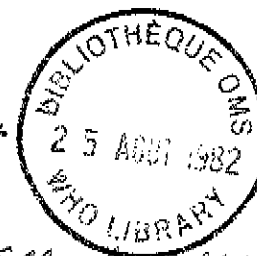




EXPERT COMMITTEE ON LEISHMANIASES

Geneva, 10-16 November 1982

Draft agenda item 4.5



IMPORTANCE OF LEISHMANIASIS IN IRAN

*cutaneous*  
by *leishmaniasis, visceral*

A. Nadim

Professor of Epidemiology, School of Public Health, Teheran, Iran

Cutaneous leishmaniasis is not a new disease in Iran. In fact, some authors think that Iran was the birthplace of human cutaneous leishmaniasis in very ancient times. The description of cutaneous lesions, presumably cutaneous leishmaniasis, is found in the writings of the famous Iranian physician, Avicenna, but the first detailed description is given in Kholasat-o-tajareb written in Persian in about 1500, almost 500 years ago.

Cutaneous leishmaniasis is not only historically a long-established disease in Iran, but also at the present time it is still a disease of great importance, even more important than before because of the increase in the population of the infected areas and the increase in the number of cases. In Iran, like in some other neighbouring countries (USSR and Afghanistan), cutaneous leishmaniasis has two distinct epidemiological types: the urban and the rural types.

At the present time, the urban type is found in the capital city of Teheran as well as in some other large or medium-sized cities (Mashad, Neishabur and Sabzevar in the north east, Shiraz in the south, Kerman in the south east, and Yazd and possibly the city of Isfahan in the central part). There are reports showing the occurrence of this type in many other towns and cities in the central part of the country up to about 50 years ago, but, as a result of the change in urban construction materials and also of the malaria control activities or possibly the increased use of knock-down insecticides, few cases are being reported from these areas at present.

In infected cities, the disease is not evenly distributed, so that in some city quarters it is more prevalent than in others. This is because the species and population density of the sandflies are different in various parts of the same city.

In addition to the affected parts of a city, the disease is usually extended to the neighbouring villages in one or more directions possibly due to the movements of stray dogs or infected people.

The vector of this type of the disease is supposed to be Phlebotomus sergenti, since on several occasions this species has been found naturally infected with promastigotes in Mashad in 1967.

In some cities, like Teheran, the disease is found only in those parts of the city which have a high P. sergenti population. It occurs in the form of local outbreaks, lasting for two to three years, then dies out to appear again in another part of the city not far from the previous one. Thus, outbreaks move from one part of the city, or nearby village to another. In some other cities like Mashad, the outbreaks have been occurring in the same city quarters since 15 years. This is because of high population turnover in the infected

The issue of this document does not constitute formal publication. It should not be reviewed, abstracted or quoted without the agreement of the World Health Organization. Authors alone are responsible for views expressed in signed articles.

Ce document ne constitue pas une publication. Il ne doit faire l'objet d'aucun compte rendu ou résumé ni d'aucune citation sans l'autorisation de l'Organisation mondiale de la Santé. Les opinions exprimées dans les articles signés n'engagent que leurs auteurs.

part of the city. In yet other cities, it is seen with a very low endemicity but sometimes heavy epidemics appear due to population increase and unplanned urban development which prepare the ground for an increase of both the sandfly population and stray dogs (Neishabur in 1974 and Kerman since 1978).

The agent of the disease in Teheran has been identified by Professor Peters at the London School of Hygiene and Tropical Medicine using the method of isoenzyme electrophoresis. It has been found to be very similar to Leishmania tropica (L. tropica minor) differing in two enzymes and has been labelled L. tropica complex. The agents from other foci have not yet been precisely identified though according to their behaviour in laboratory animals, they seem to be similar (Shiraz) or only slightly different (Mashad).

In almost all these foci, the infection of dogs has been reported along with the infection of man. This may have a high epidemiological importance since it seems that dogs are a better source for infecting sandflies because the sore is usually situated on a part of the body surface available for biting (tip of the nose). Yet there are certain places where dogs apparently do not play a role and where the disease is spread from man to man by the bites of sandflies.

There are no accurate data on the incidence and prevalence of the disease in these foci. Only those cases who have been referred to governmental laboratories are reported to the Health Departments, and most of the cases do not even seek treatment. Some figures have recently been collected for Teheran and Kerman. In the infected parts of Teheran in 1979-1981 the overall prevalence had been 1.5% and the scar rate 23.3%. In 1981 about 150 cases were found in one of the newly built quarters in the north-west of the city. The disease is found in all age-groups but mainly in children. In Kerman, the disease prevalence started to increase in 1973 reaching its peak in 1980. In 36 000 schoolchildren examined in 1981-1982, 312 cases were found, showing a prevalence of 0.9%. The total number of cases in the whole city may be estimated at somewhere between 600 and 900. For Shiraz and Mashad there are no up to date figures, but the reports of the Health Departments of the two cities show a considerable increase in the last five years. The total population living in the active foci of urban cutaneous leishmaniasis is about one million.

The rural type of the disease is found in some foci in the plain areas along the frontier with the USSR in the north-east (Turkeman Sahara, Lotfabad, Sarakhs). In the province of Khorassan there are other foci situated in the plain areas at the periphery of the central salt desert of Dash-e-Kavir (Esfarayan, Tabas). On the south-western border of the central salt desert in the province of Isfahan, there is also a very extended focus which is the most important of this type of the disease in the country. In all these foci, the main animal reservoir is Rhombomys opimus and the vector to man is P. papatasi. The agent has been identified at the London School of Hygiene and Tropical Medicine as L. major (L. tropica major).

Other important foci exist in the south-west beyond the geographical distribution of Rhombomys. Thousands of cases have been reported from these foci in the last two years. The agent has been identified by Professor Peters at the London School of Hygiene and Tropical Medicine as L. major but the animal reservoir has not yet been identified. The disease is hyperendemic in the Isfahan area so that 4000-8000 cases are officially reported each year from this part of the country. In Khuzistan, the disease normally has a low endemicity but during the last two years more than 3000 cases have been reported among soldiers and war refugees. The situation in Isfahan and Khuzistan was so threatening that the government has launched a programme of mass "leishmanization" of both areas since the beginning of 1982. The foci of the disease in Isfahan and Khuzistan are important probably because both areas are centres of developing new industries to which labourers migrate from all over the country, most of them nonimmune. In addition there are other types of new-comers to the infected areas in Khuzistan such as soldiers, war refugees, etc. Other foci though very active, are not so important, because except for the great numbers of soldiers sent to the north-east frontiers, the disease is confined to the sparsely scattered local population and most cases are in children who are not yet immune.

The total population of these areas is about 100 000. The annual incidence has been estimated as 30 per 100 and therefore each year there are 3000 cases in these foci.

It may be concluded that cutaneous leishmaniasis is an important health problem in Iran because:

- (a) It produces sores which last for months or even two to three years;
- (b) It produces scars that are sometimes disfiguring;
- (c) In some cases, lupoid skin lesions remain for years at the site of the scar;
- (d) There are cases in which there is no recovery and the patient has the sore for years (in some cases the sores had lasted more than 40 years and still contained large numbers of parasites);
- (e) A large number of people get the urban or rural type of cutaneous leishmaniasis each year (the annual number of new cases according to an unofficial estimation of the authorities of the Ministry of Health is 3000 cases of urban and 12 000 cases of rural cutaneous leishmaniasis);
- (f) The patients in some urban foci belong to the elite and pressure groups of the society (in Teheran, the infected parts of the city are the residential areas of the urban elite and well-to-do people; and
- (g) A good number of patients in the main rural foci are groups to whom particular attention should be paid (oil workers, soldiers and officers in Khuzistan, labour force for steel mill, refinery, housing projects etc. in the Isfahan area).

Kala azar is not very prevalent in Iran, the number of cases reported up to the end of 1976 was about 120. But unfortunately it seems that the number of cases is increasing in various parts of the country. In the period 1960-1980, we saw on the average four cases per year in our laboratory in Teheran. (Almost all cases seen in the Teheran area, are sent to our laboratory for confirmation.) In 1981 we had 22 cases and in the first half of 1982, we diagnosed nine cases hospitalized in various hospitals in Teheran. In Shiraz, a similar trend has been noticed with an even higher number of cases. In Ahwaz, no cases were reported up to 1973. From 1973 to 1980, 51 serologically positive cases, with indirect fluorescent antibody titres greater than 1/256, were found, and 34 of them were parasitologically positive.

With regard to visceral leishmaniasis, it may be said that although it does not seem to be a very important health problem at present in Iran, it should be looked upon as a potentially important public health problem. Apart from a few cases reported in 1916, the first case of visceral leishmaniasis in Baghdad was reported in 1954 and only 20 years later, in 1974, the number of cases reported from this city and its vicinity was more than 860. Moreover the geographical and climatic conditions of Ahwaz and Baghdad are similar. It may be anticipated that, in the future, visceral leishmaniasis will probably become an important health problem in southern and south-western parts of Iran. The increasing number of cases reported each year support this hypothesis.