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Opinion Article

Current Status and Management of Leishmaniasis

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DESCRIPTION

Leishmaniasis is a parasitic disease found in many tropical and subtropical countries worldwide and is transmitted through the bites of infected sand flies. The parasite that causes leishmaniasis can live and multiply on humans, pets or feral dogs, and rodents. There are several strains of the parasite, each of which can cause different disease symptoms. Cutaneous leishmaniasis is most common among travellers. Mucosal leishmaniasis may occur due to the delayed spread of certain forms of cutaneous leishmaniasis. Visceral leishmaniasis is rarely seen in travellers.

Domestic and feral dogs are hosts for visceral leishmaniasis in the Mediterranean, Middle East, Central Asia, and South America. Humans are the sole host of visceral leishmaniasis in East Africa and India. Desert rodents (gerbils) are the host of cutaneous leishmaniasis in rural areas in most of the eastern hemisphere, and humans are the urban host.

Leishmaniasis occurs in more than 90 countries on four continents (excluding Australia). The risk of cutaneous leishmaniasis is highest in travellers to Afghanistan, Algeria, Brazil, Iran, Iraq, Lebanon, Peru, Saudi Arabia, and Syria. Mucosal leishmaniasis has been reported in travellers visiting certain areas of Bolivia, Peru, and Brazil. More than 90% of global cases of visceral leishmaniasis occur in India, Bangladesh, Nepal, South Sudan and the state of Bihar in north-eastern Brazil.

Sand flies do not fly very far in their lifetime, so transmission may be restricted to certain parts of the affected country and at certain times of the year. In temperate countries, transmission is limited to the summer months. In the tropics and subtropics, infection can occur all year round.

Leishmaniasis can be partially prevented by sleeping under insecticide-treated nets. Other measures include spraying insecticides to kill sand-flies and preventing further spread of the infection. There is early treatment to prevent it. The treatment needed depends on where the disease is acquired, the type of leishmania and the type of infection. Agents that may be used for visceral disorders include liposomal amphotericin B,pentavalent antimony combined with paromomycin, and miltefosine. Skin disorders may benefit from paromomycin, fluconazole, or pentamidine.

Currently, about 4 to 12 million people are infected in about 98 countries. About 2 million new cases and 20,000 to 50,000 deaths occur each year. About 200 million people in Asia, Africa, Latin America and Southern Europe live in areas where the disease is endemic. The World Health Organization has received kickbacks for several drugs used to treat this disease. It is classified as a neglected tropical disease. The disease can occur in many other animals, including dogs and rodents.

Diagnosis of leishmaniasis has consistently been a major challenge due to its characteristic clinical similarities to several other common diseases. Typhoid fever, tuberculosis, malaria. Leishmaniasis is a major public health problem due to its high prevalence and poor diagnosis. Therefore, highly sensitive diagnostic tools are needed for disease treatment. Despite advances in various serological and molecular tests, century-old parasitological methods are still in use. Successful eradication of leishmaniasis requires accurate diagnosis to prevent community transmission. In addition to the currently used laboratory and serological techniques for diagnosing leishmaniasis, molecular biological assays based on the polymerase chain reaction are more sensitive than serological assays. This chapter summarizes the advances in various laboratory, serological, and molecular assays available for the diagnosis of leishmaniasis and its clinical application.

Treatment of leishmaniasis began in the 1940s with pentavalent antimony. The increasing resistance of parasites and their high toxicity to these drugs made it necessary to find alternatives. Amphotericin B is an alternative drug that has been used since the 1980s. The main mechanism of action of amphotericin B is to disrupt membrane lipids and cause their breakdown. The duration of treatment he in some cases varies from 15 to 45 days, but the dosage can be different. Combining this drug with several other drugs has been shown to greatly improve the effectiveness of treatment.

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