

Changing Profile of Leprosy in a Tertiary Care Hospital

SB Shrivastava¹, Preksha Singh², Vivek Sagar³

^{1,2,3}Dr Baba Saheb Ambedkar Medical College & Hospital, Govt. of NCTD, Rohini, Delhi.

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Abstract

WHO (World Health Organization) has fixed the target of zero grade 2 (G2D) deformity among pediatric leprosy patients and reduction of new leprosy cases with G2D to less than one case per million population, to be achieved by 2020. It has also mentioned the performing indicators to evaluate the progress of leprosy control program. We undertook this study to find out what changes the leprosy clinic at our hospital had witnessed in terms of the WHO performance indicators and whether we had progressed toward reaching the goal fixed by WHO. The important indicators such as number of new cases, percentage of MB cases, child cases, and G2D cases were examined from the year 2012-13 to 2016-17. Although a significant reduction in G2D cases, MB cases and child cases were noted, which is quite encouraging, yet the numbers of annual new cases detected remained almost static during the study period, indicating persistence of active transmission of infection and the need for augmented active surveillance (leprosy case detection campaign), contact tracing, community awareness, stigma reduction and training.

Keywords: Leprosy, Grade 2 deformity, Childhood leprosy

Introduction

In 2016, WHO launched the “Global Leprosy Strategy 2016–2020: Accelerating towards a leprosy free world”.¹ This document fixed the targets to be achieved by 2020 and also identified the performance indicators for routine program monitoring (Table 1). Out of these performance indicators, we have identified the key indicators, which are applicable to the hospital to assess the changes in the clinical profile of leprosy along these lines. These key

performance indicators are: number of new cases, types of cases, female cases, child cases, grade 2 (G2D) deformity cases and reaction cases. The aim of this study was to find out what changes the leprosy clinic at our hospital had witnessed in terms of the WHO performance indicators and whether we had progressed toward reaching the goal fixed by WHO. The study period was five years, extending from 2012-13 to 2016-17, which coincided with the 12th plan for national leprosy elimination program (NLEP: 2012-13 to 2016-17).²

Table 1. WHO Main Targets (to be achieved by 2020)

1. Zero G2D among pediatric leprosy patients
2. Reduction of new leprosy cases with G2D to less than one case per million population
3. Zero countries with legislation allowing discrimination on basis of leprosy

Corresponding Author: Dr. Preksha Singh, Dr Baba Saheb Ambedkar Medical College & Hospital, Govt. of NCTD, Rohini, Delhi.

E-mail Id: prernasingh.singh928@gmail.com

Orcid Id: <https://orcid.org/0000-0001-7945-5523>

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Materials and Methods

It was a study undertaken at the leprosy clinic of Dr Baba Saheb Ambedkar Medical College and Hospital, a major urban hospital in Delhi, wherein all new cases of leprosy who attended the hospital from April 2012 to March 2017, were diagnosed, classified and managed as per the WHO classification. All the important parameters, namely, age, sex, types of leprosy, residence, reactions, deformity, etc., were recorded as per the NLEP protocol. This was a clinical study based on WHO classification. Histopathological and bacteriological studies were done only in doubtful cases. Only the new cases, which were followed throughout the entire period of their treatment, were included. Old cases and defaulters were not included in this study. Grade 2 disability included shortening, ulceration, loss or disorganization or stiffness, of part or whole digits, redness in eyes, inability to close eyes and significant visual impairment.³

Treatment was given according to the WHO recommendation. The findings were compared with Delhi state and National averages.

Results

A total of 617 new leprosy cases were registered in the past 5 years from 2012-13 to 2016-17. The year-wise distribution and the clinical profile of the cases are shown in Table 2. The percentage of MB cases, female cases, child cases and deformity cases recorded in the year 2012-13 and 2016-17 for hospital, Delhi state and Nationwide are depicted in Table 3 for comparison.

Table 2. Clinical Profile of New Cases Registered during the Study Period (2012-13 to 2016-17)

Year	Total New Cases	Total MB Cases (with%)	Total PB Cases (with%)	Total Female Cases (with%)	Total Child Cases (with%)	Total Reactions Cases (with%)	Total G2D Cases (with%)
2012-13	104	91 (87.5)	13 (12.5)	38 (36.5)	05 (4.81)	28 (26.92)	27 (25.96)
2013-14	130	127 (97.69)	3 (2.31)	36 (27.69)	07 (5.38)	34 (26.15)	12 (9.23)
2014-15	114	97 (85.09)	17 (14.91)	38 (33.33)	06 (5.26)	24 (21.05)	14 (12.28)
2015-16	141	113 (80.14)	28 (19.86)	25 (17.73)	05 (3.55)	16 (11.35)	16 (11.35)
2016-17	128	94 (73.44)	34 (26.56)	33 (25.78)	05(3.91)	4 (3.13)	7 (7.45)

Table 3. Comparison of Key Performance Indicators among Hospital, Delhi and National Data

Key Indicators	Hospital Data (%)		Delhi Data (%)		National Data (%)	
	2012-13	2016-17	2012-13	2016-17	2012-13	2016-17
MB cases	87.5	73.44	69.97	79.58	49.92	49.57
Female cases	36.5	25.78	23.72	26.38	37.72	39.17
Child cases	4.81	3.91	6.79	3.97	9.93	8.7
Grade 2 disability cases	25.96	7.45	10.14	14.07	3.45	3.87

Discussion

Although the number of cases as determined by prevalence rate has drastically gone down, the active transmission of infection has remained unchanged, as revealed by a steady level of annual new case detection rate in the nation.⁴ The new cases detected in this study during the last 5 years (from 2012-13 to 2016-17) also remained more or less same and this is in agreement with the total national picture. Thus, continuous occurrence of new cases in the population is a cause for worry. To reduce annual new case detection rate, the NLEP has recently launched an active house-to-house survey in the form of Leprosy Case Detection Campaign, Contact Tracing, Stigma Reduction and augmented Community Awareness Programs, which is a welcome step.

In this study and in Delhi, MB cases greatly outnumbered PB cases; however, MB cases were almost equal to PB cases nationwide. The reason for the greater contribution of MB cases could be due to Delhi, being the national capital with many tertiary care hospitals, caters to additional load of advanced and complicated cases coming from neighboring states including from highly endemic pockets leading to increase in MB cases. Other studies have also noted increased percentage of MB cases compared to PB.⁵⁻⁸ During the study period, MB cases decreased in the hospital while they increased in Delhi, and remained almost static nationwide. MB cases are considered more infectious and more responsible for disease transmission; hence decrease in the number of MB cases is an important performance indicator in leprosy control program. In this regard, the hospital had witnessed significant decrease in

the MB cases from 87.32% in 2012-13 to 66.67% in 2016-17. Early detection of cases because of availability of expertise in the hospital could well be the reason behind decrease in the percentage of MB cases in the hospital as compared to the overall picture in Delhi.

In hospital data, Delhi data and nationwide data, female cases were far less as compared to male cases, which is consistent with observations in previous studies.^{9,10} This could be due to the lack of perspective towards female healthcare in India. The reason for even lesser contribution of female cases, however, in this study and Delhi could also be due to the increased proportion of immigrant population coming to Delhi in search of employment, and this mainly comprised of males.

The percentage of child cases in our study is low (3.91% in 2016-17) and recorded low throughout the study in comparison to the state of Delhi and national data (Table 3). Earlier studies from Delhi reported high percentage of child cases, 9.6% by Singhal et al. in 2011¹¹ and 10.2% by Tiwary et al. in 2011.¹² Delhi had recorded a significant reduction in child percentage cases in comparison to the national figure, which points to an effective implementation of the NLEP program. The other factor for low percentage of child cases could be the immigrant male patients coming to Delhi without children for work.

Initially, G2D disability cases were quite high (25.96% in 2012-13) in this study, similar to the one observed in the study by Jindal et al.¹³ Later on, these cases fell down remarkably (5.46% in 2016-17), in contrast to remarkable rise in Delhi (14.07% in 2016-17). This appears to be due to the hospital being managed by leprologists, who are able to diagnose the disease in early stage. These early cases are probably being missed by non-leprologist medical officers and healthcare workers working at primary and secondary healthcare centers. This observation also indicates the need for strengthening the leprosy training program. The prevalence of G2D deformity is one of the most widely used epidemiological indicators to measure the progress of the national leprosy eradication program as it is visible and can be reliably measured.

Conclusion

Although the annual new cases detected during the study period remained more or less the same, the performance on other indicators has shown significant improvement. The WHO target of new leprosy cases with G2D to less than one patient per million is not applicable to the hospital as hospital does not have its own population. It receives patients from all around Delhi. However, the NLEP 12th plans (2012-13 to 2016-17) target of 35% reduction in G2D had been achieved by the hospital, as the hospital rate of G2D deformity had come down by more than 35% from 25.96% in 2012-13 to 7.45% in 2016-17. As regards the other important WHO target of zero percent child

cases with G2D deformity, the hospital did not find any child with G2D deformity during the entire study period. The significant reduction in G2D cases, MB cases and child cases is very encouraging data, but new case detection remained almost static during the study period, indicating persistence of active transmission of infection and the need for augmented active surveillance (leprosy case detection campaign), contact tracing, community awareness, stigma reduction and training.

Conflict of Interest: None

References

1. Global Leprosy Strategy 2016-2020: Accelerating towards a leprosy-free world. WHO SEARO/Department of Control of Neglected Tropical Diseases, New Delhi. 2016.
2. NLEP. Programme Implementation Plan (PIP) for 12th Plan Period (2012-13 to 2016-17). Can be accessed at <http://nlep.nic.in/pdf/Final%20PIP,on%203%20May%202013.pdf>
3. WHO Expert Committee on Leprosy (1988). World Health Organization technical report series. 1988; 768: 1-51.
4. Sengupta U. Elimination of leprosy in India: An analysis. *Indian J Dermatol Venereol Leprol.* 2018; 84: 131-36.
5. Mohite RV, Durgawale PM. Evaluation of national leprosy eradication programme in Satara District, Maharashtra. *Indian J Lepr.* 2011; 83: 139-43.
6. Chhabra N, Grover C, Singal A et al. Leprosy scenario at a tertiary level hospital in Delhi: A 5-year retrospective study. *Indian J Dermatol.* 2015; 60: 55-59.
7. Rodrigues Junior IA, Gresta LT et al. Leprosy classification methods: a comparative study in a referral center in Brazil. *Int J Infect Dis.* 2016; 45: 118-22.
8. Relhan V, Ghunawat S, Tenani A et al. Trends in profile of leprosy cases reporting to a tertiary care centre in Delhi during 2006-2015. *Indian J Lepr.* 2016; 88: 217-25.
9. Bhattacharya SN, Sehgal VN. Leprosy in India. *Clinics in Dermatol.* 1999; 17:159-70.
10. Dambalkar K, Vashist RP, Ramesh V. Problems due to migration of leprosy patients into urban areas. *Lepr Rev*1995; 66: 326-28.
11. Singal A, Sonthalia S, Pandhi D. Childhood leprosy in a tertiary-care hospital in Delhi, India: a reappraisal in the post-elimination era. *Lepr Rev.* 2011; 82: 259-69.
12. Tiwary PK, Kar HK, Sharma PK et al. Epidemiological trends of leprosy in an urban leprosy centre of Delhi: A retrospective study of 16 years. *Indian J Lepr.* 2011; 83: 201-08.
13. Jindal N, Shanker V, Tegta GR et al. Clinico-epidemiological trends of leprosy in Himachal Pradesh: A five year study. *Indian J Lepr.* 2009; 81: 173-79.

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