

Original article

Leprosy in Hyderabad

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Abstract *Background* Leprosy is endemic in Pakistan with an uneven distribution. Hyderabad is the fifth largest city of the country with a polyethnic population.

Objective To document demographic and clinical characteristics of leprosy in patients of Hyderabad region.

Patients and methods We reviewed 1938 patients of leprosy registered during 1967 to 2002 in all the functional leprosy centres of Hyderabad.

Results Males and females were equally affected. Over 65% of cases were in their 2nd to 5th decade of life. Pauci- and multibacillary leprosy were seen with almost similar frequency. The commonest presentation was tuberculoid leprosy (34.5%), followed by the rest. The prevalence of leprosy was highest in Indian migrants (57.53%) as compared to local Sindhis (15.37%).

Conclusion Leprosy in Hyderabad more commonly occurs in Indian migrants than in other ethnic groups. It equally affects both sexes and paucibacillary disease is more common.

Key words

Leprosy, Hyderabad

Introduction

Leprosy is a chronic non-suppurative inflammatory disease caused by *Mycobacterium leprae*. Leprosy has affected humanity since time immemorial. Spectrum of this disease shows wide diversity of clinical manifestations. It depends upon patients' cell-mediated immune response.¹ According to Ridley-Jopling classification,² it ranges from lepromatous

leprosy pole (LL), borderline lepromatous (BL), borderline (BB), borderline tuberculoid (BT), to tuberculoid pole (TT), where patients develop high level cell-mediated immunity.

Susceptibility to the disease is probably genetically linked. A recessively inherited HLA-linked gene (HLA-DR3) has been implicated for predisposition to tuberculoid leprosy.³ A dominantly HLA-linked gene (HLA-MTI, HLA-DR2) has been implicated to lepromatous end of spectrum.^{4,5} However, primary resistance to the disease is not influenced by HLA haplotype and has been attributed to a number of factors; mode of entry of bacilli, antigenic load etc.

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Even the best efforts by WHO have not been successful in complete eradication of leprosy from the globe. In Pakistan, leprosy is found in a focal pattern. Karachi and Hyderabad have 70-75% of the total leprosy patients.⁶ According to the 1998 consensus, Hyderabad was the fifth largest city of Pakistan with a population of about 2.9 million,⁷ whereas the Hyderabad division had a population of around 6.9 million, comprising of different ethnic groups. The study presented, herein, highlights the prevalence of leprosy according to age, sex, type of leprosy in various groups.

Patients and methods

All leprosy patients (n=1938) registered in Hyderabad and Latifabad leprosy centres, and leprosy section of department of dermatology, Liaquat University of Medical and Health Sciences, Hyderabad during 1967 to 2002 were analyzed in this study. The centre in Hyderabad City covers the Hyderabad City up to Halla, Bossri, Tando Allahyar, Tando Jam, Jamshoro, Sun, Khanot, Ranikot and Thano Bulla Khan whereas Latifabad centre covers Latifabad, Hussainabad and Qasimabad. The diagnosis of disease was based on the clinical features, smear for acid-fast bacilli and histopathology. According to the number of lesions, the disease was classified as pauci- (if the number =5) or multibacillary (if the number =5).⁸ The patients were analyzed according to age, sex, type of leprosy and deformity and ethnic origin. The ethnic origin was broadly grouped as Indian migrants, Sindhi, Pathan, Punjabi, Balochi and others.

Results

The results of this study showed that the prevalence of leprosy was markedly low in the first decade i.e. 3.8% as compared to majority of

Table 1 Distribution of leprosy patients according to age groups

<i>Age group (yrs)</i>	<i>N (%)</i>
<10	73 (3.8)
10-19	262 (13.5)
20-29	309 (15.9)
30-39	331 (17.1)
40-49	336 (17.3)
50-59	320 (16.5)
60-69	189 (9.7)
>70	118 (6.1)

Table 2 Different types of leprosy in patients (n=1938)

<i>Type of leprosy</i>	<i>%</i>
Tuberculoid	34.6
Borderline tuberculoid	23.3
Midborderline	13.8
Borderline lepromatous	11.8
Lepromatous	16.5

Table 3 Frequency of leprosy in different ethnic groups.

<i>Ethnic origin</i>	<i>%</i>
Indian immigrants	57.7
Sindhi	18.5
Pathan	10.9
Punjabi	6.8
Balochi	2.5
Others	3.6

cases presenting in 2nd to 6th decade i.e. 80% (**Table 1**). Out of 1938 patients, 1058 (54.6%) were male and 880 (45.4%) were females. Over 85% were new cases while 14.4% were contact cases. The commonest type of leprosy was TT in 34.5% followed by LL (16.5%) [**Table 2**]. The majority (57.9%) had paucibacillary disease. The highest percentage of patients in different ethnic groups was seen in migrants (57.7%) and the lowest distribution in Balochis (3%) [**Table 3**]. 241 (12.4%) patients showed some degree of deformity.

In this survey leprosy was found in focal pattern in Hyderabad i.e. a large number of patients was registered from small local areas of city i.e.

Paretabad, Phulleli, Liaquat Colony, Hoosri Camp, Hussainabad, and Hali Road, Indian migrants being the major residents in these areas.

Discussion

Our data suggest that leprosy was predominantly seen in Indian migrants. This is in accordance with a previous study from Karachi.⁹ The different frequencies in different ethnic groups may be due to variation in immunologic responses, genetic differences, undiagnosed reservoir of leprosy patients in the community and the ample opportunity for contacts to get infected. Leprosy is a disease with a strong genetic predisposition of polygenic nature, evidenced by familial clustering, twin studies, complex segregation analyses and HLA association studies.³⁻⁵ However, different non-HLA-linked loci may exist in different populations contributing to disease susceptibility. Leprosy susceptibility locus has been mapped to chromosome 10p13 (South Indian patients families)¹⁰ and chromosome 6q25-26 (Vietnamese patients families).¹¹ Similarly, variants in Parkinson's syndrome gene PAARK2 and coregulated gene PACRG may also act as common risk factors for leprosy.¹¹ It will be interesting to explore the susceptible genes in our study population.

The male to female ratio was almost equal in our study whereas females outnumbered males in other studies.^{9,12} Patients below 10 year were less frequent indicating the long incubation period of the disease. Majority of our patients had paucibacillary (TT or BT) disease. Different studies report different types of the disease to be frequent. In a Canadian study,¹³ the majority of patients had PB leprosy. However, data from other centres e.g. Karachi⁹ and Lahore¹² reported MB leprosy as the dominant type. The deformity

rate was quite high (12.4%) in our patients, though this figure is comparable to previous local reports.^{6,9,12} This reflects the delay in the diagnosis of disease. Although other variables like clinical form, age group, sex and mode of detection are considered to be independent variables for the presence of disease.¹⁴ To obviate the late diagnosis, there is strong need to create awareness among patients, community, medical and paramedical personnel.

Conclusion

Leprosy in Hyderabad is usually of paucibacillary type and it predominantly affects persons of Indian ancestral background.

References

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