



TREND ANALYSIS OF LEPROSY CASES AT A PRIMARY HEALTH CENTRE IN THANE DISTRICT OF MAHARASHTRA

Dr Chinmay N Gokhale

Assistant Professor, Dept of Community Medicine, HBTMC & Dr R.N. Cooper Hospital, Juhu, Mumbai, Maharashtra.

Dr Chaitali A Borgaonkar*

Assistant Professor, Dept of Community Medicine, HBTMC & Dr R.N. Cooper Hospital, Juhu, Mumbai, Maharashtra. *Corresponding Author

Dr Mridula J Solanki

Associate Professor, Dept of Community Medicine, Seth GSMC & KEM Hospital, Parel, Mumbai, Maharashtra.

Dr Sunita S Shanbhag

Consultant, Milk Bank, LTMHC & LTMG Hospital, Sion, Mumbai, Maharashtra.

ABSTRACT

Introduction: India reports more than 60% of leprosy cases. The state of Maharashtra reported more than 15000 new cases in the year 2015-16. These figures show that we are miles away from the ultimate goal of leprosy eradication. This study was planned to analyse trends of Leprosy in a PHC located in Thane district of Maharashtra.

Objectives:

- 1) To analyze the trends of leprosy cases in study area.
- 2) To give recommendations on the basis of study data.

Results: The number of new cases reported fluctuates over the five year period. But the %MB cases have remained high and fairly constant which are comparable to national and state average. The % of children among Leprosy patients is on a rise with every 3rd patient being a child in last year of this Trend Analysis.

The Prevalence Rate was 3.6/10000 in 2012 which went up in subsequent year and settled down at 4.4 for years 2015 and 2016. The ANCDR on other hand also went up in 2013 and has shown a gradual decline between years 2014 – 2016.

Conclusion: This 5 year short term study shows that though it was difficult to absolutely conclude a rising or a decreasing trend, however, the Prevalence rate of leprosy cases in study area remained constant and the ANCDR showed a decline over most of study period.

KEYWORDS : Leprosy Trends, ANCDR, PR/10000

Introduction:

India as a country has reported the most cases of leprosy consistently over past 5 years. As per WHO reports, the case load of leprosy in India for the year 2015 was 127326 which are close to 60% of cases reported globally that year. (1)

As per the NLEP reports of 2015-16, the state of Maharashtra reported detection of more than 15000 new cases off which more than 10000 leprosy cases were still on treatment by the end of that period. (2)

The above figures show that though our country was declared "leprosy-free" in year 2006, still a lot needs to be done to achieve the dream of complete Leprosy Eradication.

This study was planned to analyze the leprosy figures reported by a Primary Health Centre located in Thane district of Maharashtra state.

Objectives:

- 1) To analyze the trends of leprosy cases in study area.
- 2) To give recommendations on the basis of study data.

Methodology:

This study was conducted in PHC, Padgha area located in Thane district of Maharashtra state. The study included data related to leprosy cases reported under the National Leprosy Eradication Programme by the PHC for 5 year period of 2012-2016.

After obtaining prior permissions from Medical Officer of PHC, the data was procured from the various registers concerned with Leprosy case reporting. Also the mid-year population figures were noted as per the PHC records. Data was entered and analysed using Microsoft Excel Spreadsheet.

The proposed study outcomes were 5-year trends of new cases,

trends of Annual New Case Detection Rate (ANCDR), % of multibacillary cases, % of cases among males, females and children, etc.

Results and Discussion:

The records of Leprosy patients are maintained in a monthly format separately for Multibacillary and Paucibacillary cases. The record headings include new cases, Released From Therapy (RFT), carry over cases from previous month and grand total cases for the month. Further, the cases are classified as Adults or children and also as Male and Female.

Table 1 shows the detailed statistics regarding leprosy case at the PHC under study. The percentage of Multibacillary cases has consistently remained over 50% except for the year of 2013. This shows that more than half of new cases have had the severe form of Leprosy with delay in diagnosis. These rates are quite similar to MB% rates of Maharashtra (53.76%) and India (51.27%) as shown in NLEP report of 2015-16. (2)

The percentage of children amongst those suffering from Leprosy has increased almost gradually from 17.6% in 2012 to 33.3% in 2016. This means that in 2012, every 6th leprosy patient from the study area was a child but now every 3rd patient of leprosy is a child. These figures are much higher than Maharashtra's state figure of 11%. (2) On one hand more number of children being diagnosed of Leprosy shows that the case detection system is functioning properly but on the other hand these figures are alarming as Leprosy in children means deformities can set-in earlier in life and also more life period available for the disease to recur in future.

The percentage of female patients has ranged between 28% - 45% but for the year 2016 (value 28.6%) it is much lower than the state average of 44%. (2)

Table 1: Number of detected New Cases and their characteristics

Year		New Cases			MB Cases %	Children (%)	Female (%)	Male (%)
		PB	MB	Total				
2012	Jan-Jun	9	12	34	18 (52.9%)	6 (17.6%)	14 (41.2%)	14 (41.2%)
	Jul-Dec	7	6					
2013	Jan-Jun	11	13	59	24 (40.7%)	14 (23.7%)	19 (32.2%)	26 (44.1%)
	Jul-Dec	24	11					
2014	Jan-Jun	10	13	45	26 (57.8%)	9 (20%)	16 (35.6%)	20 (44.4%)
	Jul-Dec	9	13					
2015	Jan-Jun	10	9	44	23 (52.3%)	11 (25%)	20 (45.5%)	13 (29.5%)
	Jul-Dec	11	14					
2016	Jan-Jun	2	11	42	22 (52.4%)	14 (33.3%)	12 (28.6%)	16 (38.1%)
	Jul-Dec	18	11					

PB= Paucibacillary, MB= Multibacillary

Table 2 and Figure 1 show trends of Prevalence Rate (per 10,000 population) and Annual New Case Detection Rate (per 1,00,000 population). It can be seen that the Prevalence has been much higher than the national target of < 1/10000. Also, the lowest Prevalence is seen in the year of 2012 which has risen up to 5.7 in 2013 and settled at 4.4 for 2015 and 2016.

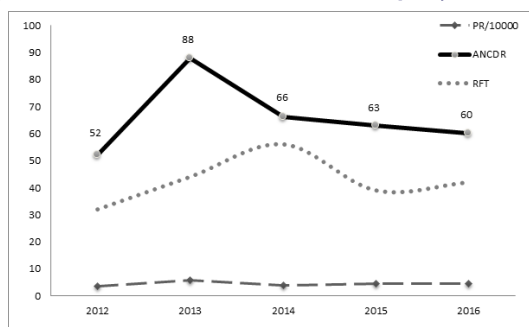
Table 2: Prevalence Rate and ANCDR of leprosy cases for study area

Year	Population	Total Cases	PR per 10,000 population	Released from Therapy	No of New Cases	ANCDR per 1,00,000 population
2011	-	22	-	-	-	-
2012	65,621	24	3.66	32	34	52
2013	67,370	39	5.79	44	59	88
2014	68,417	26	3.8	56	45	66
2015	69,568	31	4.46	39	44	63
2016	70,106	31	4.42	42	42	60

PR = Prevalence Rate, ANCDR = Annual New Case Detection Rate (PR includes cases as on 31st December of the respective year)

The ANCDR also shows a rise in 2012-2013 but it shows a dip in 2013-2014 and is further decreasing gradually from 66 in 2014 to 63 in 2015 and 60 in the year 2016. The Prevalence Rate for Maharashtra was 0.83/10,000 and ANCDR was 13.77/1,00,000 for the year 2015-16. Clearly, both the prevalence and incidence of leprosy cases is much higher in the study area when compared to the state average.

Figure 1: Secular Trends of PR and ANCDR of leprosy cases



In figure 1 the line showing RFT (Release From Treatment) cases shows a peak in 2014 which corresponds to sudden drop in Prevalence rate in that year (5.76 to 3.8).

In a study done in the neighbouring district of Raigad, it was found that MB% was high and percentage of children amongst leprosy patients was about 20%. (3) In the current study the percentage of children has been reported as 33.3% which is much higher than the previous comparable study.

The present study considers data for only 5 years whereas

traditionally Leprosy trends have been analysed over a long duration. However, an article from Meima A et al mentions about Publication bias in Leprosy where only long time studies are published and short duration studies fail to show success (decreasing trends). (4) This study does show a decreasing trend of ANCDR but the prevalence rate is found to be high and fairly constant over past few years.

Conclusions and Recommendations:

This study shows that prevalence of Leprosy is high in Padgha-PHC area. The Annual New Case Detection Rate has shown a decline in recent years but that too is much higher than state and national averages. Also, the proportion of Multibacillary cases and that of children suffering from leprosy is also high in this area.

On the basis of these study findings, we can recommend that intensive efforts are needed in this area to control Leprosy. Further long term studies with primary data must be done to understand the qualitative variables influencing occurrence of Leprosy in this area.

This 5 year short term study shows that it was difficult to absolutely conclude a rising or a decreasing trend, however, the Prevalence rate of leprosy cases in study area remained constant and the ANCDR showed a decline over most of study period.

Limitations: As it was a record based study, patient characteristics and socio-demographic determinants could not be evaluated.

Acknowledgement: We would like to thank Mr Jadhav, Leprosy technician, Padgha-PHC; Medical officer and other staff of Padgha-PHC and Dr Sayali Tiwari, KEM Hospital, Mumbai for their contribution to this study.

Conflict Of Interest: None

Funding: None

How to Cite this Article: Trend Analysis of Leprosy Cases at a Primary Health Centre in Thane District of Maharashtra. Chinmay NG, Borgaonkar CA, Solanki MJ, Shanbhag SS.

REFERENCES

1. India's massive case detection campaign reaches 320 million people. World Health Organization. Accessed on 29-12-2017 and available at http://www.who.int/neglecteddiseases/news/India_massiveleprosydetection_campaign_reaches320mill/en/
2. NLEP Annual Report 2015-16. NIEP, Central Leprosy Division, DGHS, MOHFW, GOI. Accessed on 29-12-2017 and available at nlep.nic.in/pdf/revise%20annual%20report%2031st%20March%202015-16.pdf.
3. Trends and Spatial Clustering of Leprosy cases over a decade in hyper-endemic area of western Maharashtra, India. Kuruwa S., Joshua V., Shetty V. & Mistry N. Leprosy review Sept 2016, 87(3), page 294-304.
4. Meima A, Gupte Mohan, J van Oortmarssen G & Habbema J.D.F. Trends in Leprosy Case Detection Rates 1997. International journal of leprosy and other mycobacterial diseases: official organ of the International Leprosy Association. Vol 65, Page 305-19.