Original Article

Cutaneous Leishmaniasis in Karachi

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ABSTRACT

Background Cutaneous leishmaniasis (CL) is an infection caused by a protozoan parasite of the genus Leishmania, which is endemic in various parts of Sindh and Baloachistan and is widely spreading day by day.

Objective: To know the frequency of Cutaneous Leishmaniasis in the dermatology OPD and ward of JPMC, Hospital, Karachi. These patients were sent to microbiology Department, Basic Medical Sciences Institute (BMSI), Jinnah Postgraduate Medical Centre, Karachi, for observing Amastigotes (LD Bodies) by microscopy to diagnose the cases.

Study Design: Experimental study.

Place and Duration: This study was carried out in the Department of Microbiology at BMSI, JPMC, Karachi, from November 2003 to April 2004.

Materials and Methods: The suspected cases of Cutaneous Leishmaniasis on clinical ground were sent by the dermatology OPD and ward of JPMC, Hospital, wounds were cleaned by the alcohol (spirit) swab. The smear prepared from the skin ulcer tissues were stained with Field Stain A and B for microscopy to confirm the diagnosis by detecting Amastigotes (LD Bodies).

Results: The total of 67 suspected patients with skin lesions were examined and 42 were found to be suffering from CL, on the basis of observing Amastigotes (LD Bodies) by microscopy. Their ages ranges from 2years to 58 years. Among these cases 29 (69.04%) were males and 13 (30.96%) were females. Multiple lesions were seen in 16 (38.10%) cases only. Size of lesion varies from 1-10cms. Body distribution were 16 (38.10%) on upper limbs, 13 (30.95%) on lower limbs, followed by 2 (4.76%) head, 3 (7.15%) neck, 4 (9.53) face and 2 (4.76%) nose, 1(2.38%) trunk and abdomen 1 (2.38%). Morphological patterns seen were crusted plaques, non-healing ulcers, erythematous infiltrated nodules and papules. From above morphological forms 25 (59.14%) were wet type of lesions and 17 (42.86%) were dry type of lesions Majority of the cases were from the rural area 32 (76.19%) as compared to 10 (23.81%) urban area of the city.

Conclusion: Cutaneous leishmaniasis is endemic and increasing in Karachi and its surrounding area.

Key words: Leishmaniasis, Leishmania tropica, Amastigotes (LD Bodies).

INTRODUCTION

Cutaneous Leishmaniasis is a parasitic disease caused by haemoflagellate *Leishmania*[1], an intracellular protozoa parasite, and it affects 12 million people worldwide, with 1.5-2 million new cases each year. The incidence of leishmaniasis has increased in recent years due to increased international leisure-and military-related travel, human alteration of vector habitats, and also HIV infection and malnutrition. Cutaneous leishmaniasis (CL) is a rising epidemic in Pakistan [3]. It is a major public health problem in the country especially near Afghanistan border and cities that have had the maximum burden of refugees.[2,3,4] Postigo has lighted that Pakistan in particular has to focus both anthroponotic cutaneous leishmaniasis caused by Leishmania tropica (L. tropica) and zoonotic CL caused by Leishmania major (L. major) with epidemics occurring in various parts of the country. L. tropica is mostly seen in urban areas whereas L. major is more common in rural areas of the country. Disease that is responsible for cutaneous lesions which develops at the site of the insect bite, is usually noted on exposed parts of the body, mainly arms, face, and legs. The clinical manifestations are extremely diverse including unusual sites and atypical morphologies.[5,6,7,8] It comprises a complex of diseases with an important clinical and epidemiological diversity. It has 3 clinical forms, visceral, mucocutaneous, and cutaneous.[9,10]

Cutaneous Leishmaniasis is largely diagnosed by its clinical appearance, in an endemic region. There is diagnostic problem when cases appear in non-endemic areas, particularly when the clinical picture is distorted, or any atypical variants are seen even in endemic area.[11] One of the most important causes of chronic ulcers in some parts of the tropical World are the protozoa belonging to the genus Leishmania causes Cutaneous Leishmaniasis (CL). It is classified on the basis of a variety of biochemical, immunological, and molecular criteria.[12] In Pakistan cutaneous leishmaniasis found sporadically throughout the year and various out breaks are reported frequently. The disease, once endemic in Baluchistan, has become highly prevalent in Sindh, North West Frontier Province and parts of Punjab. The present survey was conducted after the outbreaks of cutaneous leishmaniasis in the mountainous belt of upper Sindh.[13] Movement of immigrants into the endemic areas, increase in tourism, decrease in the use of insecticides have all contributed to increase in the number of leishmaniasis cases estimated numbers will

exceed 500,000 new cases annually, only in visceral leishmaniasis. The prevalence of various types of leishmaniasis worldwide is more than 12 million cases.[14,15,16]

MATERIALS AND METHODS

The 67suspected cases of Cutaneous Leishmaniasis on clinical grounds were sent by the Dermatology OPD and ward of JPMC, Hospital, to Microbiology Department, Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi. The skin specimens were obtained by standard procedure and wounds were cleaned by the alcohol (spirit) swab. The smear prepared from the skin ulcer tissues were stained with Field Stain A and Field Stain B for microscopy.

Out of 67suspected cases, 42cases of Cutaneous Leishmaniasis were diagnosed by observing Amastigotes (LD Bodies).

RESULTS

The total of 67 suspected patients with skin lesions were examined and 42 were found to be suffering from CL, on the basis of observing Amastigotes (LD Bodies) by microscopy. Their ages range from 2 years to 58 years. Among these cases 29 (69.04%) were males and 13 (30.96%) were females. Multiple lesions were seen in 16 (38.10%) cases. Size of lesion varies from 1-10cms.

Table No.1: Age and sex distribution of affected patients

Age group	Male	%age	Female	%age	Total cases	%age
2-10	2	(4.76)	1	(2.38)	3	(7.14)
11-20	4	(9.53)	2	(4.76)	6	(14.28)
21-30	8	(19.04)	3	(7.15)	11	(26.19)
31-40	6	(14.28)	3	(7.15)	9	(21.42)
41-50	5	(11.90)	2	(4.76)	7	(16.67)
51-58	4	(9.53)	2	(4.76)	6	(14.28)
Total	29	(69.04)	13	(30.96)	42	(100)

Table No.2: Distribution of lesion on the body parts

No.	Body parts	Number of cases	percentage
1.	Upper limbs	16	(38.10%)
2.	Lower limbs	13	(30.95%)
3.	Head	2	(4.76%)
4.	Neck	3	(7.15%)
5.	Face	4	(9.53)
6.	Nose	2	(4.76%)
7.	Trunk.	1	(2.38%)
8	Abdomen 1(2.39%)	1	(2.38%)
Total	8	42	(100%)

Body distribution were 16 (38.10%) on upper limbs, 13 (30.95%) on lower limbs, 2 (4.76%) on head, 3 (7.15%) on neck, 4 (9.53) on face and 2 (4.76%) on nose, (26.19%), on trunk (2.38%).and abdomen 1(2.38%), as shown in table 2. Morphologically, predominant patterns seen was erythematous infiltrated nodules and followed by crusted plaques. From above morphological forms 25 (59.14%) were wet type of lesions and 17 (42.86%) were dry type of lesions. Majority of the cases were from the rural area 32 (76.19%) as compared to 10 (23.81%) urban area of the city.

Table No.3: Type of lesion in the patients with age groups

Age group	Wet type of lesion	%age	Dry type of lesion	%age	Total cases	%age
2-10	2	(4.76)	1	(2.39)	3	(7.15)
11-20	4	(9.53)	2	(4.76)	6	(14.28)
21-30	5	(11.90)	6	(14.28)	11	(26.19)
31-40	5	(11.90)	5	(11.90)	9	(21.42)
41-50	4	(9.53)	2	(4.76)	7	(16.67)
51-58	5	(11.90)	1	(2.39)	6	(14.28)
Total	25	(59.14)	17	(42.86%)	42	(100)

DISCUSSION

In more than 80 countries of the world cutaneous leishmaniasis is endemic. Endemic areas include Argentina, USA, Middle East, India, Pakistan, Iran and North & East Africa. In Pakistan, it has become a particular health problem in many parts of the country. It occurs with various presentations from the self-limited and even self-healing cutaneous forms to fatal systemic disease. Systemic leishmaniasis is not common in Pakistan and invariably fatal if not treated promptly.[17]

Cutaneous leishmaniasis is common in those areas of our country which are near to the Afghanistan border such as many villages and towns of Baloachistan and Khyber Pahtunkhwa (KPK) provinces north Waziristan and many districts and some cities of interior Sindh and Punjab.[18,19,20]. Most lesions were present on an exposed area of the body.

In our studies the age groups affected were from 2 years to 58 years. But disease can affect at any age group depending upon the bite of insect. Multiple lesions were seen in 16 (38.10%) cases.Out of total 42 (100%) patients 29 (69.04%) were males and 13 (30.96%) were females. This finding is nearer previous study from Nawabshah by Rajpar GM (62.19%) and (38.8%) respectively, it shows little difference[21], in a study from Iraq, 57% males were sufferers and It was found that 58% (62 cases) had multiple lesions, while 42% had a single lesion[23]. In a study by a Zubair Khan from Peshawar has also reported the majority of the male patients (72.7%) and females were (27.3%). He also mentioned 64% patients from rural areas, about36% from urban areas. Majority of the cases were from the

rural area 32 (76.19%) of the city as compared to 10 (23.81%) urban area, there is a little difference between the two. Distribution of the sites of the lesions was as follows: 15 (35.71%) on upper limbs; 13(30.95%) on lower limbs, on head 2 (4.76%), on face; 4(9.53%) on nose 2 (4.76%). In a study from Iraq, distribution of the sites of the lesions was as follows: 57% on upper limbs; 25% on face; 15% on lower limbs; 2% on the scalp. This difference may depend the covering or uncovering of the body parts during sleeping time. In our study 25 (59.53%) were wet type of lesions and 17 (40.47%) were dry type of lesions, where as figures from Iraq shows while 63.5% were Wet type and 36.5% were Dry type. This little difference may be due individual body response or due to some environmental conditions.

CONCLUSION

This study shows that Cutaneous leishmaniasis is endemic and increasing in Karachi and its surrounding areas. It is a major health problem in our country. This problem can be decreased by implementing precautionary measures including to improvement of hygienic condition s and public awareness programs.

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