

A Retrospective Study of Clinical Profile of New Cases of Leprosy in Patients Visiting Medical College & Hospital, Ahmednagar

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Abstract

Background : Leprosy or Hansen's disease is a chronic infectious disease, considered a major public health problem because of its capacity to cause permanent disabilities, with the social consequences of discrimination and stigma. Leprosy declared eliminated as a public health problem in India in 2006. However, smear-positive leprosy cases are frequently being encountered. **Materials & Methods :** This is a 5-year retrospective analysis done to study the clinical profile of new cases of leprosy in and around Ahmednagar district. **Results :** A data of total 46 new cases registered during said period were analyzed. The male-female ratio was 3.1:1, which comprised 35 males and 11 females. Maximum number of cases belonged to the age group of 21-40 years (45.65%) and 41-60 years (28.26%). Pauci bacillary group of cases were 27 (58.70%), while 19 (41.30%) were multibacillary group of cases. Out of all the 46 cases 5 (10.87%) patients presented with type 2 lepra reactions, 13 (28.26%) cases were presented with deformities and 1 case presented with features suggestive of tenosynovitis. Slit skin smear (SSS) was positive for acid fast bacilli (AFB) in 21 (45.65 %) patients. **Conclusion :** Although India has achieved the WHO goal of leprosy elimination since 2005 and leprosy incidence has declined after MDT, yet new cases continue to present in alarming number. Early detection & proper reporting of new cases is required to reflect the status of leprosy in post eradication era.

Key words: Leprosy, Acid fast bacilli, Hansen's disease.

Introduction : Leprosy is endemic in tropical countries, especially in underdeveloped or developing countries.^[1] The World Health Organization introduced Multiple Drug Therapy (WHO-MDT) in 1982, to reduce the global burden of leprosy by 1994, MDT

implemented worldwide and the overall prevalence of leprosy dropped dramatically.^[2] The National Leprosy Control Programme which launched in 1954 in India was converted to National Leprosy Elimination Programme (NLEP) in 1983 with the objective to eliminate leprosy.^[3]

In 2011, of the total 219,075 new leprosy cases reported globally, 58.1% were detected only in India.^[4] According to WHO weekly epidemiological report 2013 the Southeast Asian region accounts for 71% of new cases detected worldwide. Out of the global total 2,32,857 new patients 1,34,752 have been detected in India in 2012.^[5] Despite having been declared eliminated as a disease of public health importance in India since December 2005, leprosy continues to retain a prevalence rate (PR) higher than 1/10,000 population in parts of the country namely, Dadar and Nagar Haveli (3.61), Chhattisgarh (2.13), Bihar (1.20), Maharashtra (1.09), and West Bengal (1.05).^[6]

We frequently encounter smear-positive cases on a regular basis at our tertiary care institute, situated in a state declared to be eliminated for leprosy, and this prompted us to conduct this study. The objective of this analysis was to study clinical profile of new cases of leprosy, in and around Ahmednagar district.

Materials & Methods : A retrospective analytical study, carried out using institution based data. All new cases of leprosy attended the department of Dermatology, Venereology & Leprosy, Dr. Vikhe Patil Medical College & Hospital (Ahmednagar, Maharashtra, India) during 01st June 2012 to 31st May 2017 period were taken in to the study. Clinical spectrum of the leprosy patients was decided after detailed clinical history, clinical and slit-skin smear examination. Histopathological examination was done where needed. The epidemiological and demographic data of all patients (total 46) were analyzed to study the clinical profile of all new cases of leprosy.

Results : A total of 46 new cases were detected during 5 year of period. The patients were from in and around Ahmednagar districts and migrant from adjoining districts and states.

Among the 46 patients who attended the department, had shown more number of males 35 (76.08%) was affected as compared to females 11 (23.91%) with ratio of 3.1:1 (table 1). The maximum number of patient seen in third & fourth decade 45.65% and the youngest patient was 10 years old and the oldest was 84 years old (Table: 1).

Table 1. Age / Sex Wise Distribution of Cases

Age in years	Number of cases	Male	Female	Percentage (%)
10-20	3	2	1	6.52%
21-40	21	15	6	45.65%
41-60	13	11	2	28.26%
>60	9	7	2	19.56%
Total	46	35	11	100

Majority of the patients were from in and around Ahmednagar district 34 (73.91%) and 8 (17.39%) were from the neighboring districts. The migrants workers from other state mainly Bihar & UP, the state with high endemicity for leprosy since long time accounted for 4 (8.70%) of total cases (Table: 2).

Table 2. Regional Distribution of Cases

Ahmednagar district	34
Marathwada	3
Akola	1
Pune	1
Nashik	1
Dhule	1
Mumbai	1
Migrants from Bihar & UP	4

In our study, 27 (58.70%) were paucibacillary group of cases and 19 (41.30%) were diagnosed as multibacillary group of cases. Borderline Tuberculoid (BT) accounted for the commonest type of leprosy, was seen in 20 (43.48%); the remaining types, in descending order being Mid Borderline (BB) 8(17.39%), Lepromatous Leprosy (LL) 6(13.04%) (Image 1), Borderline Lepromatous (BL) 4(8.69%) cases and Tuberculoid (TT) and Indeterminate leprosy (IL) seen in 3(6.25%) cases each. Single case of Pure neuritic and Histoid leprosy (Image 2) were noted. Lepra reaction, mainly type 2 i.e. erythema nodosum

leprosum (ENL) was a presenting feature in 5 (10.86%) patients (Image 3) (Table: 3).

Table 3. Clinical Spectrum of Leprosy

Type	No. of cases	Percentage (%)
Indeterminate (I)	3	6.52
Tuberculoid (TT)	3	6.52
Borderline Tuberculoid (BT)	20	43.48
Mid Borderline (BB)	8	17.39
Borderline Lepromatous (BL)	4	8.70
Lepromatous (LL)	6	13.04
Pure Neuritic (PN)	1	2.17
Histoid leprosy	1	2.17
Total	46	100

Slit skin smear (SSS) for AFB was positive in 21 (45.65%) cases and maximum bacteriological index was 4+ in 5 patients (Image 4). Skin lesional biopsy for histopathological examination was also done to confirm the diagnosis.



Image 1:
Lepromatous Leprosy

Image 2:
Histoid Leprosy



Image 3:
Necrotic ENL

Image 4:
SSS +ve for AFB

Table 4.
Distribution of Cases According To Deformities

Deformity	Male	Female
Trophic ulcer	2	1
Claw hand	3	0
Ulcers in fingers	1	1
Palatal ulcer	2	0
Leonine facies	1	0
Lagophthalmos	1	0
Foot drop	0	1



Image 5: Palatal Ulcer

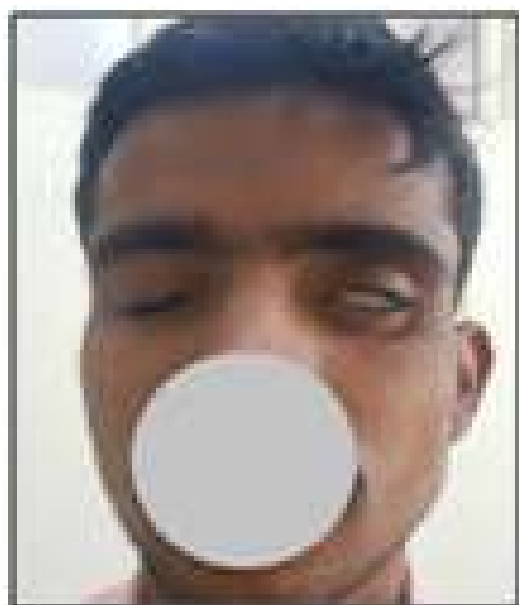


Image 6: Lagophthalmos

Most common deformity observed was Trophic ulcer in 3 and Claw hand in 3 cases followed by ulcers in fingers and Palatal ulcers in 2 cases each (Image 5). One each case of Leonine facies, Foot drop and Lagophthalmos was noted (Image 6). The one patient presented with a feature suggestive of tenosynovitis, only few cases reported in India. The prevalence of deformities was more common in male than female (Table: 4).

Discussion : Leprosy continues to be a challenge to health worldwide, with about 2,50,000 new cases being detected every year.^[7] On 30th January 2006, India announced elimination of leprosy as public health problem at national level under the National Leprosy Eradication Programme (NLEP) and prevalence is 0.73 per 10,000 population as of April 2013.^[8] However, despite the marked reduction in number of leprosy patients registered for treatment, the number of newly detected cases at India level has not shown a comparable decrease.

The present study indicates the high load of undiagnosed cases in community. The incidence was maximum in reproductive age group of 20-40years 21(45.65%). The findings are in consistent with the study conducted by KM Sudhakar Rao et al 2015^[9] and Arora et al 2008^[10] in tertiary care center.

Most of the studies done earlier also showed male preponderance (Jindal N et al 2009^[11] & Norman G et al 2006).^[12] In our study too males 35(76.08%) outnumbering females with ratio of 3.1:1, this could be due to underutilization of the health service by women, (especially in rural area may be due to illiteracy, social customs etc.) increases mobility for men and frequent interaction with community leads to increase opportunity for contacts. Where there is the presence of the frequency of the disease according to gender, it must be analyzed if differences arise because of differences in the sex ratio in the population or whether due to differences in customs factors, biological factors as well as genetic factors.

There are about 58.70% cases belongs to paucibacillary group and most common type was found to be BT Hansen. This is almost similar with a study conducted by KM Sudhakar Rao et al 2015^[9], Singh et al 2009^[13] But study done by Swati Jain et al 2014,^[14] Kumar et al 2004^[15] and Arora et al 2008^[10] reported 57%, 57.5% & 63-69% cases belongs to multibacillary group respectively, this may be due to difference in place of study.

In this study, deformity rate among new cases was 13(28.26%) which is near similar to 20-25% by Norman et al.^[12] Proportion of cases with deformities is more in

males than in females, this is also reported in study done by Arora et al.^[10] The high deformities among men thought to be caused by some hereditary factors associated with sex or differences in environmental factors where more men are smoking cigarettes, drinking, heavy work, dealing with hazardous work.

As the number speaks by itself new cases of leprosy continue emerging in rural India. May be number here do not reflect the original scenario as civil hospital is located 6-7 km away from our institute, many new cases may not be reported to us in this time period.

Conclusion : Although India has achieved the WHO goal of leprosy elimination in 2006 and leprosy incidence has declined after MDT, yet new cases continue to present in alarming number. Early detection and proper reporting of new cases is required to reflect the status of leprosy in post eradication era. The current reality is that we need better referral system and active surveillance for undiagnosed and subclinical cases with single digital platform for storage of data of leprosy patient, which will help in proving the exact prevalence of leprosy in India.

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