

- •Seguir recomendaciones básicas.
- Hospitalización corticoides oral o inyectable
- *Control clinico una vez al día o más, si necesario*

Control a criterio médico

PALUDISMO


World Health Organization
GUIDELINES FOR THE TREATMENT OF MALARIA
Second edition

Hembra del mosquito Anophels

Plasmodium sp

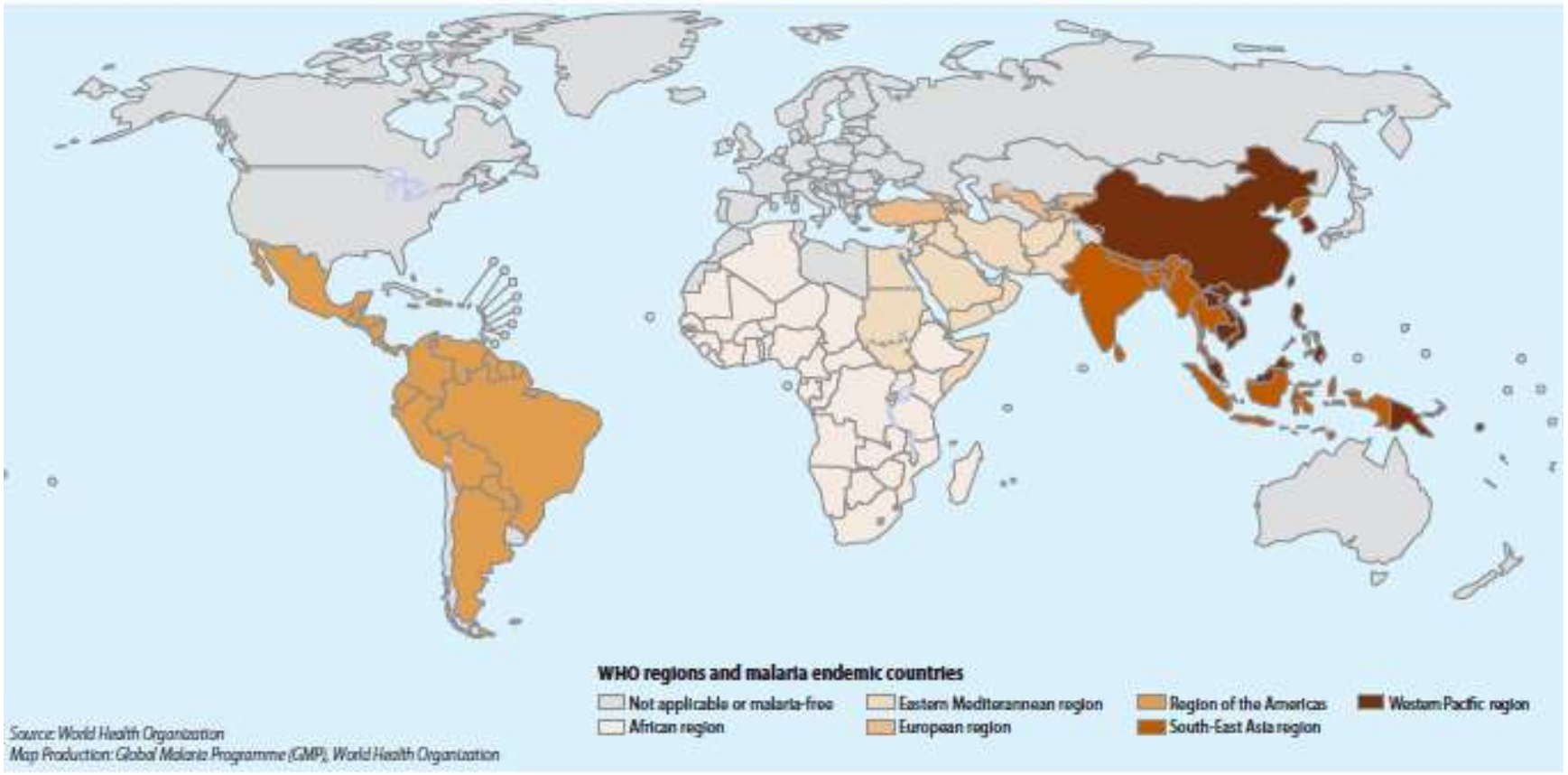
-P.falciparum

-P. vivax

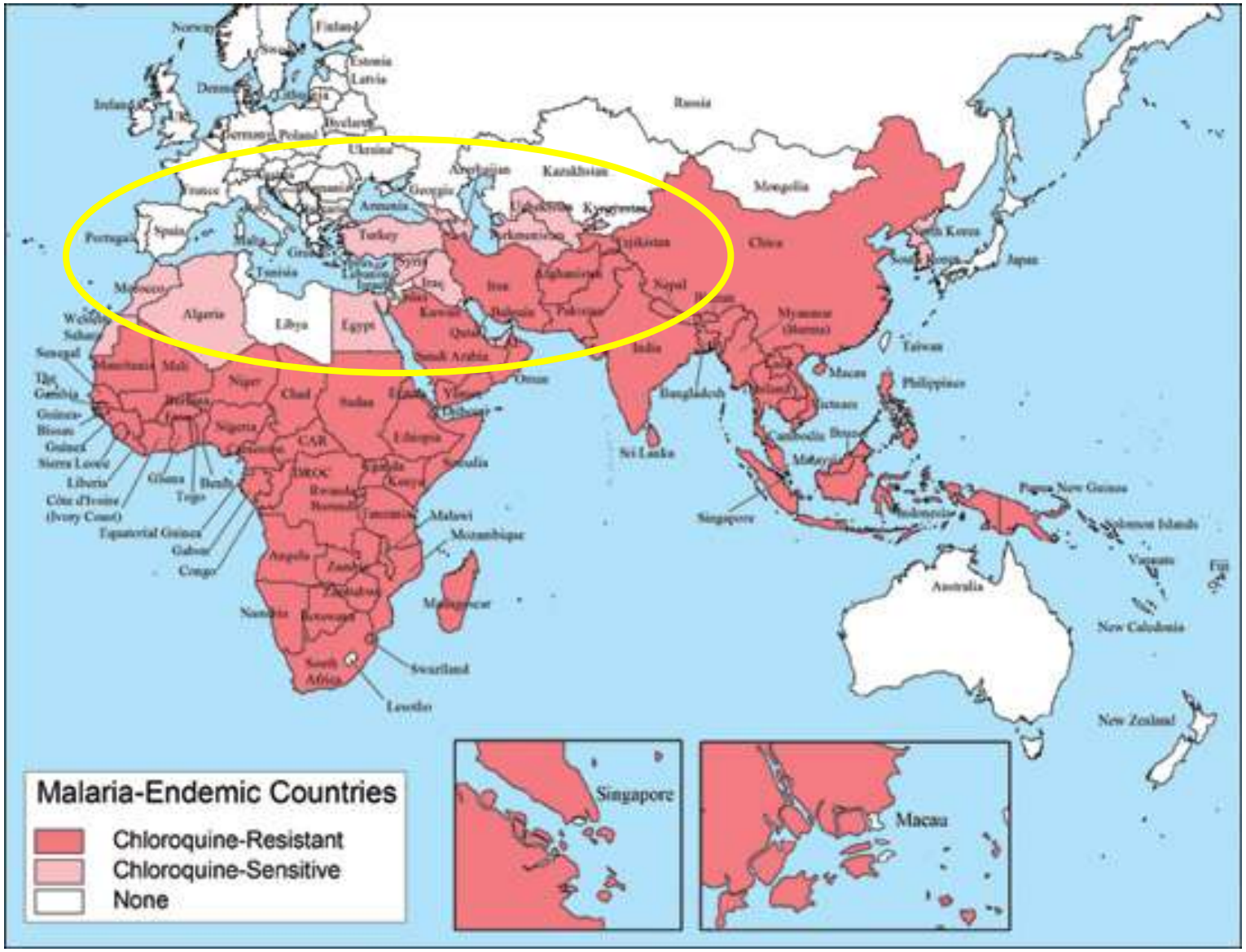
-P. ovale

-P.malariae

-P.knowlesi


WHO regions and malaria endemic countries
Not applicable or malaria-free
African region
Eastern Mediterranean region
European region
Region of the Americas
South-East Asia region
Western Pacific region
Source: World Health Organization
Map Production: Global Malaria Programme (GMP), World Health Organization


Mexico
Cuba
Dominican Republic
Belize
Haiti
Honduras
Guatemala
Panama
El Salvador
Nicaragua
Costa Rica
Guyana
Suriname
French Guiana
Venezuela
Colombia
Ecuador
Peru
Brazil
Bolivia
Paraguay
Chile
Argentina
Uruguay
Falkland Islands
Malaria-Endemic Countries
Chloroquine-Resistant
Chloroquine-Sensitive
None


Malaria-Endemic Countries
Chloroquine-Resistant
Chloroquine-Sensitive
None
Singapore
Macau

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ACTUALIZACIÓN CLÍNICA

Aspectos básicos en la práctica actual de la medicina clínica en el trópico (I). Enfermedades parasitarias

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Tabla 2 Indicadores de malaria grave por *P. falciparum*

Clínicos

a. Alteración del nivel de conciencia o coma
b. Incapacidad para caminar o sentarse
c. Incapacidad para comer
d. Convulsiones repetidas (más de 2 en 24 horas)
e. Dificultad respiratoria o respiración de Kussmaul
f. Hipotensión (adultos sistólica < 70 mmHg; niños < 50 mmHg)
g. Ictericia y disfunción de algún órgano
h. Hemoglobinuria
i. Sangrado espontáneo
j. Edema radiológico pulmonar

Analíticos

a. Hipoglucemia (glucosa < 40 mg/dL)
b. Acidosis metabólica (bicarbonato < 15 mmol/l)
c. Anemia normocítica grave (Hb < 5 g/dl, o Htco < 15%)
d. Hemoglobinuria
e. Hiperparasitemia (> 2% en zonas de baja transmisión y 5% en zonas de alta transmisión estable)
f. Hiperlactatemia (lactato > 5 mmol/l)
g. Fracaso renal (creatinina sérica > 3 mg/dl)

Tratamiento de la malaria

Entidad	Dosis adulto	Dosis pediátrica
Malaria no complicada[a]		
Plasmodium falciparum sensible a cloroquina, *Plasmodium vivax*, *Plasmodium ovale*, *Plasmodium malariae* y *Plasmodium knowlesi*	Cloroquina v.o. 25 mg/kg de base, dosis total, dividido en una dosis diaria (10-10-5 mg/kg) durante 3 días, o administrado a las 0, 6, 24 y 48 h (10-5-5-5 mg/kg)	Cloroquina v.o. 25 mg/kg de base, dividido como en los adultos, sin sobrepasar 600 mg de base.
	En los casos de malaria por *P.vivax* y *P. ovale* añadir, además, tratamiento erradicador con primaquina v.o. 30 mg/kg de base al día durante 14 días[b]	Primaquina v.o. 0,6 mg/kg de base al día durante 14 días[b] para el tratamiento erradicador
P. vivax resistente a cloroquina	Quinina (base)[c] v.o. 25 mg/kg día en 3 dosis de 3 a 7 días, más: Doxiciclina v.o. 100 mg/12 h, 7 días o Tetraciclina v.o. 250 mg/6h, 7 días o Clindamicina v.o. 20 mg/kg día divididos cada 12 o 6 h, 7 días o	Quinina (base)[c] v.o. 25 mg/kg día en tres dosis de 3 a 7 días más Doxiciclina v.o. 4 mg/kg/día/ en 2 dosis, 7 días. Niños mayores de 8 años Clindamicina v.o. 20 mg/kg día dividido en 2 o 4 dosis
	Mefloquina[e] v.o. 25 mg/kg base, administrada en 2 dosis de 15–10 mg/kg separadas por 6–24 h. Con ambas pautas, añadir primaquina en las dosis descritas previamente	Mefloquina[e] v.o. 25 mg/kg base, administrada en 2 dosis de 15–10 mg/kg separadas por 6–24 h
	Atovacuona-proguanil[d] v.o. 4 comprimidos (250 mg atovacuona + 100 mg de proguanil) uvd durante 3 días	Atovacuona-proguanil[d] v.o: < 5 kg: no indicada 5–8 kg: 2 comp pediátricos/día, 3 días 9–10 kg: 3 comp pediátricos/día, 3 días 11–20 kg:1 comp adulto/día, 3 días 21–30 kg:2 comp adulto/día, 3 días

Tabla 3 (*continuación*)

Entidad	Dosis adulto	Dosis pediátrica
		31–40 kg: 3 comp adulto/día, 3 días > 40 kg: igual que en adultos
	Artemether-lumefantrina v.o. 4 comprimidos (20 mg arthemeter+120 mg lumefantrina), a las 0 y 8 h el primer día y luego cada 12 h 2 días más (24 comp. en total)	Artemether-lumefantrina v.o: 5–14 kg: 1 comp 0-8-24-36-48-60 h 15–24 kg: 2 comp 0-8-24-36-48-60 h 25–35 kg: 3 comp 0-8-24-36-48-60 h.
P. falciparum resistente a cloroquina	Quinina más doxiciclina, tetraciclina o clindamicina igual que la anterior Mefloquina[e] igual que la anterior Atovacuona-proguanil[d] v.o. igual que el anterior Artemether-lumefantrina v.o. igual que el anterior	Quinina más doxiciclina, o clindamicina igual que la anterior Mefloquina igual que la anterior Atovacuona-proguanil[d] v.o. igual que el anterior Artemether-lumefantrina v.o. igual que el anterior
Malaria grave	Quinina[f] i.v. 20 mg sal/kg como dosis de carga administrada en 4 h, seguida de 10 mg sal/kg cada 8 h tras la dosis de carga, de 3 a 7 días. Asociar a:	Quinina[f] i.v. 20 mg sal/kg como dosis de carga administrada en 4 h, seguida de 10 mg sal/kg cada 8 h tras la dosis de carga (máximo 1.800 mg al día), de 3 a 7 días. Asociar a:
	Doxiciclina i.v. 100 mg dvd. y pasar a oral en cuanto sea posible, 7 días, o tetraciclina v.o. 250 mg cvd, 7 días o Clindamicina i.v. 10 mg/kg como dosis de carga seguido de 5 mg/kg cada 8 h y pasar a vía oral en cuanto sea posible, 7 días Quinidina (gluconato) i.v.: 6,25 mg base/kg (=10 mg sal/kg) como dosis de carga en 1–2 h, seguido de 0,0125 mg base/kg/min (=0,02 mg sal/kg/min) en infusión continua al menos durante 24 h. Como pauta alternativa puede dosificarse 15 mg base/kg (=24 mg sal/kg) como dosis de carga infundido en 4 h, seguido de 7,5 mg base/kg (=12 mg sal/kg) infundido en 4 h cada 8 h a partir de la dosis de carga. Una vez que la parasitación es < 1% y el paciente tolera vía oral, completar el tratamiento con quinina oral Añadir doxiciclina, tetraciclina o clindamicina como en la pauta anterior Artesunato* 2,4 mg/kg i.v. o i.m. Dosis basal, a las 12 h y a las 24 h Después, una dosis diaria hasta que la vía oral sea posible o el tratamiento haya finalizado (7 días) Como alternativa: artemether* 3,2 mg/kg i.m. como dosis de carga, seguido de 1,6 mg/kg al día	Clindamicina i.v. 20–40 mg/kg/día i.v. dividido en 3 dosis Artesunato* 2,4 mg/kg i.v. o i.m. Dosis basal, a las 12 h y a las 24 h. Después, una dosis diaria hasta que la vía oral sea posible o el tratamiento haya finalizado (7 días) Como alternativa: artemether* 3,2 mg/kg i.m. como dosis de carga, seguido de 1,6 mg/kg al día

cvd: cuatro veces al día; dvd: dos veces al día; i.m.: intramuscular; i.v.: intravenoso; uvd: una vez al día; v.o.: vía oral.

[a] En el embarazo está contraindicado el uso de primaquina y doxiciclina. Con atovacuona y clindamicina existen pocos datos, por lo que por lo general no se recomienda. En el caso de infecciones por *P. vivax* o *P.ovale* durante el embarazo se diferirá la cura radical con primaquina hasta después del parto, y se mantendrá a la embarazada en profilaxis con cloroquina una vez tratado el episodio agudo. En los casos de paludismo resistente se valorará el riesgo-beneficio del uso de fármacos como atovacuona proguanil, clindamicina o doxicilina.

[b] La primaquina se utiliza para eliminar las formas durmientes hepáticas de ambas especies y prevenir las recaídas. Dado que la primaquina puede causar anemia hemolítica en personas con déficit de glucosa 6 fosfato deshidrogenasa (G6PDH) los pacientes deben estudiarse previamente a su administración. Si existe un déficit parcial, se puede administrar en dosis de 45 mg a la semana durante 8 semanas. En Oceanía y el sudeste asiático puede ser recomendable doblar la dosis de primaquina debido a la aparición de cepas resistentes.

[c] Para las infecciones adquiridas en África y Sudamérica, la quinina se administra 3 días mientras que en las adquiridas en el sudeste asiático se recomiendan 7 días.

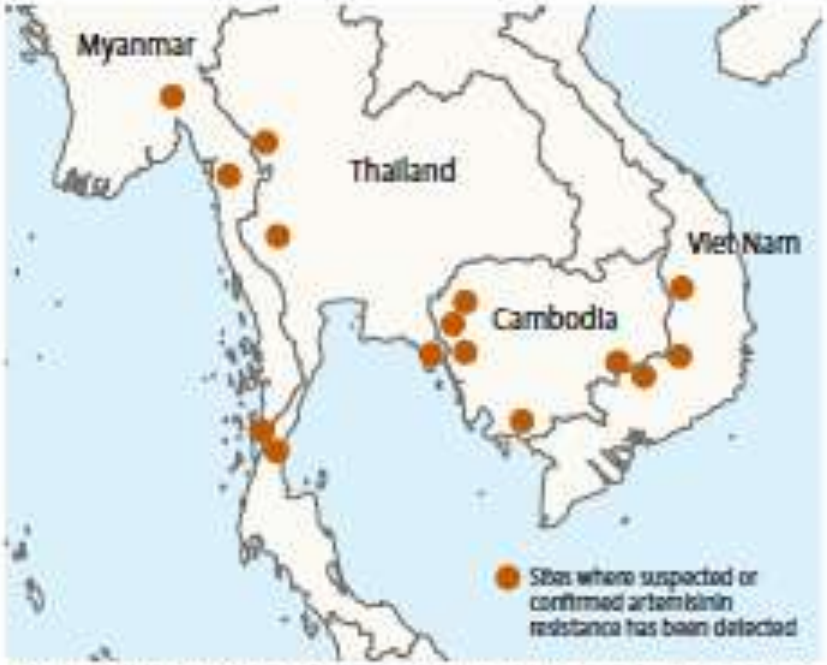
[d] Administrar con comida.

[e] La mefloquina por su toxicidad en el sistema nervioso central se considera como segunda opción.

[f] El uso de quinina o quinidina i.v. requiere de una monitorización en una unidad de cuidados intensivos por la potencial aparición de arritmias fatales o hipoglucemia. Si el paciente ha recibido previamente mefloquina o quinina, no se usará dosis de carga.

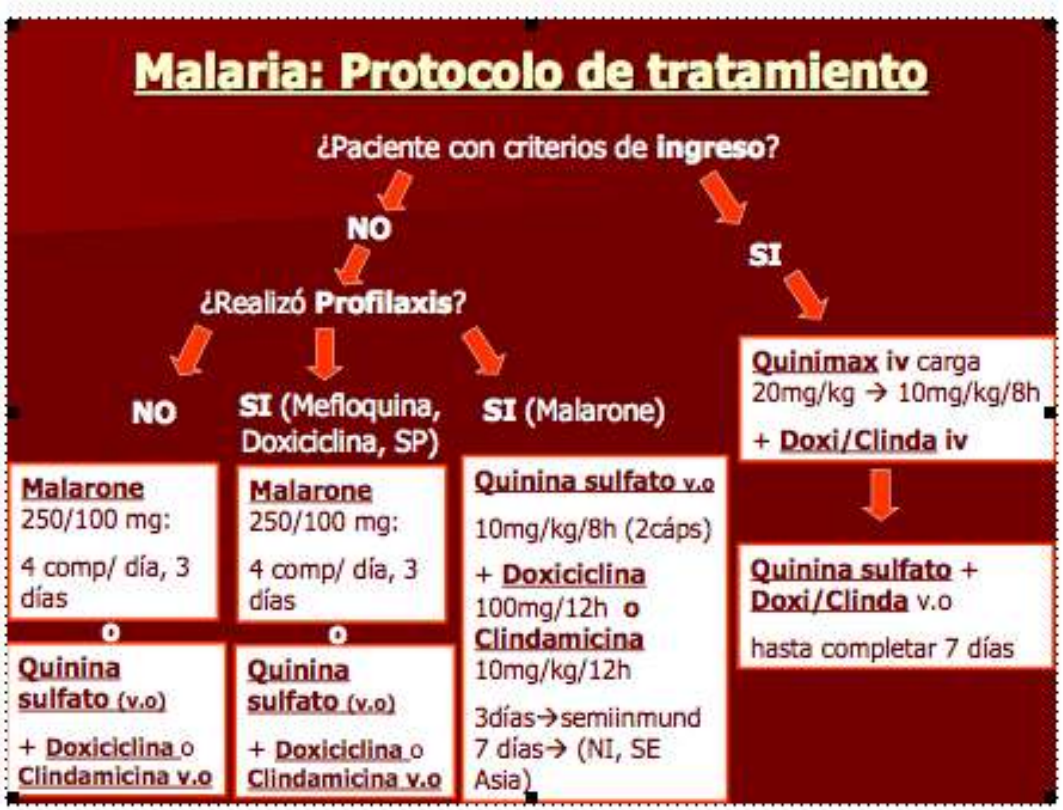
[*] Los derivados parenterales de las artemisininas no están disponibles en nuestro país.

Figure 6.17 Sites where suspected or confirmed artemisinin resistance has been detected in therapeutic efficacy studies, Mekong subregion, 2007–2012



Map production: Global Malaria Programme (GMP), World Health Organization; Source of data: WHO Global Database on Antimalarial Drug Efficacy, as of November, 2012

HCSC



*El tratamiento es independiente de la especie de *Plasmodium*