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57832

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WHO/LEISH/95.37
ENGLISH ONLY

**EVALUATION OF PYRETHROID IMPREGNATED BEDNETS
FOR CONTROL OF
ANTHROPONOTIC CUTANEOUS LEISHMANIASIS
IN BAM (ISLAMIC REPUBLIC OF IRAN)**

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**Project supported by the Division of Control of Tropical Diseases, World Health Organization, Geneva
(Project No. HQ/93/038514)**

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INTRODUCTION

Anthroponotic cutaneous leishmaniasis (ACL) is an important public health problem in the Middle East, especially in Iran, Syria, Turkey and Afghanistan.

In Iran, thousands of cases occur in large cities as well as in small towns. The main foci have been identified to be Mashad, Tehran, Shiraz, Kerman, Sabzevar and Neishabur. (1)

In recent years, the disease has been spreading geographically towards the southern slopes of the Zagros mountains in the south, perhaps due to an increase in the population and in the density of Ph. Sergenti. (2)

Recent reports on the effectiveness of the use of pyrethroid-impregnated bednets in controlling malaria in several countries encouraged an evaluation of the same method to control ACL in Iran.

This is the final report of the project which received financial support from the Division of Control of Tropical Diseases, World Health Organization, Geneva.

BACKGROUND

Use of impregnated bednets for malaria control

Various forms of screening for personal protection are popular today in many parts of the world and are used by different social groups ranging from traditional communities to tourists on camping safaris in malaria endemic areas.

Bednets too have long been considered to be a useful protection against malaria and other vector borne diseases where the probability of contact with mosquitoes is high. Hence, people in such communities who do not use nets or temporarily rest outdoors, are vulnerable to infection from mosquito bites.

Tests carried out in laboratories and experimental huts of bednets impregnated with organophosphorous compounds and pyrethroids, indicated that pyrethroid was better suited because of its safety for humans, its rapid insecticidal effect, low volatility, long lasting persistence on netting and lack of odour. (3)

Most of the studies were based on entomological and epidemiological data collected in experimental hut studies or trials carried out at the village level.

In most areas where impregnated mosquito nets have been introduced, planning, management and operations were in the hands of specially assigned researchers and their staff. These activities are not part of a general policy to integrate vector control with impregnated bednets in the available health structure unlike certain exceptions in some provinces in China and a project in Papua New Guinea which have focused on the organizational aspects of integrating malaria control with impregnated mosquito nets in the local health services. (4)

Selection of the study area

A team visited Bam in the second half of February 1994 and examined reports of ACL cases during the previous two years, prepared a spot map of cases, identified areas with highest incidence rates on the map and selected two areas for the study: Nohsadmetri and Mahdab.

Random allocation:

At the toss of a coin, Mahdab was decided as the intervention area and Nohsadmetri as the control area.

Collection of baseline data

A plan was prepared for rapid epidemiological assessment (REA) of the two areas consisting of:

- a) preparation of the map and selection of about 250 households in each area;
- b) collection of information on the age and sex composition of the households, prevalence of sores and active lesions, sleeping places during the summer months, use of bednets and willingness to use impregnated bednets if provided free of charge. (See Annex Study Form)

The REA was carried out during the first week of March 1994.

Table 1 and Figure 1 show the results of this survey in the two selected areas. Prevalence of active sores was 2% in Nohsadmetri and 2.8% in Mahdab. Scar rates were 25% and 32% respectively. Although both were higher in Mahdab, the difference was not significant statistically.

Table 2 shows the distribution of households according to the number of inhabitants, Mahdab having more households with one or two members.

A survey of sleeping places in the households during the summer months at night showed that the absolute majority slept in the courtyard.

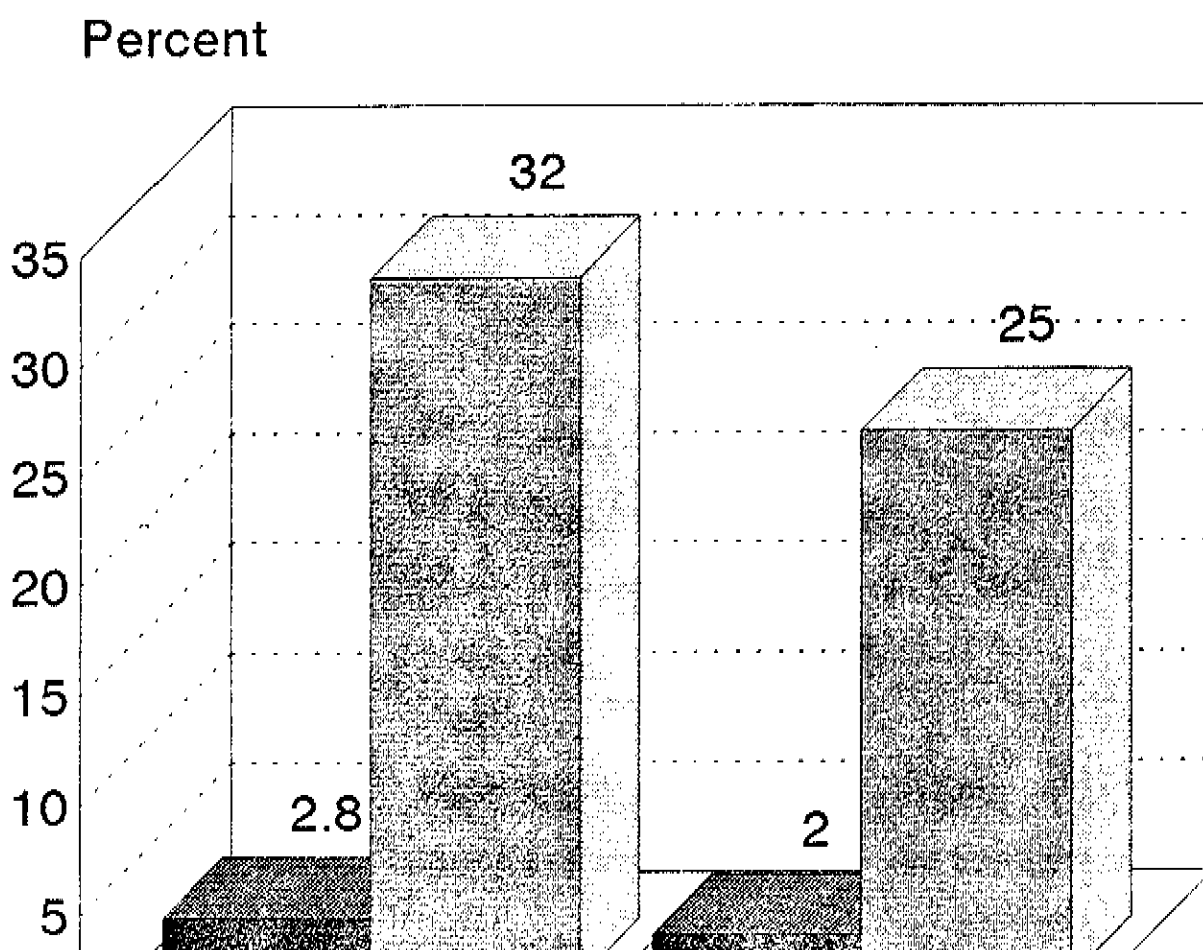
Table 1- ACL in Bam city by area, age and sex-Bam, March 1994

Area	Population Studied	Age			Sex		Scar	Active lesion
		<5year	5-14	15 +	M	F	No/ %	No/ %
		No %	No %	No %	No %	No %		
Nohsadmetri	1293	157	332	804	657	636	319	26
		12	26	62	50.5	49.5	25	2
Mabdab	1121	110	263	248	563	558	362	31
		10	23	67	50.5	49.5	32	2.8
Total	2414	267	595	1552	1220	1194	681	57
		11	25	64	50.5	49	28	2.4

Table 2- Distribution of households in two areas surveyed for ACL in Bam
city by area and number of persons in household, Bam-March 1994

No. of persons in the household	Area			
	Nohsadmetri		Mahdab	
	No.	%	No.	%
1	5	2	18	7
2	30	12	45	18
3	40	16	42	17
4	35	14	33	13
5	44	17	30	12
6	26	10	31	12
7	29	11	21	8
8	22	9	10	4
9	14	5	9	4
10	7	3	9	4
11	2	1	2	1
Total	254	100	250	100

***Fig.(1) : ACL in Bam by area.
Bam, March, 1994***



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