

Dermatology

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TRENDS OF LEPROSY IN A TERTIARY CARE CENTRE IN JHARKHAND



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**ABSTRACT:**

OBJECTIVE: Leprosy is caused by *Mycobacterium leprae* and has been known since biblical times. It is still endemic in many regions of the world and a public health problem in India. Early case detection and prompt treatment have been identified as key strategies for effective control and elimination of leprosy disease. This study is aimed at determining the trends of leprosy in a tertiary care centre in Jharkhand.

METHODOLOGY: Total number of patients over a period of two years from June 2015 to May 2017 clinically diagnosed as Hansen were calculated out of the total number of patients attending outdoor of Department of Dermatology RIMS, Ranchi. Patients were classified on the basis of clinical signs and symptoms and slit skin smear examination was also carried out. Doubtful cases were confirmed by histopathological examination. Age and sex distribution, occurrence of lepra reaction and its type, associated deformities and some rare presentations of the disease were also noted.

CONCLUSION: This article aims to update dermatologist on epidemiological aspects of leprosy in Jharkhand with respect to incidence, sex distribution, age distribution, reactional states and various deformities seen in Leprosy.

INTRODUCTION

Leprosy is a chronic infectious disease caused by *Mycobacterium leprae*. It is contagious in some cases, but its morbidity is low because a large portion of the population is naturally resistant to this disease. Leprosy affects mainly the skin and peripheral nerves. Its diagnosis is established based on skin and neurologic examination of the patient. Early diagnosis is very important. The early and proper implementation of treatment will prevent sequelae and physical disabilities that have an impact on the individual's social and working life, which are also responsible for the stigma and prejudice regarding this disease.

Leprosy is endemic in tropical countries, especially in underdeveloped or developing countries. Its prevalence has decreased markedly since the introduction of MDT in the beginning of the 1980s. The fall in global prevalence with the introduction of MDT led to the WHO campaign to eliminate leprosy as a public health problem by the year 2000, with the assumption that once prevalence fell below the target figure of 1 case per 10^5 , transmission would be interrupted, leading to the gradual extinction of the disease¹. However, 105 endemic countries, specifically located in Southeast Asia, in the Americas, Africa, Eastern Pacific and Western Mediterranean, still concentrate a large number of cases. India was among the last few countries in the world to achieve leprosy elimination in 2005². However wide variations in prevalence rates continue to exist across the regions and provinces in the Country.

The year 2015-16 started with 0.88 lakh leprosy cases on record as on 1st April 2015, with PR 0.69/10,000. Till then 34 States/ UTs had attained the level of leprosy elimination. 551 districts (82.36%) out of total 669 districts also achieved elimination by March 2016³.

A total of 163 high endemic districts (which reported Prevalence rate $>1/10,000$ population in any of the last three years) across 20 states/UTs were identified for conducting Leprosy Case Detection Campaign. During the year 2015-16 also, Special activities with house to house survey was the main strategy along with IEC and capacity building of the workers and volunteers. These activities were carried out in the high endemic blocks of low endemic districts along with the blocks of high endemic districts³.

MATERIALS AND METHODS

This retrospective observational study was conducted in the Department of Dermatology, Venereology & Leprosy, in a tertiary care centre in Jharkhand, over a period of two years from June 2015 to May 2017. In each case detailed history, general physical examination and clinical features of leprosy were noted. All patients had been diagnosed in the same way: first they were checked for the presence of skin and/or nerve lesions consistent with leprosy. Then, slit skin smear examination was performed to demonstrate the presence of acid-fast bacilli. Skin smears were collected from 4 sites including both ear lobes and margins of active lesions, fixed and stained with Ziehl Neelsen stain and examined under microscope. However certain cases where diagnosis was equivocal, further histopathological examination was done to confirm the diagnosis. Subsequently patients were further classified into multi-bacillary (MB) or paucibacillary (PB) patients, using the WHO Classification based on lesion and bacterial count. However we have used clinical system for the purpose of treatment which included the use of number of skin lesions and nerves involved as the basis for grouping leprosy patients into multi-bacillary (MB) and paucibacillary (PB).

Total number of patient attending outdoor of Department of Dermatology, RIMS, Ranchi were 70600 over the period of 2 year from June 2015 to May 2017. The youngest patient to be diagnosed was a 5 year girl and eldest patient was 78 year old male. Patient presenting with Reaction (type 1 or 2), trophic ulcer and presence of any deformity were also noted.

RESULTS

Total number of patient attending outdoor of Department of Dermatology, RIMS, Ranchi were 70600 over the period of 2 years from 1st June 2015 to 31st May 2017 out of which total number of cases diagnosed as Hansens was 1001, out of which 685 (68.40%) were males and 317 (31.60%) were females. Age distribution of study population is given in Table 1. 773 patients were MB type while 227 patients were started on PB type. Lepra Reactions are seen in total 164 (16.493%) cases out of which 43 cases represented type 1 reaction while 121 cases were of type 2 reaction. In type 1 reaction, 32 cases were reversal reaction while 11 cases were of downgrading type. Some of the very rare presentations of type 2 reaction like

Erythema Multiforme like lesions, bullous lesions and Erythema Necroticans are reported.

In the study population it is seen that about 122 cases (12.18%) had deformity either in the form of foot drop, wrist drop, claw hand, resorption of fingers/toes or trophic ulcer, facial and ocular deformities. Most common was trophic ulcer seen in 73 cases followed by claw hand which is seen in 23 cases. 17 cases had foot drop while 9 cases had wrist drop. (Table 2)

TABLE 1 Age distribution in the study population

Age group in years	Total cases in group	% of each group
5 to 9	17	1.7
10 to 19	33	4.3
20 to 29	233	23.3
30 to 39	327	32.7
40 to 49	239	23.9
50 to 59	82	8.1
60 to 69	36	3.6
70 to 79	24	2.4
Total cases	1001	100

TABLE 2 Commonly observed deformities in Hansens diseases

Deformities	No of cases	Percentage
Trophic ulcer	73	7.3
Claw hand	23	2.3
Foot drop	17	1.7
Wrist drop	9	0.9
Eye complications	18	1.8

TABLE 3 Clinical classification of leprosy cases in the study

Classification	No. of cases	% of cases
TT	111	11
BT	258	26
BB	401	40
BL	101	10
LL	129	13
TOTAL	1001	100



Figure 1: Case of Type 2 Reaction showing EM type lesion (A very rare presentation)

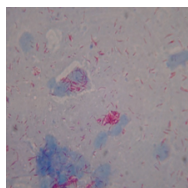


Figure 2: AFB Staining showing Lepra Bacilli



Figure 2: Case of Type 2 Reaction showing bullous lesion

DISCUSSION

Accurate diagnosis and classification is of fundamental importance in leprosy, for correct and timely treatment of cases, epidemiology, management and prevention of disabilities. AFB positivity in SSS as well as histopathological examination of skin lesion is an important

tool in accurate definitive diagnosis and classification of leprosy and still remains the gold standard. The main limitation of the present study was that we could not correlate every clinically diagnosed case with histopathology and so classification is clinical and may be subjective. Statistical analysis could not be done due to this limitation and trends are being reported.

The most commonly encountered type of leprosy in our study (Table 3) was BB (40%), second common type was BL (26%), TT was 11%, BT was 10%, LL comprised 13% of cases. Borderline group constituted the major spectrum (76%), which included BT, BB, and BL and is similar to findings of other workers (Kakkad et al, Shivaswamy et al 2012, Kaur et al 2003 and Sharma et al 2008). However, Kakkad et al reported BT to be the commonest, Kaur et al (2003) observed LL type of the disease to be the most commonest type in their series and Mathur et al 2011 observed TT to be the most common in their series. However all the above mentioned studies have histopathological correlation which is lacking in our study.

The study revealed that more adults than children and more males (68.40%) than females (31.6%) who attended the hospital for treatment were affected by leprosy. Most of the cases seen within the period were multi-bacillary type (MB) of leprosy (73%) and were predominantly new cases rather than retreatment cases.

CONCLUSION

Main aim of our study was to find out the ongoing trends of leprosy in Jharkhand with respect to incidence, sex distribution, age distribution, reactional states and various deformities seen in Leprosy. Most commonly seen type was BB type and as for sex distribution there is a clear male preponderance seen in our study. Prevalence of type 2 reaction among the cases was more than type 1 reaction. Also, in type II reactions, recurrent bullous lesions and ulcerations were frequently seen. Serum taken from these bullae showed solid staining lepra bacilli which is a very rare and infectious condition.

For every confirmed new case thorough counseling of patient as regards to signs of nerve impairment and care of sensory impaired limbs, importance of complete treatment along with physiotherapy is needed. These issues need to be addressed if India has to achieve eradication of leprosy.

Conflicts of Interest

There are no conflicts of interest.

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