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Short Communication

Prevalence of cutaneous leishmaniasis during 2010 in Mazandaran Province, Iran

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Leishmaniasis includes a wide variety of diseases which are classified into three main categories: cutaneous leishmaniasis, muco-cutaneous leishmaniasis, and visceral leishmaniasis. Cutaneous leishmaniasis is one of the health problems in tropical regions and a priority of world health. The vector of this disease is female sand fly from *Phlebotomus* specie. This descriptive-inferential retrograde study was conducted on all 62 individuals that were diagnosed with cutaneous leishmaniasis using clinical and lab finding and underwent treatment for this disease in seven health centers of Mazandaran province from January to December 2010. It was carried out during one year in all the health centers of Mazandaran province. During the study of the 62 cases, it was recognized that 37 (59.67%) were male and 25 (40.33%) were female and the most common type of cutaneous leishmaniasis seen in this province was the rural or wet type (61.3%). Considering the high prevalence rate and distribution of leishmaniasis in Iran, it is crystal clear that accumulating data about vectors and reservoirs of each region for prevention and control programs play prominent role in this case.

Key words: Cutaneous leishmaniasis, Mazandaran province, Iran.

INTRODUCTION

Leishmaniasis includes a wide variety of diseases which are classified into three main categories: cutaneous leishmaniasis, muco-cutaneous leishmaniasis, and visceral leishmaniasis. Cutaneous leishmaniasis is one of the health problems in tropical regions and a priority of world health (Murray et al., 2005; Rassi et al., 2004). Cutaneous form usually present as a scar and is endemic in many countries especially tropical ones (Alavinia et al., 2009). This is a common disease in different countries of Asia such as China, Syria, Arabia, Iran, Iraq, Caucasia, south east of Russia, Pakistan, Afghanistan, and India and each year, at least twelve million people in the world get infected with one of its types as urban (dry) or rural (wet) leishmaniasis (Razmjou et al., 2009; Reithinger et al., 2005). The vector of this disease is female sand fly from some *Phlebotomus* specie which is almost distributed in all parts of Iran (James et al., 2006).

There are many places infected with leishmaniasis in Iran which are distributed all over the country. It is estimated that each year, almost fifteen thousand people are infected with this disease (Nadim, 2000). Considering that some types of cutaneous leishmaniasis are zoonotic and have animal reservoir, especially Gerbils, the importance of this disease for health centers of the country becomes clear and it shows the need for more attention in all aspects (Kolaczinski et al., 2004). There is no data in this area about vector or reservoir host, because leishmaniasis is not an endemic disease in this province. The aim of this study is determining the prevalence of leishmaniasis in Mazandaran province located in north of

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Table 1. Determination of morbidity rate of cutaneous leishmaniasis in Mazandaran province according to sex, type and location of the lesion, residential area and season.

Total infections case {No. (%)}	Sex {No. (%)}		Type of lesion {No. (%)}		Location of the lesion {No. (%)}				Place of residence {No. (%)}		Season {No. (%)}			
	Male	Female	Dry	Wet	Hand	Foot	Face	Other locations	Urban	Rural	Spring	Summer	Autumn	Winter
62 (100)	37 (59.67)	25 (40.33)	24 (38.7)	38 (61.3)	29 (46.77)	20 (32.25)	6 (9.67)	7 (11.73)	22 (35.48)	40 (64.52)	6 (9.67)	13 (20.96)	33 (53.22)	10 (16.15)

Iran near to Golestan province, an endemic area of leishmaniasis, during 2010.

MATERIALS AND METHODS

This descriptive-inferential retrograde study was conducted on all 62 individuals that were diagnosed with cutaneous leishmaniasis, using clinical and lab finding, and underwent treatment for this disease in 7 health centers of Mazandaran province from January to December 2010. The necessary data including age, sex, residential area, type and location of lesion, season, and the history of traveling to endemic areas for this disease was carefully collected. Mazandaran has a total population of 2602008, 45.9% are settled in urban areas and 54.1% in rural areas.

Surface of a clean slide was pressed on to the scraped part of the lesions and moved along to produce a smear on the slide. The slides were fixed with methanol, stained with standard Giemsa, and examined carefully under high magnification for an hour or more to look for amastigotes (Edrissian et al., 1982). Two smears were prepared and examined from each patient and were collected and analyzed with Z- test and SPSS statistical software.

RESULTS

This study was carried out during one year on all the health centers of Mazandaran province. During the study, 62 cases were recognized, of which 37 (59.67%) were male and 25 (40.33%) were female. The most common type of cutaneous leishmaniasis seen in this province was the rural or wet type (61.3%). Regarding the location of the lesions, most of the lesions were in hands (46.77%) and after that, in feet (32.25%). According to collected data, 64.52% were in rural areas and 35.48% were in urban areas. The disease was also studied according to the seasons of which the greatest rate of percentage was in autumn (53.22%) and the least was in spring (9.67%) (Table 1).

The infected cases were also studied according to their age ranges, with the greatest rate of infection seen in those between 21 and 30 years (38.7%) and the least was in those between 51 and 60 years (4.83%) (Figure1).

DISCUSSION

Cutaneous leishmaniasis is one of the health problems in tropical regions and a priority of world health. The fact that Mazandaran province is not one of the endemic areas for this disease makes it more important because almost all the infected cases had stated a history of traveling to endemic areas as shown in this study. This transportation of patients from infected areas to non-infected ones and that sand fly exists in the province diffusely shows that the province has the potential for becoming an endemic area, so, the authorities should pay more attention to prevention of this condition (Abbasi et al., 2004). As shown in this study, a great number of cases were infected with wet or rural leishmaniasis which may be due to being a neighbor of Golestan province and Gorgan and Gonbad cities which are one of the important endemic areas of this disease in Iran. Most of the lesions were shown to be located in hands and feet of the patients, which is in consistency with the findings of Abbasi's study in Gorgan. Due to covering other parts of the body more, there is increase in the possibility of hands and feet getting bitten by mosquitoes and as a result, the possibility of formation of a lesion in these areas increases (Abbasi et al., 2004).

Regarding age distribution, a remarkable percentage of the patients were 20 to 30 years old adults which are the most important active forces in labor. These individuals had traveled to endemic areas for different reasons such as labor, military services, etc. They got infected to this disease because they lacked knowledge on ways of transmission of this disease. Higher percentage in men than women in this study can be reflected in these facts; first, men are more active forces, they migrate seasonally looking for labor, second, they are less covered than women, and they also work in places where the carrier mosquitoes are found more. This finding is also shown in Zahirnia's study in Hamedan which showed a percentage of 93.8 in men as compared to only 6.2 in women (Zahirnia et al., 2009).

In regards to season of infection, the highest rate of infection in this study was in autumn (53.22%), besides, Nadim (2000) have stated that incidence rate of rural leishmaniasis has prominent seasonal changes and in winter, it reaches its minimum rate in endemic areas. In a study conducted by MohammadiAzani et al. (2010) in

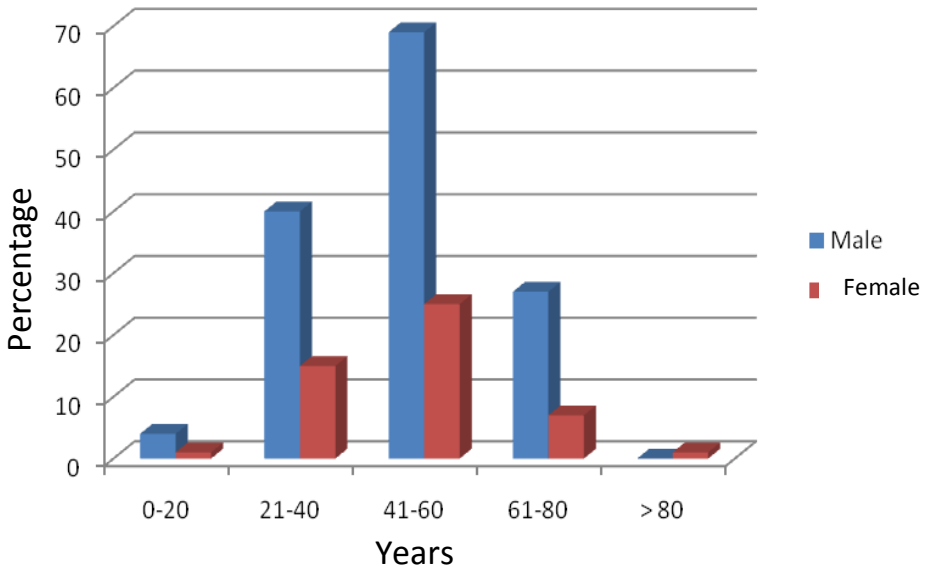

Figure 1. Determination of morbidity rate of cutaneous leishmaniasis in Mazandaran province according male and female age ranges.

Damghan, it was also shown that the highest rate of infection was in autumn. It can be concluded that because summer is the season in which the mosquitoes are active and considering the latency period of the disease, occurrence of the lesions are more in autumn (Doroudgar et al., 2009). Considering the high prevalence rate and distribution of leishmanasis in the country, it is better that data about vectors and reservoirs of each region be carefully studied and instructions for fighting sand fly, like prevention of mosquitoes' reproduction using poisons, protecting at risk individuals, and using repellants be carefully followed and applied. Finding the patients and treating them must be given great attention by authorities. In addition to the issues mentioned, health education, fighting rodents, improving the environment and correcting disposal of garbage and sewerage should also be given attention.

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