



Clinical and Epidemiological Study of Leprosy in A Tertiary Care Hospital of North India.

KEYWORDS

Hansen's disease, Histopathology, Leprosy, Epidemiology

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ABSTRACT Background: Hansen's disease, also known as leprosy, is an infectious disease still prevalent in India. It is a chronic illness with acute immunological phenomena known as leprosy reactions. Objectives: The study aimed to characterize the clinical and epidemiological profile of Hansen's disease patients at the Hospital of Career Institute of Medical Sciences, Lucknow by descriptive, retrospective analysis of 50 patients over the period from 2013 to 2015. Material and Methods: A retrospective analytical study, carried out using health centre based data. All new cases of leprosy registered under the department of dermatology, Career Institute of Medical Sciences, Lucknow during this period were taken in to the study. Records of all leprosy cases who were registered in department of dermatology over a period of three year i.e. Jan 2013 to Dec 2015 were analyzed. Clinical spectrum of the patients was decided after recording detailed clinical history, clinical and slit-skin smear examination. Histopathological examination was done where needed. Data was analyzed using SPSS version 23 statistical software. Chi square test was applied as a test of significance with a significance level of $p \leq 0.05$. Results: Out of the total 50 patient who attended the leprosy clinic under department of dermatology there were 30 (60%) male and 20 (40%) female. Majority of cases 36% belonged to 15-30 years closely followed by 30% in 31-45 year age-group which represent i.e. reproductive active age group. Out of the total 50 cases, majority of patient 31 (62%) belonged to multibacillary group treated with MB MDT while 19 (38%) were paucibacillary treated with PB MDT. Out of 50 new cases 10 (20%) patient suffered from various deformities. Prevalence of type 2 deformity was lower than type 1 deformities. Conclusion: While leprosy incidence has declined after MDT, early detection & proper monitoring of new cases was required to facilitate effective management, disability limitation and rehabilitation.

Introduction:

Leprosy is a chronic infectious disease caused by *M. leprae*. It affects mainly the peripheral nerves. It also affects the skin, muscles, eyes, bones, testes and internal organs.¹ The South East Asian region accounts for about 66.21% of the global prevalence and 71% of all new detected cases at the end of first quarter of 2013.² The National Leprosy Control Programme was launched in 1954 in India and converted to National Leprosy Elimination Programme (NLEP) in 1983 with the objective to eliminate leprosy.¹ With the introduction of MDT (Multi Drug Treatment) since 1983 as recommended by the WHO study group, India has achieved the goal of elimination of leprosy in December 2005.³ A total of 0.92 lakh cases are on record as on 1st April 2013, giving a Prevalence rate (PR) of 0.73 per 10,000 population.⁴

Aims and objectives:

The aim of present study was to find out the trend in presentations of leprosy patients in tertiary health care hospital (Career Institute of medical sciences) from 2013 to 2015, and to interpret this data with respect to different epidemiological variables like age, sex, type of disease, deformity, treatment of diseases.

Material and methods:

A retrospective analytical study, carried out using health centre based data. All new cases of leprosy registered under the department of dermatology, Career Institute of Medical Sciences, Lucknow during this period were taken in to the study. The hospital has record of all the leprosy cases attending the clinic. Records of all leprosy cases who were registered in department of dermatology over a period of three year i.e. Jan 2013 to Dec 2015 were analyzed.

Clinical spectrum of the patients was decided after recording detailed clinical history, clinical and slit-skin smear examination. Histopathological examination was done where needed. All the patients were put on MDT as per standard MDT regimen. The epidemiological and demographic data of all patients (total 50) who attended the leprosy clinic during the last 03 years i.e. from 2013 to 2015 were analyzed to observe the various epidemiological trends. Data was analyzed using SPSS version 23 statistical software. Chi square test was applied as a test of significance with a significance level of $p \leq 0.05$.

Results:

Out of the total 50 patient who attended the leprosy clinic under department of dermatology at Career Institute of Medical Sciences during last 2 years (2013-2015), there were 30 (60%) male and 20 (40%) female. Majority of cases 36% belonged to 15-30 years closely followed by 30% in 31-45 year age-group which represent i.e. reproductive active age group. Out of the total 50 cases, majority of patient 31 (62%) belonged to multibacillary group treated with MB MDT while 19 (38%) were paucibacillary treated with PB MDT. The percentage of MB Leprosy among male and female patient are shown in Table-1.

In leprosy circles, the terms deformity and disability are used synonymously and graded as Grade 0, 1 or 2. Deformity assessment was based on WHO guidelines for assessment and grading for disability in leprosy.¹⁰ Out of 50 new cases 10 (20%) patient suffered from various deformities. Prevalence of type 2 deformity was lower than type 1 deformities. About 12 % had Grade 1 (loss of sensation with no visible deformity) and 8% had Grade 2 deformity (visible deformity). (Table-1) Among the patient with Grade

2 deformities, most common deformity observed was claw hand and planter ulcer followed by ulcers in hands, foot drop and loss of tissue (absorption of toe). Eye involvement was present in two patients.

| Parameters | Male (%) | Female (%) | Total (%) |
|---------------------------|------------|------------|-----------|
| Age group years | | | |
| 1-15 | 01 (50%) | 01 (50%) | 02 (4%) |
| 15-30 | 11 (61%) | 07 (39%) | 18 (36%) |
| 31-45 | 08 (53.3%) | 07 (46.7%) | 15 (30%) |
| 46-60 | 05 (55.5%) | 04 (44.5%) | 09 (18%) |
| >60 | 05 (83.3%) | 01 (16.7%) | 06 (12%) |
| Type of disease | | | |
| Multibacillary | 20 (64.5%) | 11 (35.5%) | 31 (62%) |
| Paucibacillary | 10 (52.6%) | 09 (47.4%) | 19 (38%) |
| Grading of disease | | | |
| Grade 0 | 23 (57.5%) | 17 (42.5%) | 40 (80%) |
| Grade 1 | 03 (50%) | 03 (50%) | 06 (12%) |
| Grade 2 | 03 (75%) | 01 (25%) | 04 (8%) |
| Deformities | | | |
| Hands | | | |
| Type 1 | 02 (66.7%) | 01 (33.3%) | 03 (6%) |
| Type 2 | 02 (100%) | 00 (0%) | 02 (4%) |
| Feet | | | |
| Type 1 | 02 (50%) | 02 (50%) | 04 (8%) |
| Type 2 | 01 (100%) | 00 (0%) | 01 (2%) |
| Eyes | 02 (100%) | 00 (0%) | 02 (4%) |

Table 1: Distribution of leprosy cases according to type/profile/complications

| Grade of Disability | PB (%) | MB (%) | Total (%) |
|---------------------|------------|-------------|-----------|
| Grade 0 | 15 (78.9%) | 25 (80.64%) | 40 (80%) |
| Grade 1 | 03 (15.7%) | 03 (9.6%) | 06 (12%) |
| Grade 2 | 01 (5.2%) | 03 (9.6%) | 04 (8%) |
| Total | 19 (38%) | 31 (62%) | 50 |

Table 2: Distribution of disability amongst PB & MB Leprosy cases

Discussion:

In present study majority of patient were of reproductive age group. Findings are in consonance with study conducted by Arora et al in a tertiary care center.⁶ Peak incidence of disease observed in female in reproductive age group could be related to hormonal imbalance during puberty, pregnancy & puerperium. There are about 62% cases belongs to multibacillary group which is near similar (57.5%) with a study conducted by Kumar et al.⁷ However Arora et al⁶ reported 63-69% cases of multibacillary leprosy which is little higher than our study due to difference in place of study. Sanghavi Mithun M in their study reported that the proportion of MB cases among new cases was increasing from 50.89% in 2000-01 to 88.32% in 2010-11.⁸ Increase proportion of multibacillary cases is important as they represent major source of infection and they are at greater risk of reactions.⁷

In this study, disability rate among new cases was 20%. Various studies have reported disability rate which vary from 7.9% by Casabianca,⁹ to 20-25% by Norman et al.⁵ Current study find 4% grade-2 disability rate which is slightly greater than national average (3.5%) but lower to State average (4.2%). Proportion of cases with disability (both grade 1 and grade 2) is more in males than in females.

Limitations of study:

As it is a single centre study with a relatively small study population, results cannot be generalized to the entire population.

Conclusion:

With the introduction of MDT in India, an impressive decline in leprosy prevalence rate is seen. The rise in the MB cases and preponderance of leprosy patient in children and reproductive age groups denotes the presence of active infection of leprosy in the community and will require much greater intervention to promote early detection of leprosy. The family member of newly diagnosed patient should be screened regularly for leprosy. This would allow earlier institution of therapy and reduce morbidity and deformity.

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