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ANTHROPONOTIC CUTANEOUS LEISHMANIASIS IN THE CITY OF BAM , SOUTHEAST IRAN*

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Abstract

Due to the high prevalence of anthroponotic cutaneous leishmaniasis (ACL) in Bam city , a survey was carried out to determine epidemiological characteritics of ACL in Bam in 1992. For this purpose , 23 out of the total 51 schools (elementary , junior high and senior high) were randomly selected and 6053 students were examined. The prevalence of acute sores and scars were 2% and 17% respectively.

A map of the city was prepared , showing the residence of acute cases seen in schools. 3 parts with higher concentration of cases were selected and house - to - house visits were made , examining all age groups. In 2155 persons examined , the prevalence of acute cases was 3.6% and prevalence of scars 26.9%.

Introduction

Anthroponotic cutanesous leishmaniasis (ACL) has been endemic in many parts of Iran since ancient times. After the start of malaria eradication programs in the country , it disappeard from many smaller cities and towns but its foci remained active in many larger cities and their suburbs like Mashhad, Sabzevar (2) and Neishabur (3) in Khorassan province , Tehran (1) , Shiraz (1), Kerman (4) and parts of the city of Isfahan (1). Since 1990 , the diseases is appearing in the form of severe epidemics in some towns and cities in the south and southeast of the country , on the southern slopes of the Zagros mountains. One of these foci is the city of Bam in the eastern part of Kerman

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province. In the last 5 years ACL has become the most important endemic disease in this city and a matter of concern for health authorities. Therefore a cross-sectional descriptive study of the diseases was carried out during 1992 in order to prepare the ground for overall control programs.

Materials and methods

The study site was the city of Bam in the center of Bam district which is in the eastern part of Kerman province , southeast of Iran. Its altitude is 1060 meters above sea level. the climate is hot in summer , sometimes about 50^{0}C, and mild in the winter. The city had a population of about 63000 in 1992, while this was only 50695 in 1986. Annual precipitation is very low (less than 80 mm per year).

The study has been carried out in two population groups: 1) Schools' students and 2) Three city zones (all age groups).

For the first group , we listed all the Schools of the city (51 Schools) and we selected 23 of them (12 girls' schools and 11 boys' schools). The details of which are given in Table 1. All the students in these 23 schools were visited to find out about acute sores or scars of ACL , year and locality of contraction , and site of the lesions on the body. In case of active sores smears were prepared and examined later in central laboratory in Tehran after staining with Giemsa. For the second group , 3 parts of the city were selected from which most active cases seen among students were coming from. 414 households in these 3 zones were visited and all members of the households were examined the same way as for schools' students.

Results and discassion

Altogether , 23 schools with 6053 students from 6 to 18 years of age were visited.

Table 1 shows the prevalence of ACL by age and sex in school students. It shows that 2% of them had active sores and 17% had acars. It also shows higher prevalence in 6-10 and 11-13 as compared to 14-18 age group , and higher rates in females.

Fig 1 shows the map of the city and the location of the houses of active cases. It is seen that the disease is more prevalent in the southern parts of the city in 1992.

Table 2 shows number of lupoid cases of ACL by age group and sex in school students. They have been included as scars in table 1. It shows that 1.5% of cases end up to become lupoid cases. There is no significant age and sex differences.

Table 3 shows the prevalence of ACL by age and sex in 414 households visited in 3 zones in the south of the city , It shows that the prevalence of active sores was 3.6% and the prevalence of acars 26.9% , both of them higher than what was seen in school students.

Fig 2 shows the incidence of ACL by year of contraction of the sore. This is a retrospective calculation of the incidence. It shows that the diseases had been endemic up to 1989 (most cases in this category had occurred in 1979) but the incidence rises sharply in 1990 , ie. the year of severe epidemics , then declines in 1991 to 6% and in 1992 to 3%. It also shows the incidence by age group for the same years. It shows the trend is almost similar in all age groups.

Fig 3 shows the prevalence of ACL by age group. Here also the higher rates are in age groups 6-10 and 10-15. Most of active cases are seen in children and adolescents.

Fig 4 is a pie diagram showing the frequency of number of sores in infected persons seen during house-to-house visit of 3 city zones.

The type of lesions , the morphology of the parasites in smears and high rate of lupoid cases indicate that we are dealing with ACL , although it is necessary to isolate and characterise the parasite.

This study shows that ACL is extending its geographical distribution to towns and cities in the southern slopes of Zagros mountains , i.e. in places with warmer climate.

The reason seems to be due to the increase of the population of the vector *(Ph. sergenti)* because of population increase , a phenomenon noticed in many places in our country as well as in other countries of the region.

Aknowledgments

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Table 1- Prevalence of ACL by age and sex in school students

Sex	Age group	No. Studied	Total cases		acute		Scar	
			No.	%	No.	%	No.	%
Male	6-10	1107	225	20.3	27	2.4	198	17.9
	11-13	1160	178	15.3	23	2.0	155	13.3
	14-18	465	60	12.9	3	0.6	57	12.3
	Total	2732	463	16.9	53	1.9	410	15.0
Female	6-10	655	142	21.7	17	2.6	125	19.1
	11-13	1051	244	23.2	24	2.3	220	20.9
	14-18	1615	300	18.6	29	1.8	271	16.8
	Total	3321	686	20.6	70	2.1	616	18.5
Both Sexes	6-10	1762	367	20.8	44	2.5	323	18.3
	11-13	2211	422	19.1	47	2.1	375	17.0
	14-18	2080	360	17.3	32	1.5	328	15.8
	Total	6053	1149	19.0	123	2.0	1026	17.0

Table 2- Lupoid cases of ACL by age group and sex in 6053 school students.

Sex	Age group	No. Lupoid cases
Male	6-10	5
	11-13	3
	14-18	0
	Total	8
Female	6-10	0
	11-13	3
	14-18	6
	Total	9
Both Sexes	6-10	5
	11-13	6
	14-18	6
	Total	17

Table 3- Prevalence of ACL by age and sex in 414 households in 3 zones.

Sex	Age group	No. exam.	Total cases		Active cases		Scars	
			No.	%	No.	%	No.	%
Male	0-5	141	32	22.7	7	5	25	17.7
	6-20	462	190	41.1	17	3.7	173	37.4
	> 20	502	61	12.1	5	1	56	11.1
	Total	1105	283	25.6	29	2.6	254	23
Female	0-5	115	27	23.5	4	3.5	23	20
	6-20	479	226	47.2	24	5	202	42.2
	> 20	456	121	26.5	21	4.6	100	21.9
	Total	1050	374	35.6	49	4.7	325	30.9
Both Sexes	0-5	256	59	18.6	11	4.3	48	18.7
	6-20	941	416	44.2	41	4.4	375	39.9
	> 20	958	182	19	26	2.7	156	16.3
	Total	2155	657	30.5	78	3.6	579	26.9

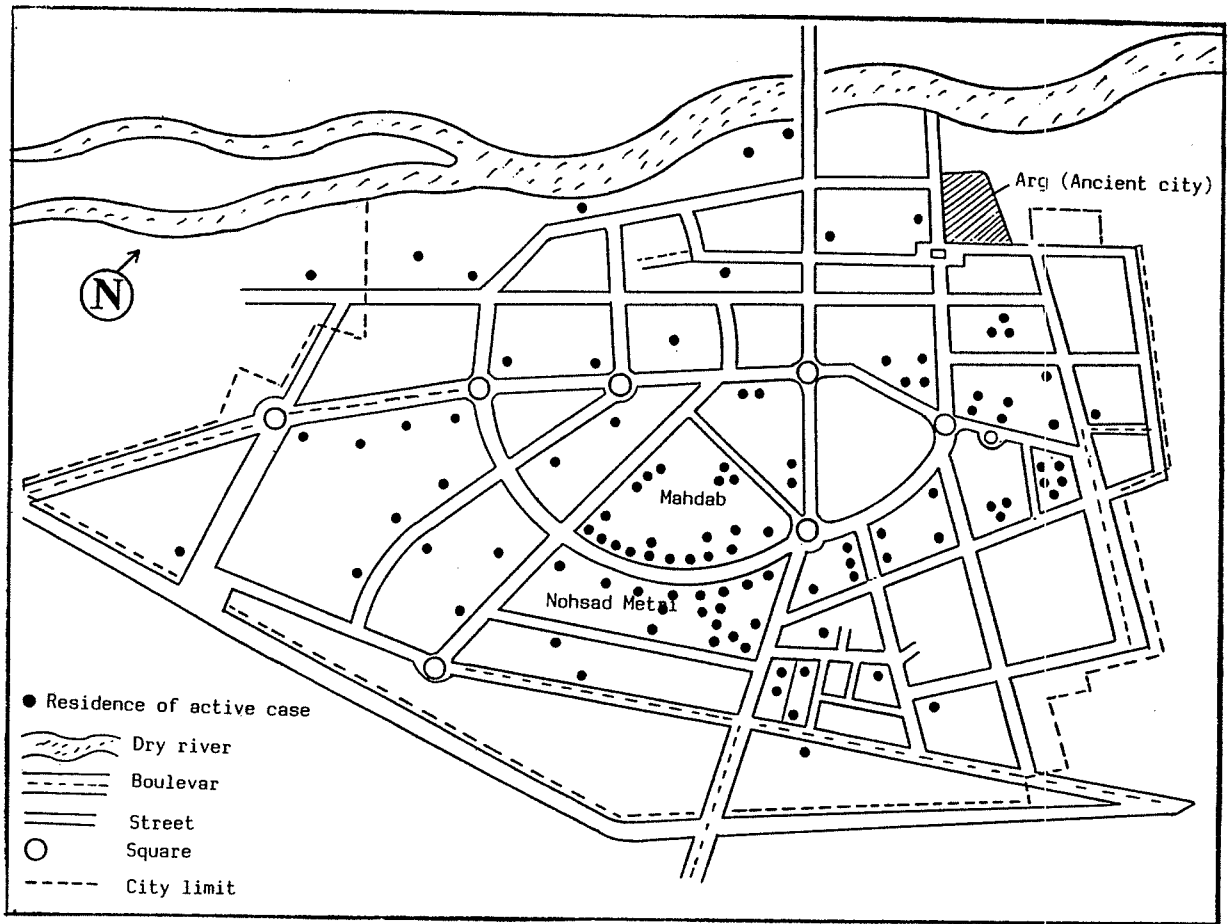

Fig 1- Map of the city of Bam with residences of active cases seen in schools

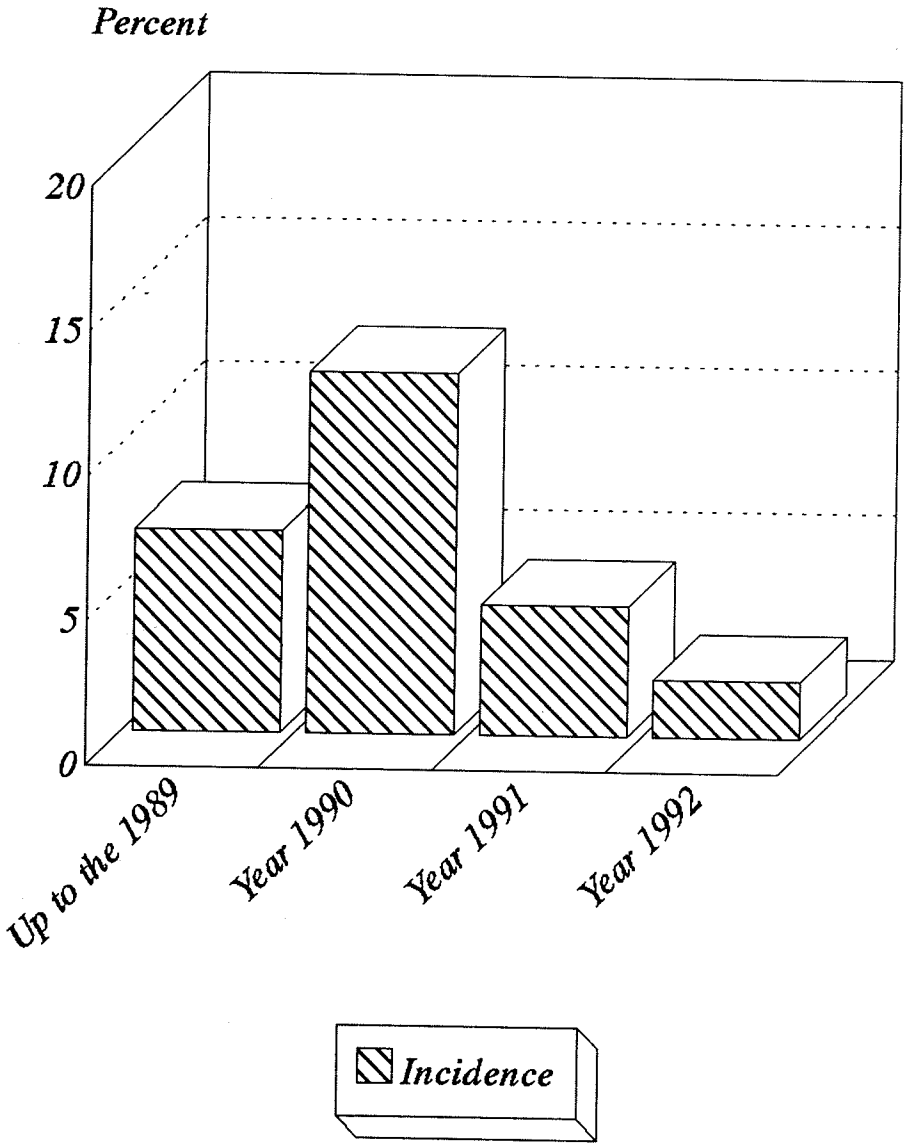

Fig 2- Incidence of ACL by year of contraction of the disease.

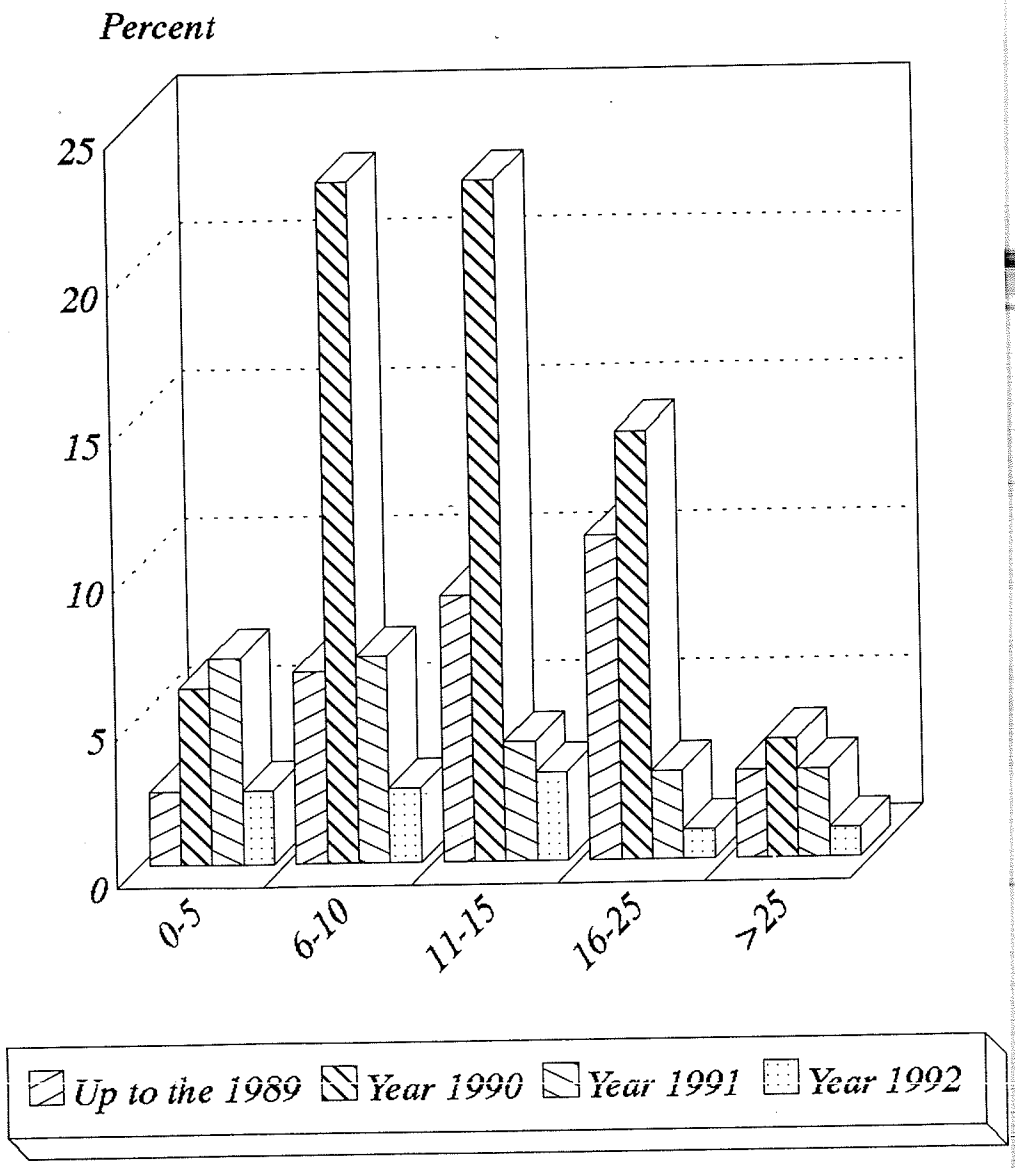

Fig 3- Incidence of ACL by Age group (year) and year of contraction of the disease.

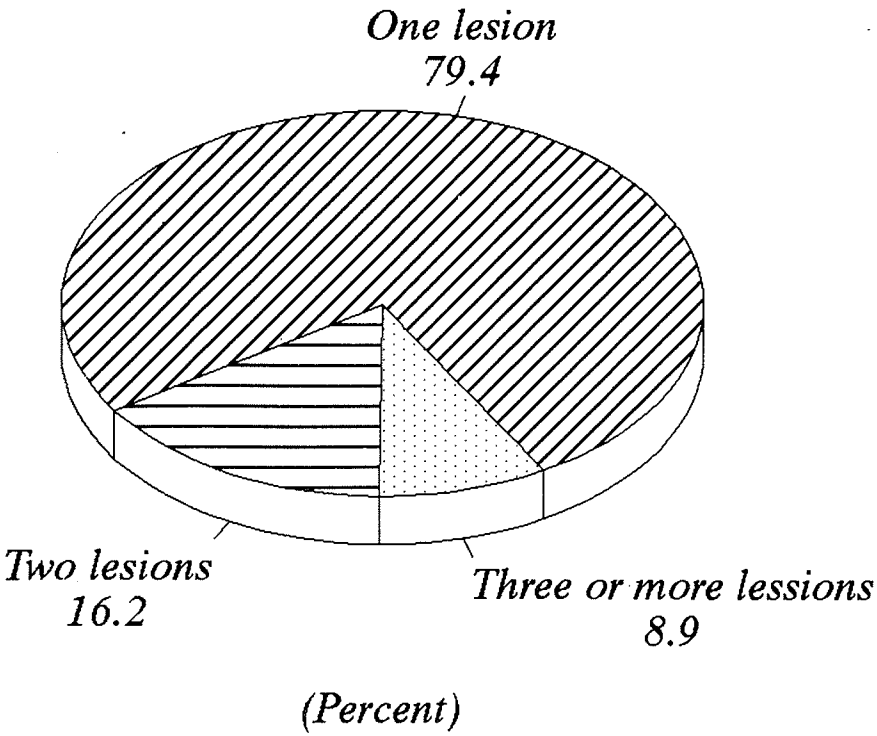

Fig 4 - Pie diagram showing relative frequency of the number of lesions in infected persons during house-to-house visit.

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