antiprotozoal

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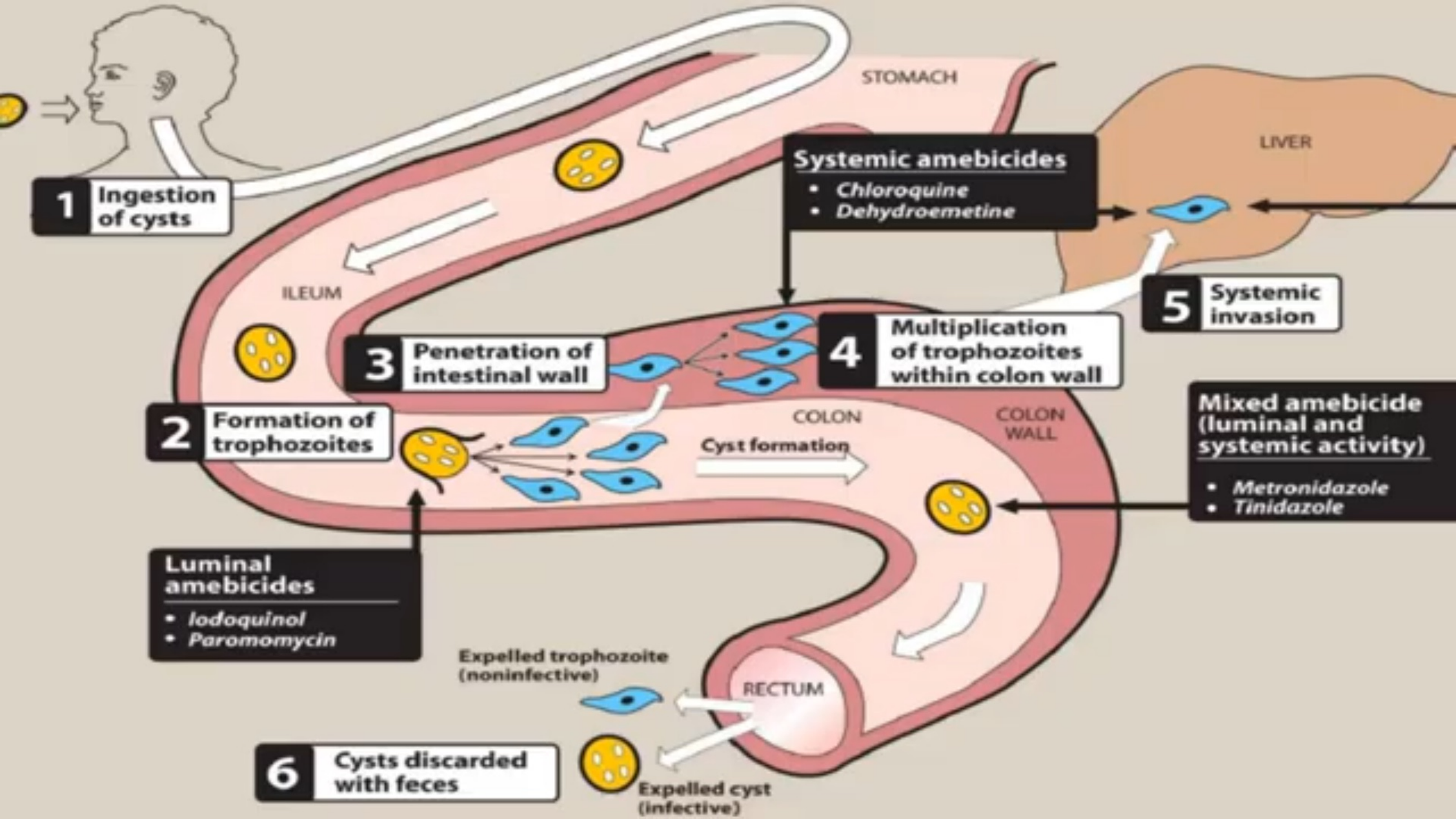
Protozoan parasites that cause human diseases are prevalent in underdeveloped tropical and subtropical countries, where sanitary conditions, hygienic practices, and control of the vectors of transmission are inadequate

Chemotherapy for Amebiasis

Amebiasis (amebic dysentery) is an infection of the intestinal tract caused by Entamoeba histolytica. E. histolytica is endemic in developing countries and is mainly transmitted via the fecal–oral route or through ingestion of contaminated food or water.


1 Ingestion of cysts
STOMACH
LIVER
Systemic amebicides
• Chloroquine
• Dehydroemetine
ILEUM
5 Systemic invasion
3 Penetration of intestinal wall
4 Multiplication of trophozoites within colon wall
2 Formation of trophozoites
COLON
COLON WALL
Cyst formation
Mixed amebicide (luminal and systemic activity)
• Metronidazole
• Tinidazole
Luminal amebicides
• Iodoquinol
• Paromomycin
Expelled trophozoite (noninfective)
RECTUM
6 Cysts discarded with feces
Expelled cyst (infective)

Intraluminal amebicides : هتشتغل بس على Trophozoit اللي جوه cyst form

systemic " : هتشتغل على Invading form اللي هو Trophozoit
اللي بعد بعمل abscess على liver ، يعني طلع من
الـ digestive Tract من الـ Intraluminal

Mixed " بتشتغل على الاتنين (الـ Intraluminal والـ liver) وهو الأفضل

Intraluminal :

* بكون المريض عنده الـ cyst موجودة بس على هيئة كامنة فاحنا assymptomatic
الـ cyst منتظر اي فرصة حتى يتحول لـ Trophozoit والـ Trophozoit
تعمل Invading على الـ lumen.

* الـ cyst اذا لقيتها في الـ Stool analysis الـ Treatment اللي بتيجي بس Intraluminal

لكنه اذا دخل ع systemic الادوية هاي مش هتشتغل (Iodoquinol ① , Paromomycin ② مش موجود في محل الدوكي)
(من عيلة الaminoglycosides)
وكمان هنا متعرضه
- antiprotozoal كـ

diloxanide ③
هو اختيار اي عنا
وضفنا عليها واحد تالت اي هو
وهو الموجود عنا في قطاع غزة

* الاثنان الذي بتعالج من attack بواسطة الـ metronidazole (anti anaerobic bacteria, antiprotozoal)
وبتعالج وراحت الـ symptoms وصار assymptomatic وعلشان نخلص نهائي من cyst لازم ياخد
diloxamide الـ Luminal الازم ياخد

* في تركيب عاملة Combination من الـ metronidazole مع الـ diloxanide بتلاقيها في نفس الـ Tablets
او في نفس السيرب وهو بالاغلب بجي للأطفال.

ال systemic : لواصه صارت بواسطة ال Trophozoit بال liver absess

العلاجات :

- chloroquine (anti malaria)

* ال hydroxochloroquine نفسه سبب انه هاد prodrug

فيتحول في داخل الجسم وهم الاشيء نفس الاشي chloroquine

هي antimalaria بالدرجة

- Dehydroemetine

ال mixed : وهو الاكثر شيوعاً واستخداماً : ال metronidazole (الفلاجيل)

- Tinidazole

يتميز عن الmetronidazole انك تعطي جرعة واحدة فقط وانتهت الاعراض على عكس ال metro... حيث كل 8 ساعات لمدة 10 ايام (لحد ما الsymptoms free)

(ولازم تعطي بعدها ادوية ال metro.. او ال Tin...) diloxanide عشان تنظف ال digestive Tract من ال cyst

Chemotherapy for Giardiasis

It has two life cycle stages: the binucleate trophozoite with four flagella, and the drug-resistant, four-nucleate cyst. Ingestion usually occurs from fecally contaminated drinking water or food, leading to infection. The treatment of choice is **oral *metronidazole*** for 5 days. An alternative is a single dose of ***tinidazole***, which is as effective as *metronidazole* in the treatment of giardiasis. ***Nitazoxanide*, a nitrothiazole** derivative, is also approved for the treatment of giardiasis. For giardiasis, *nitazoxanide* is administered as a 3-day course of oral therapy. The anthelmintic drug ***albendazole*** may also be efficacious for giardiasis, and ***paromomycin*** is sometimes used for treatment of giardiasis in pregnant patients.

Chemotherapy for Toxoplasmosis

One of the most common infections in humans is caused by the protozoan T. gondii, which is transmitted to humans when they consume raw, inadequately cooked infected meat, or accidentally ingest oocysts from cat feces. An infected pregnant woman can transmit T. gondii to her fetus. The treatment of choice for this condition is a combination of ***sulfadiazine*** **and** ***pyrimethamine***. ***Leucovorin*** is commonly administered to protect against folate deficiency. [Note: At the first appearance of a rash, *pyrimethamine* should be discontinued, because hypersensitivity to this drug can be severe.] ***Pyrimethamine*** **with** ***clindamycin*** or the combination of ***trimethoprim*** **and** ***sulfamethoxazole*** are alternative treatments. *Trimethoprim/sulfamethoxazole* is used for prophylaxis against toxoplasmosis (as well as P. jirovecii) in immunocompromised patients.

Chemotherapy for Leishmaniasis

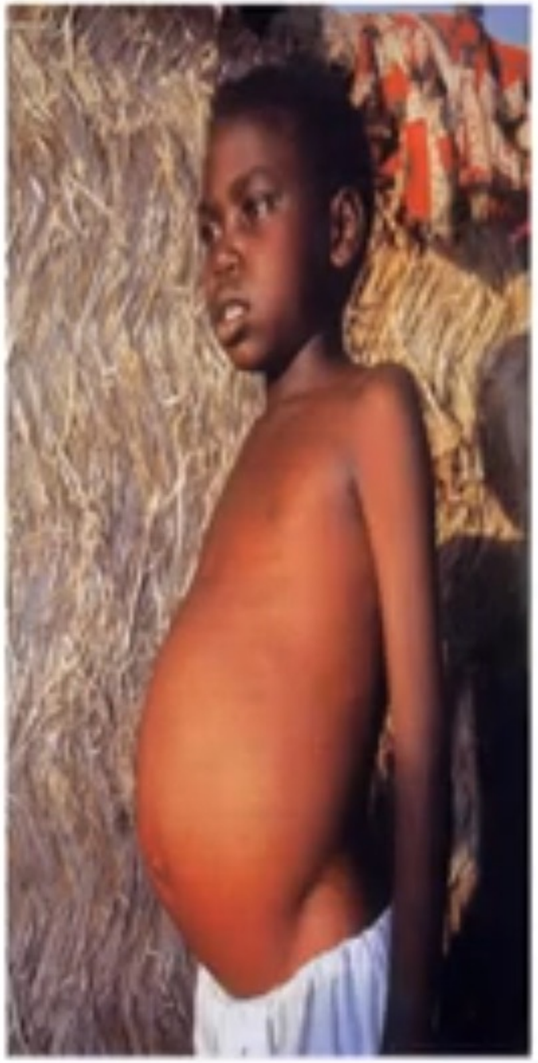
Leishmaniasis is a protozoal infection caused by various species of the genus Leishmania. There are three manifestations of leishmaniasis: cutaneous, mucocutaneous, and visceral. [Note: In the visceral type (liver and spleen), the parasite is in the bloodstream and if untreated is fatal.] Leishmaniasis is transmitted by the bite of infected sandflies. For visceral leishmaniasis, parenteral treatments may include ***amphotericin B*** **and pentavalent antimonials, such as** ***sodium stibogluconate*** **or** ***meglumine antimoniate*** **with** ***pentamidine*** **and** ***paromomycin*** as alternative agents. ***Miltefosine*** is an orally active agent for visceral leishmaniasis. The choice of agent depends on the species of Leishmania, host factors, and resistance patterns noted in area of the world where the infection is acquired.

In the absence of treatment, the case fatality rate of fully manifest clinical Visceral L. (kala-azar) without treatment is >90 percent. Mortality is often due to hemorrhagic or infectious complications.

Patients with VL should be evaluated for HIV coinfection; if found, HIV should be treated aggressively. In the absence of effective immune reconstitution, treatment response is poor in HIV-VL-coinfected patients



Visceral leishmaniasis, Kala Azar, or dum dum fever

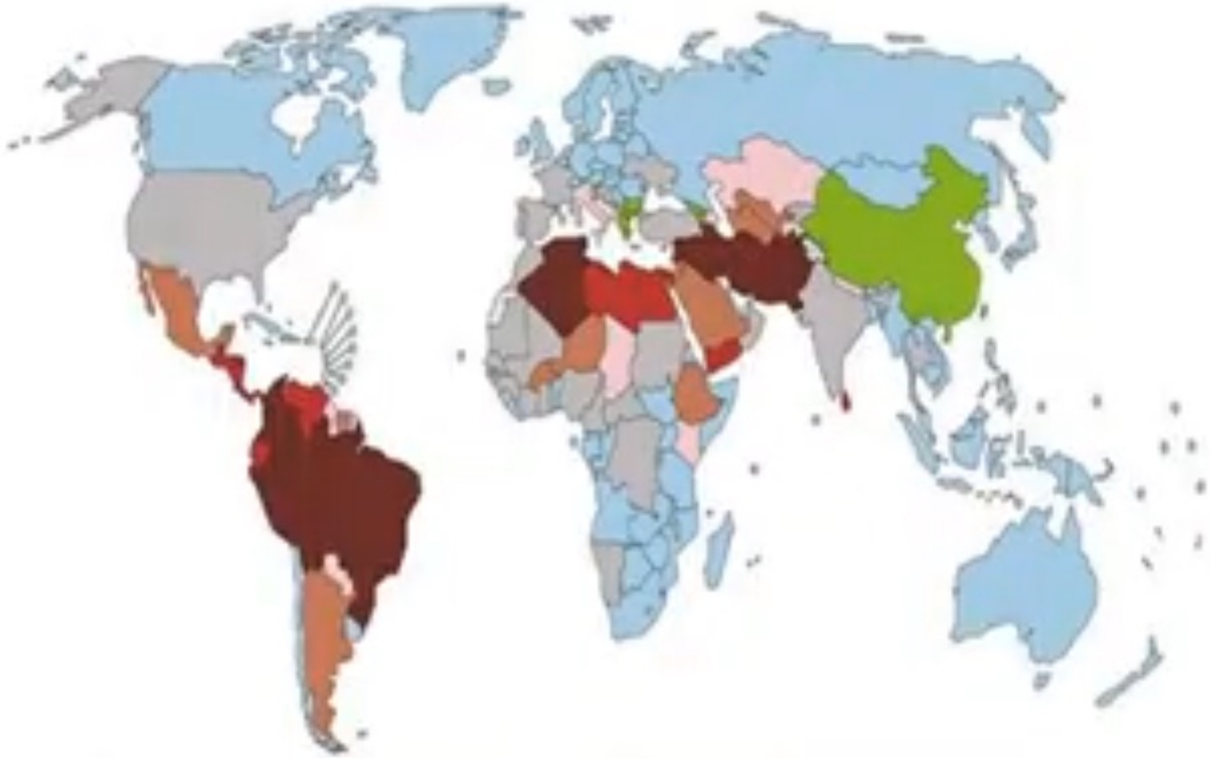


Kala azar was also called dum-dum fever, after a military station in the outskirts of Calcutta. Symptoms are a low degree of fever with hepatosplenomegaly and severe progressive cachexia (wasting), swollen lymph glands, leucopaenia, thrombocytopaenia with relative monocytosis and loss of hair. The parasites (*Leishmania donovani*) are mainly found in bone marrow, liver and spleen. If left untreated this manifestation of leishmaniasis is fatal in more than 90 % of cases.

احنا
ضمنه

Classification of *Leishmania* species that cause human cutaneous disease[1]

Subgenus	Complex	Species	Main geographic locations	Main clinical manifestations	Other
Old World					
Leishmania	*L.L. major*	*L.L. major*	India, Pakistan, Central and Southwest Asia, Turkey, areas in Africa, Middle East	Cutaneous leishmaniasis	
	L.L. tropica	*L.L. tropica*	Central and Southwest Asia, Middle East, Turkey, Greece, India, Pakistan, Yemen, Northern Africa, Ethiopia, Kenya	Cutaneous leishmaniasis	Leishmaniasis recidivans (LR), occasionally viscerotropic leishmaniasis
	L.L. aethiopica	*L.L. aethiopica*	Ethiopia, Kenya, Uganda	Cutaneous leishmaniasis	Diffuse cutaneous leishmaniasis (DCL), mucosal leishmaniasis
	L.L. infantum (syn *chagasi*)	*L.L. infantum* (syn *chagasi*)	Mediterranean, Northern Africa, Middle East, Central and Southwest Asia, Balkans, China, sporadic in sub-Saharan Africa	Visceral leishmaniasis	Localized cutaneous leishmaniasis (LCL), mucosal leishmaniasis
	L.L. donovani	*L.L. donovani*	India, China, Pakistan, Southwest Asia, Horn of Africa (Ethiopia, Somalia, Sudan, Kenya, Uganda)	Visceral leishmaniasis	Post kala-azar derma leishmaniasis (PKDL), occasional localized cutaneous leishmaniasis
New World					
Leishmania	*L.L. mexicana*	*L.L. mexicana*	Central and South America, Mexico, sporadic Texas and Oklahoma, United States	Cutaneous leishmaniasis	DCL
		L.L. venezuelensis	Venezuela	Cutaneous leishmaniasis	
		L.L. amazonensis	Panama, South America (especially Amazon Basin)	Cutaneous leishmaniasis	DCL, occasionally visceral or mucosal leishmaniasis
	L.L. donovani	*L.L. infantum* (syn *chagasi*)	Central and South America	Visceral leishmaniasis	Occasional cutaneous leishmaniasis
Viannia	*L.V. braziliensis*	*L.V. braziliensis*	Central and South America	Cutaneous and mucocutaneous leishmaniasis	Mucosal leishmaniasis (especially Bolivia, Brazil, Peru)
		L.V. peruviana	Peru and Argentina (western Andes slope)	Cutaneous leishmaniasis	
	L.V. guyanensis	*L.V. guyanensis*	South America (especially Northern Amazon Basin, Guyana, French Guiana)	Cutaneous leishmaniasis	Mucosal leishmaniasis
		L.V. panamensis	Panama, Costa Rica, Colombia, Ecuador, Peru, Venezuela	Cutaneous leishmaniasis	Occasional mucosal leishmaniasis



Countries reporting imported CL cases

- Brazil - 265
- Lebanon - 263
- Iran (Islamic Republic of) - 158
- Colombia - 46
- Bolivia (Plurinational State of) - 29
- Belgium - 25
- Sweden - 23
- Venezuela (Bolivarian Republic of) - 20
- Uzbekistan - 7
- China - 5
- Peru - 5
- Jordan - 4
- Suriname - 4
- Bulgaria - 3
- United Kingdom - 3
- El Salvador - 2
- Bangladesh - 1
- Greece - 1
- Italy - 1
- Panama - 1

Number of new CL cases reported (2018)

- >5000
- 1000 to 4999
- 100 to 999
- <100
- 0
- No autochtonous cases reported
- No data
- Not applicable

Drug regimens for treatment of cutaneous leishmaniasis in adults[1-3]

	Drug	Dose
Local therapy		
	Sodium stibogluconate	0.5 to 2 mL of 100 mg/mL pentavalent antimony (Sb^{5+}) intralesionally every 3 to 7 days until healed (treat up to 3 weeks)
Pentavalent antimonials		
	Meglumine antimoniate*	0.5 to 2 mL of 81 mg/mL pentavalent antimony (Sb^{5+}) intralesionally every 3 to 7 days until healed (treat up to 3 weeks)
	Paromomycin ointment¶	Apply topically to lesions twice daily for 10 days, rest for 10 days, then reapply for 10 days
Paromomycin		
	Paromomycin cream (15%)	Apply topically to lesions once daily for 20 days
Oral systemic therapy		
Azoles	Fluconazole	200 mg orally once daily for 6 weeks
	Ketoconazole	600 mg orally once daily for 28 days
Miltefosine	Miltefosine△	2.5 mg/kg (maximum 150 mg) orally in three divided doses for 28 days; if weight is 30 to 44 kg, use 50 mg orally twice daily
Parenteral systemic therapy		
	Sodium stibogluconate	20 mg Sb^{V}/kg/day intravenously or intramuscularly for 10 to 20 days◊§
Pentavalent antimonials	Meglumine antimoniate	20 mg Sb^{V}/kg/day intravenously or intramuscularly for 10 to 20 days◊
Amphotericin	Amphotericin B deoxycholate	0.5 to 1 mg/kg intravenously dosed daily or every other day for a cumulative total dose of 15 to 30 mg/kg
	Liposomal amphotericin B (AmBisome)	3 mg/kg intravenously daily for 6 to 7 doses
Pentamidine	Pentamidine isethionate	7 mg/kg intravenously or intramuscularly weekly for 3 doses

Leprosy

Leprosy (also known Hansen's disease) is an infectious disease caused by Mycobacterium leprae and Mycobacterium lepromatosis that involves the skin and peripheral nerves (both are obligate intracellular parasites with a tropism for nerves). Leprosy is an important global health concern. Contrary to popular folklore, leprosy is not highly contagious, and very effective treatment is available. Early diagnosis and treatment are necessary to minimize the likelihood of disability involving the eyes, hands, and feet due to neuropathy as these are often not reversible and may require lifelong care

CLASSIFICATION Leprosy has been classified into the following categories based on the Ridley-Jopling classification:

- Tuberculoid (TT)
- Borderline tuberculoid (BT)
- Mid-borderline (BB)
- Borderline lepromatous (BL)
- Lepromatous (LL)
- Indeterminate (I)

TREATMENT

Treatment of leprosy consists of multiple-drug therapy (MDT) to prevent development of resistance. MDT is active against M. leprae and rapidly renders the patient noninfectious; in addition, use of MDT reduces the likelihood of emergence of drug resistance. First-line medications include **dapsone, rifampin**, and, for lepromatous disease, **clofazimine.** Used in combination, these have proven to be effective. Conventional anti-leprosy therapy is effective in treating both M. leprae and M. lepromatosis. Promine, a sulfone, was the first antimicrobial agent successfully used to treat leprosy; subsequently, efficacy was also demonstrated with dapsone, its parent compound. After many years of monotherapy with these agents, drug resistance was observe

Selecting a regimen — Our approach to treatment of leprosy is as follows:

- For patients with tuberculoid disease, we favor treatment with dapsone (100 mg daily) and rifampicin (600 mg daily) for duration 12 months.
- For patients with lepromatous disease, we favor treatment with dapsone, rifampicin, and clofazimine (50 mg daily) for duration 24 months.

The approach consists of administration of three drugs (rifampin, dapsone, and clofazimine) to all patients, regardless of disease classification.

Alternative agents for treatment of leprosy include minocycline, ofloxacin, levofloxacin, clarithromycin, and moxifloxacin.

الكبيد اي صار في الستيتل

Resistance عشان صار فيها

التكرار spectrum

الـ WHO في الالفيناه قالو انه تعطي 3 combinations لمدة اقل من سنتين هاد ايجابي كتير

قالو التوصيات الجديدة انه اذا ماكانه lepromatous ياخذو لمدة ست شهور

واذا كانه lepromatous ياخذو الثلاثة لمدة 12 شهر

يعني نصف المدة

* اول ما يبدا المريض ياخذ العلاج ببطل infectious ببطل ينقل العدوى ببطل معدي