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A review on cutaneous leishmaniasis and its causes, diagnosis and treatment

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ABSTRACT

The current review focused on the Cutaneous Leishmaniasis and its Causes, Diagnosis and Treatment. To avoid this infection, the stockholders should consider dissemination of health awareness among citizens, especially from the rural population, to report and treat any injury, especially children, before the infection. And other population groups are the first way in monitoring and follow-up of this disease, which gives the public health authorities a practical perception about the disease mentioned and can identify the places where the spread of the disease in addition to coordination with the concerned authorities in order to activate the control factor and address the special causes directly behind the spread, Specialized doctors confirm that primary prevention begins with personal hygiene and care is a key factor in prevention.

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INTRODUCTION

Leishmaniasis is a disease caused by leishmaniasis parasites and is transmitted to the human body by a mass of sand fly. In different geographical regions of the world, there are different types of leishmaniasis parasites, as well as different varieties of sand flies that transmit leishmaniasis (Arevalo *et al.,* 2001). The factors that harbor the disease are also different (an intermediate body that allows the formation or harboring of the disease), but it is often an animal from various rodents. Leishmaniasis is transmitted by the sand fly that the animal swallows and then passes to the human when it stings. When stung, the paasite is transferred to the macrophages or macrophages in the skin and then begins to multiply there (Netto *et al.,* 1999).

Clinical signs of leishmaniasis

1. Skin disease - Cutaneous leishmaniasis.
2. Skin disease and mucous membranes - Mucocutaneous leishmaniasis, which affects the skin and mucous membranes.
3. Disease in the internal organs - Visceral leishmaniasis, which affects the internal organs of the body.

The incidence of the disease is also usually classified according to its geographic distribution. In such a classification, leishmaniasis is divided into Old-world leishmania - when the infection involves the skin, mainly, and internal leishmaniasis. New world leishmaniasis includes mucosal leishmaniasis and visceral leishmaniasis (Stark *et al.,* 2006).

Cutaneous leishmaniasis

Leishmaniasis is a very common disease in the world, of all kinds, esophagus and skin. The most common species is cutaneous leishmaniasis, known as the Rose of Jericho (Leishmaniasis). Skin leishmaniasis affects skin and results in ulcerated lesions of up to a few centimetres in diameter, lasting for months despite various treatments. Skin leishmaniasis is caused by the penetration of single-celled leishmaniasis parasites into the skin fol-

lowing exposure to a bite/bite of the sandfly female (from the family of fowls). Vulnerable areas are therefore areas of the body that are not normally covered, such as the area of the face and limbs (Neves *et al.,* 2001).

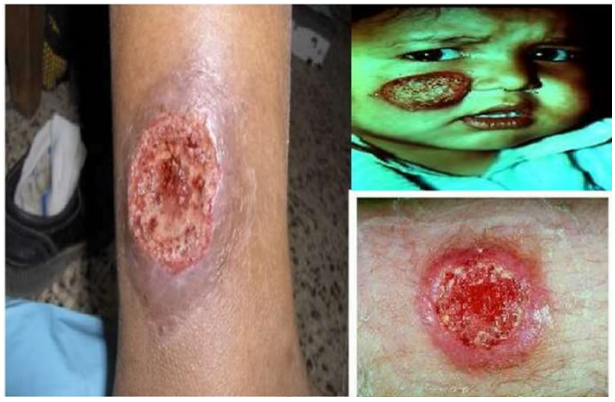

Figure 1: Cutaneous leishmaniasis

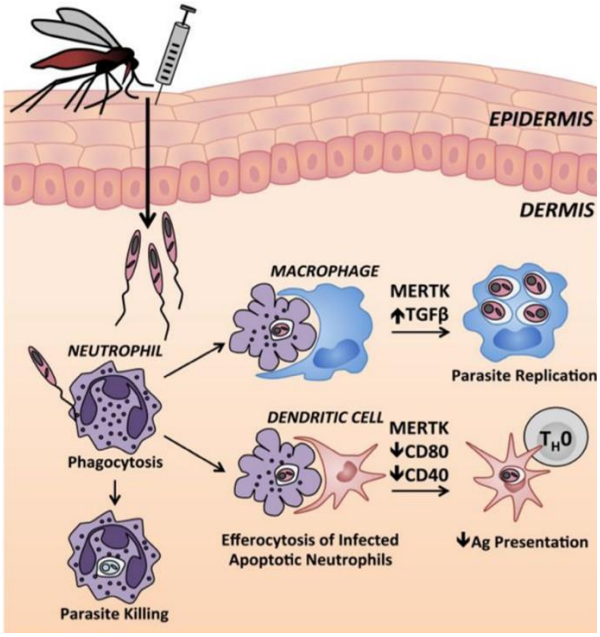

Figure 2: Parasite that causes skin leishmaniasis

The parasite that causes skin leishmaniasis is a monoclonal parasite of the type of leishmaniasis (Protozoa) that can live and reproduce within the cells of the immune system - macrophages - belonging to the body of a mammalian host organism and can also live and reproduce, The intestine of the sand fly (Franke *et al.,* 1990).

Infection: The parasite is transmitted to the human when exposed to bite from the sand fly, which has been infected when stung to the infected breast. That is, there is a triad that is a reservoir of these parasites in nature (rodents), the fly, which is through the sting to transfer the parasite from the rodent, and the person who stings and gets infected (not transmitted from one person to another).

There are several types of this parasite, the most common one that causes skin disease only, called Leishmania major. The primary source of the parasite in nature is the Psammomys obesus, which lives in specific geographic areas and therefore infection is specific in these areas.

Sand flies are present in most areas. This fly is similar to a small mosquito that is no more than 1 - 3 millimetres in size and has a reaction similar to that of mosquitoes. Most sand flies do not carry parasites and thus cannot transmit infection. Only in infected areas (i.e., where sand rats live) can infected sand flies be found which can transport the parasite by the sting. The boundaries of the affected areas may vary slightly depending on changes in the sand mouse groups, but infection usually occurs when the human is moving in these areas (Velasco-Castrejon *et al.,* 1997).

Life Cycle

Amastigote phase: There is in the cells of the endothelial network of the monocyte and the cells of the family of the vertebrate.

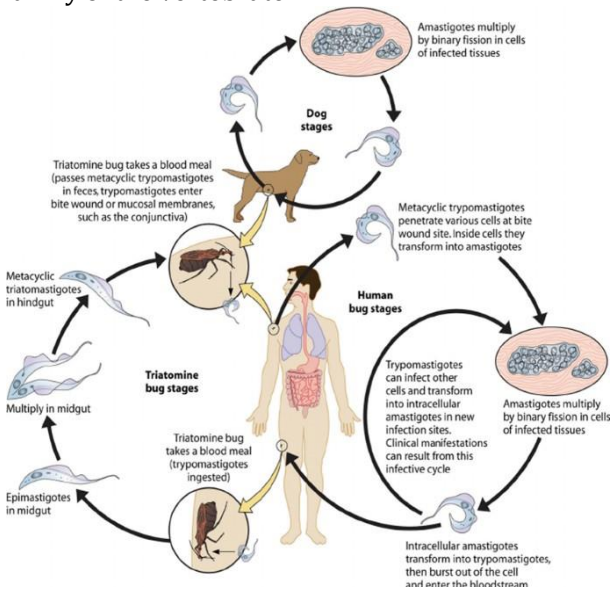

Figure 3: Amastigote phase

The development of promastigote: grows and develops in the intestinal tract of the sand fly. When the sand fly pierces the skin of the infected host to take blood for feeding, it is taken with the amastigote, and then the parasite is transformed into the thrombophageal stage (the gastrointestinal phase of the insect) and begins dividing rapidly into large numbers until day 3. On the fourth day or fifth, begins to move up and forward, until it reaches the anterior and then the c where it is filled with large numbers to the extent that it destroys. When the fly finds a new family, it implants parts of her mouth in which the Leishmania parasite from the saliva stage into the body the host, which absorbs blood F.

The incubation period

Normally, the protective cells in the body devour the promastigote injected by the infected sand fly and turn into amastigote, and then begin to divide longitudinally. As the parasite prolifles inside the macrophage cell and after the cell is filled with amastigote, it explodes. The Leishmania bodies are released between the cells to be eaten by new eucalyptus cells, and this process continues.

Sometimes, when the amastigote is released from the placenta, it travels with the blood and travels to its preferred areas, the endothelial network cells in the spleen, liver, bone marrow and lymph nodes, and are found in the blood, usually within the monocyte. As a result of this cycle, the body loses a large number of precious cells, as the body begins to produce new similar cells. As a result of the proliferation of parasites in the cells of the endothelial network, the spleen increases in size and weight as well as the liver, but to a lesser degree than the spleen (Pratlong *et al.,* 2002).

Symptoms of cutaneous leishmaniasis

Leishmaniasis is a skin disease. The symptoms of skin leishmaniasis are the appearance of ulcerated lesions of up to a few centimetres in diameter, lasting for months despite various treatments.

The disease starts with a small, red lump in the skin during a period of two weeks to four weeks after exposure to the Incubation period in exposed skin areas. The mass increases slowly over a few weeks, and sometimes the mass becomes ulcerated. Sometimes a range of lesions may arise from a series of stings. The nursery may vary from pest to pest, resulting in new lesions within weeks of onset of the first lesions. Pests persist in the skin for 6 months to 18 months and spontaneously heal, leaving scars (Mohebali *et al.,* 2002).

Causes and risk factors of cutaneous leishmaniasis

The causes of skin leishmaniasis are due to the infiltration of single-celled leishmaniasis parasites into the skin due to the sand fly capacity. Therefore, wounds are often concentrated in open areas of the body, such as the face and limbs.

The parasite is a monoclonal parasite of the type of leishmaniosis (Protozoa) that can live and reproduce within the cells of the immune system - Macrophages of the body of the host mammal and can live and multiply in the intestines of the sand fly.

Diagnosis of skin cutaneous leishmaniasis

Clinical suspicion usually arises when common lesions occur in the skin after remaining in an infected area. Diagnosis of cutaneous leishmaniasis is based on direct microscopic examination of a sample taken from the lesion in the skin.

To confirm the diagnosis, transplantation can be performed, and polymerase chain reaction(PCR) may be used at other times to examine the blood for cellular immunoglobulin (Ojha *et al.,* 2007).

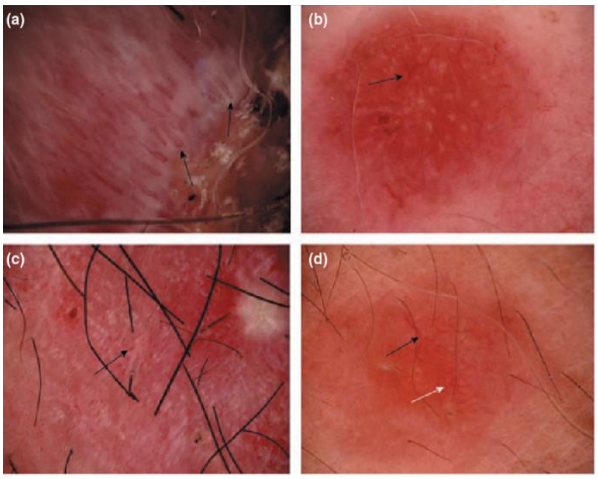

Figure 4: Skin cutaneous leishmaniasis

Treatment of skin cutaneous leishmaniasis

When a single lesion of leishmania appears, a small scar/mark/ mark is left that is not aesthetically flawed, so there is no need for treatment, and you can wait for the disease to go away automatically. When lesions occur in the face or multiple lesions in the limbs, skin leishmaniasis can be treated by ointments that kill the parasite or injectable drugs into the lesion or intravenously during hospitalization (Machado *et al.,* 2007).

Paromomycin: An ointment containing paromomycin has been developed. Treatment with ointment on the lesion is done twice a day for 10 days.

Pentostam (Sodium Stibogluconate): This drug is given intravenously, intramuscularly or intravenously into the same lesion (Reithinger *et al.,* 2005).

Prevention of skin cutaneous leishmaniasis

The best cure is the prevention of cutaneous leishmaniasis. It is possible to eliminate sand rats in areas adjacent to residential areas, but the best way is to avoid being stung. A sand fly is a small, weak insect that cannot fly when there is a strong wind, and it usually settles in the afternoon and evening. It is recommended to cover open skin areas and use insect repellents (WHO, 2010).

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