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Leishmaniasis

Leishmaniasis is a parasitic disease spread by the bite of infected sandflies. The disease is found in parts of about 88 countries on 4 continents. One of the most common forms of the disease is cutaneous leishmaniasis that occurs most commonly (over 90%) in Iran, Afghanistan, Syria, Saudi Arabia, Peru and Brazil. A form that affects some internal organs of the body, visceral leishmaniasis, mostly occurs in Bangladesh, India, Nepal, Brazil and Sudan. Parasites causing leishmaniasis are not found in New Zealand, Australia or the South Pacific.

Classification and causes

Leishmaniasis is divided into four main clinical forms and is caused by parasitic protozoa of the genus *Leishmania*. There are over 20 species and subspecies that infect humans via the bite of sandflies (subfamily *phlebotominae*) – tiny sand-coloured blood-feeding flies that breed in forest areas, caves and burrows in tropical and subtropical regions. The clinical features of the disease depend on the causative species and can range from simple, self-healing skin sores as found in cutaneous leishmaniasis (due to infection with *Leishmania major*), to severe, life-threatening disease of untreated visceral leishmaniasis caused by *Leishmania donovani*.

| Clinical form | Causes |
|---------------------------------|---|
| Cutaneous leishmaniasis | Old world (Middle East, North Africa, Asia) <ul style="list-style-type: none"> • <i>L. tropica</i>, <i>L. major</i>, <i>L. infantum</i>, <i>L. aethiopica</i> Americas (Central and South America) <ul style="list-style-type: none"> • <i>L. tropica mexicana</i>, <i>L. braziliensis</i>, <i>L. amazonensis</i> |
| Mucocutaneous leishmaniasis | Old world (Ethiopia and Kenyan highlands) <ul style="list-style-type: none"> • <i>L. aethiopica</i> Americas (Central and South America) <ul style="list-style-type: none"> • <i>L. braziliensis</i> |
| Diffuse cutaneous leishmaniasis | Old world (Ethiopia and Kenyan highlands) <ul style="list-style-type: none"> • <i>L. aethiopica</i> Americas (South America) <ul style="list-style-type: none"> • <i>L. mexicana amazonensis</i> |
| Visceral leishmaniasis | India, Kenya <ul style="list-style-type: none"> • <i>L. donovani</i> South Europe and North Africa <ul style="list-style-type: none"> • <i>L. infantum</i> Americas <ul style="list-style-type: none"> • <i>L. chagasi</i> |

Clinical features

| Clinical form | Clinical features |
|---------------------------------|---|
| Cutaneous leishmaniasis | <ul style="list-style-type: none"> • Most common form causing one or more sores on the skin • Initially lesion is a small red papule up to 2cm in diameter. Over several weeks, papules become darker and form ulcers with raised edges and central crater. • Ulcers can be moist and exude pus or dry with a crusted scab • Sores usually appear on exposed areas of the skin, especially the face and extremities • Lesions may occur immediately after the bite of an infected sandfly or may incubate for weeks or months before causing any sores |
| Mucocutaneous leishmaniasis | <ul style="list-style-type: none"> • Lesions usually appear 1–3 months after being bitten. Sores may only occur around the mucous membranes of the nose and mouth or may also involve skin lesions. • Sometimes untreated cutaneous leishmaniasis may lead to mucosal involvement • Without treatment, the entire nasal mucosa and palates become deformed with ulceration and erosion of the nasal septum, lips and palate • Mucosal lesions are often painful and become sites of infection, sometimes leading to sepsis • Can often cause extreme disfigurement |
| Diffuse cutaneous leishmaniasis | <ul style="list-style-type: none"> • Disseminated and chronic skin lesions resembling lepromatous leprosy • Initial skin lesion which spreads locally, and from which the disease disseminates to other parts of the skin, often involving large area • Lesions are nodules which do not ulcerate • The disease progresses slowly and becomes chronic • Often difficult to treat |
| Visceral leishmaniasis | <ul style="list-style-type: none"> • Affects internal organs including the spleen, liver and lymph nodes • Also referred to as Kala azar (Indian name for visceral leishmaniasis and means “black disease”) because of the characteristic darkening of the skin in patients with the disease • Symptoms include bouts of fever, weakness, diarrhoea, emaciation, swollen glands • Laboratory tests may show splenomegaly (enlarged spleen), hepatomegaly (enlarged liver), anaemia, and leucopaenia • The disease may take different forms ranging from asymptomatic self-resolving disease to fulminant, life-threatening disease |

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Diagnosis

Diagnosis of cutaneous leishmaniasis is usually based on the appearance of the lesion. In over 70% of cases, [skin biopsy](#) can reveal the parasite. Skin biopsy is also used to establish mucocutaneous leishmaniasis and visceral leishmaniasis. Complete blood counts and liver function tests should also be performed in visceral leishmaniasis.

Treatment of leishmaniasis

Antiparasitic pentavalent antimonials, such as sodium stibogluconate or meglumine antimoniate, form the basis for all treatment of leishmaniasis. Long courses of these drugs are often required.

More recently liposomal amphotericin B has been found to be effective in treating visceral leishmaniasis and has a shorter course and lower toxicity than amphotericin B deoxycholate. However, cost issues prevent its use in most countries where leishmaniasis is prevalent. Secondary infections should be treated with appropriate antimicrobial therapy.

Most cases of cutaneous leishmaniasis resolve spontaneously without treatment, but this can take months or even years. Sores often leave unsightly scars. Treatment is recommended for:

- Chronic lesions – difficult-to-heal sores
- Cosmetically unacceptable lesions – large or multiple lesions
- Lesions over joints that may impair movement
- Mucosal lesions that may be irritating or impair function
- Lesions in immunosuppressed patients

Other treatments sometimes used for leishmaniasis include:

- Topical paromomycin (also known as aminosidine)
- Azole [antifungal drugs](#): [itraconazole](#), [fluconazole](#), [ketoconazole](#)
- Zinc sulfate
- [Cryotherapy](#)

Prevention of insect bites

Infection can be prevented by avoidance of sandfly bites. Because there are currently no vaccines or drugs for preventing infection, travellers to areas where leishmaniasis is prevalent should decrease their risk of being bitten by adhering to the following precautionary measures.

- Avoid outdoor activities, especially from dusk to dawn when sandflies are the most active.
- Wear long-sleeved shirts, long pants, and socks. Tuck shirt into pants.
- Apply insect repellent on uncovered skin and under the ends of sleeves and pant legs. The most effective repellents are those that contain the chemical DEET (N,N-diethylmetatoluamide).
- Spray clothing, living and sleeping areas (including bed net) with permethrin-containing insecticides.

Related information

References:

- Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.
- [Markle WH, Makhoul K. Cutaneous leishmaniasis: recognition and treatment. Am Fam Physician 2004;69:455-60.](#)

On DermNet NZ:

Other websites:

- [Leishmaniasis](#) – Medline Plus
- [Leishmaniasis](#) – World Health Organization (WHO)
- [Leishmaniasis](#) – emedicine dermatology, the online textbook

Books about skin diseases:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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