

# Clinical Finding Of Cutaneous Leishmaniasis As A New Focus Of Iran

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## Abstract

Cutaneous leishmaniasis in Iran has imposed of great economic and society with respect to the lack of adequate information about the disease in Kashan. To our knowledge, this is the first report of outbreak of cutaneous leishmaniasis in this area. The present study was conducted in 1995-2003 to determine the prevalence of cutaneous leishmaniasis in patients referring to laboratories in Kashan.

This study was carried on 3028 patients referred to Kashan laboratories during the 9 years period. Initial variable included age, sex, occupation, place of residence and number of lesions that were all were recorded in an information data.

With a total number of 3028 infected persons 50.8 percent were female and 49.2 percent male. The highest prevalence rate (37.9%) was in 0-10 years old. More than one active lesion was seen in 30.3% of individuals. The rang of the commonly affected site of the body were hands (45.6%). All patients treated with Meglomite antimonate (Glucantime) successfully.

In this study the leishmania major strain was identified in majority of cases. The clinical finding pattern belonged to different endemic strains of L. major in Isfahan, which indicates the possible transmission of infection from Isfahan to this area.

## INTRODUCTION

Cutaneous leishmaniasis is a zoonosis disease in human and animals that is mainly caused by two species of *Leishmania tropica* and *L. major*. According to the reports of World Health Organization (WHO), leishmaniasis is endemic in 88-countries throughout the world such as Africa, Asia, Europe, North and South America. There is an estimated of 12 million cases worldwide, with 1.5 to 2 million newly cases each year (1, 2).

Cutaneous leishmaniasis (CL) is still considered as an important health problem in many parts of the world especially the Mediterranean regions Africa and almost all countries of the Middle East (3, 4, 5). The prevalence of disease is high in some provinces of Iran, including Isfahan (7, 8), Shiraz (9), Khorasan (10), Khozestan and Kerman (11). Isfahan is a well know endemic area of Zoonotic cutaneous leishmaniasis (ZCL). In north east of Isfahan such as Kashan, especially in rural areas the incidence of disease is very high (7, 8). Regard in this fact that, Kashan district is an area region, the prevalence of the oriental sore "disease is related to such factors as; the expansion of city, creation of residential units in the farmlands, planting trees, the traverse of susceptible persons in contaminated areas, plant coating and the kind of soil which can infect the human and vectors.

Although this disease dose not result in death, but because of long lasting lesions, cosmetic problems, great expenses of treatment, length of cycle and side effects of the available drugs, it has created many problems (6).

Studies have shown that outbreaks of cutaneous leishmaniasis in Isfahan are up to 2.5 percent (7, 8). This study was performed to determine the abundance and characteristics clinical finding of cutaneous leishmaniasis in the patients referred to central laboratory of Kashan-Iran.

## MATERIALS AND METHODS

This study was a descriptive study performed, by a simple sampling during a 9 years period from 1995 to 2003, in the central laboratory of Kashan, all the patients referred from clinics, villages and health centers, because of doubtful manifestations of leishmaniasis, were examined by Gimsa Stain method and microscope by a parasitologist. Then, they was completed for the infected cases including the information about age, sex, job, place of residence, number and the site of lesions. In this study every body with amastigote forms in smear was considered as an infected person. Information was gathered, classified and analyzed. The 2 test was used to determine any statistically significant difference in disease, the prevalence between female and

male of patients.

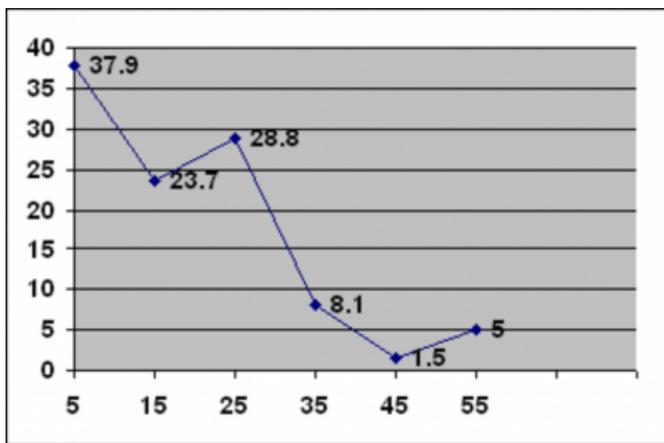
**RESULTS**

With total number of 3028 infected persons 50.8 percent were female and 49.2 percent male ( $p < 0.5$ ).

The highest rate of infection were seen in the age group of less than 10 years old ( 37.9 percent) and the least rate were in the age group of 40 to 50 (1.5 percent). The distribution of the active lesions in relation to the age is shown in fig 1.

**Figure 1**

Figure 1: The prevalence of cutaneous leishmaniasis in patients referring to central laboratory of Kashan, according to the age.



Forty five and six percent of the lesions were found on the hands, 23 percent on the face, 19 percent on the legs, and 12.4 percent on the other site of the body. From the all infected patients, 2110 (69.7 percent) had only one lesion, 687 patients (22.7 percent) 2 lesions, 140 persons (4.6 %) 3 lesions and 91 (3%) had 4 active lesions. 1604 persons (53 percent) who were affected by “oriental sore” lesion, had many ulcers. According to the findings, most infected (79 percent) had spent at least one night in the Holy Shrine of Agha Ali Abbas, and only 15 percent had no any trip. While among all patients, (60.6 percent) were referred to other clinics and 30 percent of them were successfully treated.

The distribution of dermal leishmaniasis in this study indicated that, most of patients were living in hot climate villages and a few were lived in mountainous villages ( $p < 0.005$ ). Distribution of patients according to sex and place of residence is shown in the table 1.

This study showed that, the most prevalence of infection was in children and students and the least prevalence was among the employers.

**Figure 2**

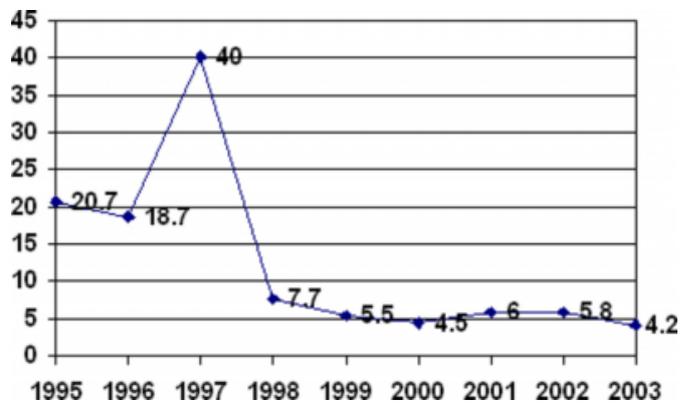
Table 1: The distribution of cutaneous leishmaniasis according to sex and place of residence.

Place	Male		Female		Total	
	No	%	No	%	No	%
City	280	18.8	428	27.8	708	23.4
Hot villages	1048	70.2	956	62.1	2001	66
Mountainous villages	163	11	156	10.1	319	10.6
Total	1488	100	1540	100	3028	100

The greatest rate of infection was in 1997(40 percent) and the least rate 4.2% in 2003. Fig (2)

**Figure 3**

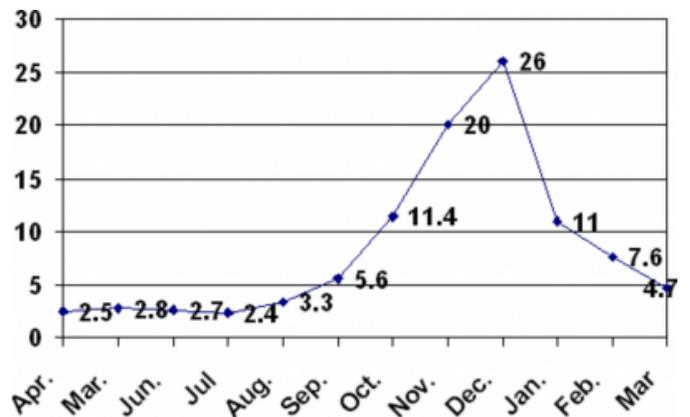
Figure 2: The prevalence of cutaneous leishmaniasis patients referred to central laboratory of Kashan according to the year.



In addition the greatest rate of infection was in November and December, 20 and 26% percent respectively and the least rate were in March 2.5% fig 3. These findings show that, Kashan is a focus of zoonotic cutaneous leishmaniasis in Iran.

**Figure 4**

Figure 3: The prevalence of cutaneous leishmaniasis in patients referred to central laboratory of Kashan according to the month.



## **DISCUSSION**

In this study, the prevalence of leishmaniasis was 50.8 percent among male and was 49.2 percent among female. Also, most of the cases were in the hot villages 96 percent, and the least were in the mountainous villages (4%).

Depending on the findings of this research, the greatest rate of prevalence of cutaneous leishmaniasis was among the children of 10 years and below (37.9%); and the least rate was among the persons between the ages of 40-50 (1.5%). Javadian and his colleagues, found that the prevalence of this disease in the city of Bam was 2.03 percent (10), Yaghobi reported in the students of schools of Barkhar Isfahan 2.5 percent (12) and according to the study of Talari and his colleagues this rate was 1.2 percent in the students of schools of Kashan (13).

Comparing the result of previous studies with our findings shows the high rate of infection in the area villages of Kashan. The higher rate of leishmaniasis among the age group of 10 and below (37.9%) indicates that this disease is not endemic in Kashan area. In Isfahan, the acute phase disease was among the children under the 5 age, the prevalence of disease in male and female was equal among children and the adults (6).

In this study the most lesions were seen in the hands (45.6 percent), face (23 percent), legs (19 percent) and other parts of the body (12.4 percent).

Culture, customs and geographic location of Kashan, presence of contaminated centers in Badrood and Ardestan, and traverse of susceptible hosts specially the migration of Afghans to this areas are most important factors in expanding the disease (11,13). Because the Phlebotomus attack the exposed area of the body to suck the blood, the lesions mostly appears in the hands, face and legs (14).

Considering the fact that about 30.3 percent of patients had more than one skin lesions, we concluded that the sandfly bites the host more than one time the most increase in the prevalence of disease in the next years was due to the parasite enters the bloodstream from every area of the bite(15,16,17,18).

Our findings also indicate that the greatest rate of leishmaniasis was accured in November and December due to the existence of dominant species of *L. major*, in this area.

The highest rate of prevalence was in 1997 Fig 2 but had a great drop in 1998 and the next year. However, in 2001 we

observed a mild increase in the prevalence and this may be due to acquired natural immunity against the dominant species of *Leishmania*.

Recent observation suggests that, only 60.6% have referred to the therapeutic centers and only 30 percent of them have treated. All together we suppose that, in the cases of lesions on the unexposed areas of the body, if with good health care to prevent secondary bacterial contamination, spontaneous resolution of lesions and natural immunity is possible (14). It should be mentioned that, anti-leishmaniasis drugs are very expensive and carry with them different side effects (19, 20, 21, 22, 23).

## **CONCLUSION**

We recommended the authorities to take serious actions against the leishmaniasis to maintenance the health and safety of the community.

## **ACKNOWLEDGMENTS**

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