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Original Research Article

Leprosy patterns and challenges for a leprosy free India: A retrospective study

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ABSTRACT

Introduction: Leprosy, chronic infectious disease, caused by Mycobacterium leprae, is a major public health concern in India. Though India has achieved elimination of leprosy, in 2005, as per WHO criteria, there has not been a general acceleration of downward trends in the new case detection rate (NCDR). Thus, acquiring knowledge of its epidemiological variations is essential for early new case detection and disease control.

Aims and Objectives: Evaluating current demographic, clinico-epidemiological characteristics of leprosy in a Tertiary Care Hospital, West Bengal, and identifying gaps in rehabilitation counselling and follow up.

Materials and Methods: A retrospective study including 200 patients who have attended Dermatology Outdoor, during Oct, 2022 - Sep 2023.

Result: Out of 200 patients, 112 were new cases and 88 were old, Male and female ratio was 3:2. Majority of cases were between (41-60) years, 10% comprising (10-14) years of age. Multibacillary leprosy contributes almost 60%, the most common type being BT Hansen (56%). Lepra reaction and deformity were seen around 30% &15% respectively. Around 4% of the patients, returned back as a case of relapse. Only 5% were being counselled for physical rehabilitation follow up.

Discussion: It has been seen that the number of newly diagnosed patients, leprosy in younger age population, new cases with grade 2 deformity at the time of diagnosis are not in downgrading phase. On top of that, lack of proper counselling and education for rehabilitation, and relapse of the disease were also worrying. This is the time to act on a community based appropriate strategy to break the chain in transmission of leprosy. Last but not the least, to destigmatize the disease is the need of the hour. Thus, united, we can lead towards Leprosy Free India.

1. Introduction

Leprosy, chronic granulomatous infectious disease caused by Mycobacterium leprae, an acid-fast bacilli, which multiplies slowly and has a long incubation period, on an average, 5-7 years.[1] It mainly affects skin and peripheral nerve, and clinical manifestations of leprosy reflect the response of host immunity against the M. leprae.

The affected patients and also their family members have to suffer social discrimination and stigma.

Leprosy has been associated with the mankind since time immemorial. India being an endemic country for leprosy, is committed to its eradication.

Though, India has achieved elimination of leprosy, in 2005, as per WHO criteria (less than 1 case per 10,000 population at the national level), prevalence rate remained above 1 per 10,000 population in several districts and blocks as well as there has not been a general acceleration of

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downward trends in the new case detection rate (NCDR).[2]

In the year 2021-22, 75,394 new annual cases were recorded, which was 53.6% of global new leprosy cases.[3]

National Leprosy Eradication Program embarked upon developing a new strategy plan in 2022 to accelerate the efforts towards Leprosy control. The National Strategic Plan and Roadmap for Leprosy 2023-27 has been developed by a committee comprising of experts from the field of leprosy.[4] The strategy is aligned with the Global Leprosy Strategy 2021-2030 and the WHO Roadmap for Neglected Tropical Diseases 2021-2030 aiming to achieve interruption of transmission of leprosy by 2030. The strategy focuses on interruption of transmission and achieving zero indigenous cases by accelerating case detection activities in high endemic districts and sustaining a strong surveillance system in low endemic districts.

So, early detection, diagnosis and treatment may prevent damage to the soft tissues and bones of hands, feet, face as well as better rehabilitation to be achieved.

2. Aims and Objectives

Evaluating current demographic, clinico-epidemiological characteristics of leprosy and identifying gaps in rehabilitation counselling and follow up.

3. Materials and Methods

This was a Retrospective Study, done in Dermatology outdoor for the duration of 12 months. Patients, presented to leprosy clinic, were thoroughly examined clinically and necessary investigation (Slit skin smear, skin biopsy) were done when necessary. After inclusion, patients were classified and categorized accordingly (whether Multibacillary or Paucibacillary type) and also according to host immunity (TT, BT, BB, BL, LL). In subsequent visit, they were carefully examined for any signs of reaction (Type 1 and 2) developed or not. Patients presented with deformity (if any) was graded according to WHO Grading System [Table 1][Figure 1 A,B,C,D]

4. Result

The study included 200 patients, out of which 60% (n=120) were male, 40% (n=80) female, with male and female ratio being 3:2. Mean age group of the patients involved was between 41-61 years of age, but 10% (n=20) of the total patients were belonging to the young adult age group (10-14 years) (Table 2).

Most prevalent places in the case of our study, being Murshidabad, 22% of the patients were from that district, followed by Nadia and South 24 Parganas, comprising 20% each.

Multibacillary leprosy cases comprising 60% (n=120) of the total cases (Table 3). Maximum number of cases were of Borderline Tuberculoid, 56% (n =112), Lepromatous leprosy being second most common type, 37% (n=74) (Table 4).

30% (n=60) of the patients presented with reaction, Type 1 being the most common type. 15%(n=30) of the patients presented with deformities, amongst which, ulnar claw hand was the most common type and trophic ulcer was the second most common type of deformities.

But, 10% (n =20) of the patients were being counselled for further follow up and rehabilitation.

Figure 1: A, B, C and **D** shows Leprosy and its sequel.

Table 1: (WHO Grading System)

Grade	Hands and feet	Eyes
0	No loss of sensation, no visible deformity or damage	No eye problem per se, no visual loss
1	Loss of sensation present, but no visible deformity or damage	Eye problem was there, due to leprosy, but vision not severely affected
2	Visible deformity or damage present	Severe visual impairment

Table 2:

Age (years)	Number	Percentage (%)
10-14	20	10
15-40	40	20
41-60	100	50
>60	40	20

Table 3:

Type of Leprosy	Number	Percentage (%)
PB	80	40
MB	120	60

Table 4:

Morphological Classification	Number	Percentage (%)
BT	112	56
	6	3
BL	10	5
LL	74	37

5. Discussion

We have found that the disease was common in males (M:F=3:2), which was similar to the study conducted by Mushtaq et al.[5] But in another study conducted by Tiwary et al have observed an increasing proportion of female cases.[6] The higher male: female ratio in our study could be due to an increased healthcare seeking attitude in them as well as changing social perceptions toward female healthcare. The gender distribution has social implications as women suffering from leprosy have to face higher levels of social isolation and stigma.

In our study, the mean age of presentation was (41-61) years, but other similar studies, like Mushtaq et al, had shown the mean age of presentation in the second and third decades. Approximately, 10% (20/200) of the new cases were children (<18years), which was similar to the study reported by Rao[7] (11.43%) from south indian state of Andhra Pradesh, much higher than study done by Mushtaq et al,[5] Dogra et al[8] (4.8%) from Punjab in north India. The involvement of children signifies the fact that leprosy continues to affect children and the chain of transmission is still ongoing.

Borderline tuberculoid leprosy was the most common morphologic type (56%) encountered in our study, which was similar to the study made by Mushtaq et al,[5] Rehlan et al,[5] Chhabra et al,[5] Nair et al,[9] Sasidharanpillai et al,[10] and Tiwary et al.[6] 37% cases were of lepromatous leprosy, which was similar to the study of Mushtaq et al, where 32% cases were of lepromatous type.[3] An increase in lepromatous leprosy is a worrying sign as the relative risk of leprosy in household contacts of lepromatous patients is 8-10 folds as opposed to 2-4 folds in tuberculoid leprosy.[11]

The increasing trend of lepromatous, multibacillary cases is a matter of serious concern. In our study, we have observed 60% of cases were of multibacillary, which was much lower than the similar studies like Mushtaq et al (84.4%).[5]

Our study showed incidence of WHO grade 2 disability at presentation up to 15%, which was slightly higher than reported by Shetty et al (12%).[12] But much lesser than those reported by Mushtaq et al[5] (20.1%), Rehlan et al[13] (19.03%), Jindal et al[14] (17.8%), Chhabra et al[15] (37.9%). This may indicate a lack of awareness of early signs, symptoms of the disease leading to delays in diagnosis and treatment, as well as fear of being socially outcasted may further hinder them to seek healthcare facilities.

In the present study, the major epidemiological indicators, like, grade 2 disability, lepromatous leprosy, multibacillary leprosy, childhood leprosy, as well as lack of knowledge regarding rehabilitation show an increase over the past. The result of this study as well as other similar studies thus indicate that there is a gap between the major program indicators of NLEP, WHO and the actual scenario.[16]

6. Conclusion

The results of this retrospective study of leprosy showed an increasing trend of cases with grade 2 disability, lepromatous and multibacillary cases,which signify delays in diagnosis and treatment. The increased cases of childhood leprosy is an indicator of ongoing transmission of the disease in the community and active case detection as well as contact examination are the need of the hour. A significant number of patients with lack of awareness regarding further follow up and rehabilitation emphasises stringent, focused and more community based approach to take on this ancient scourge and make India a Leprosy Free country in true sense.

7. Limitations

Sample size being less as well as duration of the study was short.

8. Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their identity will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

9. Source of Funding

None.

10. Conflicts of Interest

There are no conflicts of interest.

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