

## AWARENESS AND PRACTICE OF PREVENTIVE STRATEGIES IN PATIENTS OF CUTANEOUS LEISHMANIASIS

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### ABSTRACT

**Objective:** To find the level of awareness and practice of preventive strategies in patients of cutaneous leishmaniasis (CL), presenting to dermatology outpatient department (OPD) of Combined Military Hospital Peshawar.

**Study Design:** Descriptive/observational.

**Place and Duration of Study:** Dermatology department, Combined Military Hospital, Peshawar from Oct 2015 to Jan 2016.

**Material and Methods:** One hundred patients of cutaneous leishmaniasis from dermatology OPD were selected after informed consent and permission from Hospital Ethical committee. They were given a comprehensive questionnaire comprising questions about socio-demographic factors, knowledge and practice of preventive strategies against cutaneous leishmaniasis.

**Results:** All the affected patients were males. Mean age was  $29.34 \pm 7.69$  years. All were serving persons. All the patients developed the disease while serving in FATA and surrounding areas. Mean disease duration was  $3.79 \pm 2.6$  months. Questions regarding attitudes and practices revealed that 75% patients were sleeping on the floor, 43% acquired the disease while living in residences made from rocks and mud, 34% lived near forests, 63% were using mosquito nets, 75% were using mosquito repellent, 38% had regular insecticidal spray and 87% were using barrier clothing.

**Conclusion:** There is a need for more health education to create awareness amongst our troops and it should also be stressed that the preventive measures must be ensured at unit and brigade level to minimize the incidence of the disease. For effective anti-sandfly measures, the referred document may be consulted.

**Keywords:** Cutaneous leishmaniasis, Preventive strategies.

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### INTRODUCTION

Leishmaniasis, means both cutaneous and visceral infection, caused by a vector-borne parasite of the genus *Leishmania*. The vector of the disease is a sand fly. Among the two forms of infection, cutaneous leishmaniasis is more common<sup>1</sup>. The disease is characterized by presence of multiple nodule, plaques or ulcers on the exposed parts of the body. Among all the infectious diseases in the world, cutaneous leishmaniasis is ranked 9th in the overall disease burden<sup>2</sup>. In Pakistan, the estimated annual incidence is from 21700 to 35700 cases<sup>2</sup>. There are scattered foci of the disease in northern areas,

Lasbella, Makran, north Punjab and KPK<sup>3</sup>. It is however, endemic in Baluchistan, federally administered tribal areas, interior Sindh, and south Punjab<sup>4-6</sup>. Occurrence of both wet- and dry-types of lesions in Pakistani patients indicate that both *L. tropica* and *L. major* are present in Pakistan<sup>7</sup>. Though cutaneous leishmaniasis is self-healing, but treatment is necessary to reduce the patients' agony and prevent scarring. There are several treatment options available<sup>1,6</sup> but meglumine antimoniate (Glucantime)<sup>6</sup> is still the treatment of choice. Even with the best treatment, cure is achieved in 3 to 4 weeks. Hence, it is far more important to pay attention to the control and prevention of the disease. For planning of any preventive strategy an adequate knowledge of the disease and interactions among various factors like human behavior, environment, vector

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and the parasite is essential. A holistic approach in implementation of preventive strategies is of foremost importance in controlling the disease burden<sup>8</sup>. The rationale of this study to find the level of awareness and practice of preventive strategies in patients of cutaneous leishmaniasis (CL), presenting to dermatology outpatient department (OPD) of Combined Military Hospital Peshawar.

## **MATERIAL AND METHODS**

This descriptive study was carried out in Combined Military Hospital Peshawar from 10<sup>th</sup> Oct 2015 to 10<sup>th</sup> Jan 2016. The study population was the patients suffering from cutaneous leishmaniasis who report to the skin outpatient department of Combined Military Hospital Peshawar, a tertiary care hospital of Pakistan Army in KPK province. The inclusion criterion included presence of one or more nodules or plaques, with or without ulceration, on exposed areas of the body for more than a month; history of acquisition of disease in a known endemic area and laboratory confirmation by either slit-skin smear or histopathology. The exclusion criteria included patients whose diagnosis could not be confirmed by laboratory test and those who did not consent to fill up the Performa and participate in the study. Total 100 patients were selected by non-probability consecutive sampling. The patients were selected after informed consent and permission from Hospital Ethical committee. They were given a comprehensive questionnaire comprising inquiries about socio-demographic factors, knowledge and practice of preventive strategies against cutaneous leishmaniasis. The data was analyzed by using SPSS version 21. Descriptive statistics were used to describe the data. Mean and SD was calculated for quantitative variables. Frequency and percentage were obtained for qualitative variables.

## **RESULTS**

The study comprised of 100 male patients. All of the patients were serving persons who had acquired the disease while serving in various areas of FATA and KPK. The age ranged from 21

to 55 years. Mean age was  $29.34 \pm 7.69$  years. All were all serving persons. As far as the areas of acquisition of infection is concerned; 71 patients were from North Waziristan, 9 from Khyber agency, 4 from Mahmud agency, 1 from South Waziristan, 3 from Bannu, 6 from suburbs of Peshawar, 1 from DI Khan and 5 were from other areas of KPK including Swat. Mean disease duration was  $3.79 \pm 2.6$  months. Minimum duration was 15 days and maximum was 12 months. Clustering of cases was pointed out by 64% of the patients. Questions regarding attitudes and practices revealed that 75% patients were sleeping on the floor when they acquired the disease, 9% were sleeping at the height of 1 foot and 16% at the height of 2 feet above the ground. Fort three percent acquired the disease while living in residences made from rocks and mud, 2% lived in wooden houses, 19% lived in tents and only 36% lived in proper cemented houses. Twenty five percent had their residence in the forest when they acquired the disease, while 34% lived near forests and 41% lived away from the forests. Questions regarding knowledge about disease revealed that 56% knew about the disease and were aware of the preventive measures. Sixty three percent were using regular mosquito net while sleeping and 75% were using mosquito repellent regularly of which Mospil was the most commonly used brand. Only 38% had regular insecticidal spray at their residences and 87% were using barrier clothing while performing evening and night duties.

## **DISCUSSION**

As obvious from the results, most of the patients included in the study contracted this disease while they were serving in FATA, especially North Waziristan. The patients were mainly residing in or close to the forests, living in mud houses and were sleeping on the floors. All these factors make them more vulnerable to bites by sand flies. The patients were often aware of the disease and its preventive strategies like use of mosquito nets, barrier clothing, insect repellents and insecticide sprays. It is presumed that these measures were not practiced in their

true spirit, because even after doing all this, these patients suffered from the infection. Hence the main flaw seems to be in the implementation and practice of the preventive strategies. In similar studies on the subject, it is found that variability in ecological and biological characteristics of sandfly and leishmania parasite, are the main limiting factors in the disease prevention<sup>9</sup>. It is further recognized that serving persons were significantly affected by CL, as they exercise/operate in areas inhabited by sandflies. These men were unfamiliar to the disease and had no previous immunity. Hence, they suffer from multiple bites. The study proposed to control the disease by regular insecticide spray, widespread case detection and timely treatment<sup>9</sup>.

It is accepted that prevention and control schemes mainly focus on treatment of individuals suffering from the disease, rather than eradication of reservoirs or limiting human-vector contact<sup>10</sup>. Sandflies are exceedingly vulnerable to insecticides<sup>11</sup>. Personal protection measures include, insect repellents, insecticide-impregnated clothes, bed nets, bed sheets and curtains<sup>12,13</sup>. For better prevention of the disease it is recommended to conduct field studies to explore the ecology of sandflies, because they are corner stone of all the fundamental and acceptable control and prevention strategies<sup>14</sup>.

## CONCLUSION

The findings of the present study revealed that although more than half patients (56%) were aware about the disease and its preventive measures, they still suffered from the infection. This means the preventive measures were not properly practiced. The flaws included irregular insecticide sprays, use of mosquito nets (sandfly nets have smaller holes) and improper/irregular use of mosquito repellants. There is a need for more health education to create awareness amongst our troops and it should also be stressed that the preventive measures must be ensured at unit and brigade level to minimize the incidence

of the disease. For effective anti-sandfly measures, the referred document may be consulted<sup>15</sup>.

## CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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