

Changing Trends of Leprosy in Post Elimination Era - A Study from an Endemic Area

R Murugaiyan¹, G Saravanan² and K Karthikeyan³

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A decade has passed since leprosy was eliminated as the public health problem in India. But we have observed an increasing trend of new cases of leprosy more during the past five years. Hence we carried out a study in our Department of Dermatology, Venereology and Leprology where we retrospectively analyzed the data between 2005 and 2015 from our leprosy clinic register to study the spectrum and changing trend of leprosy. In our study out of 292 patients of leprosy we noted an increase in number of Lepromatous leprosy cases, new cases of Histoid Hansen & pure neuritic Hansen after the year 2010. Also there was an increase in incidence of childhood leprosy noted after the year 2010 indicating the requirement of a concerted effort from both the physicians and the National Leprosy Eradication Programme for active surveillance and early detection of new cases. While this data can not be extrapolated to situation in the community but should be considered important for action at community level to increase awareness and strengthening of health care systems.

Key words : Leprosy, post elimination era, Tamil Nadu, Pondicherry, South India

Introduction

More than a decade has passed since leprosy was eliminated as the public health problem at the National level in India. However, India still continues to top the table globally as far as detection of new cases of leprosy is considered (WHO Global Leprosy update 2013, WHO Global Leprosy update 2014). With the introduction of Multi Drug Therapy (MDT) though the prevalence of leprosy had come down drastically to a point when it was considered to have been eliminated as a public health problem (<1/10,000), some

districts continued to have a higher prevalence of the disease as compared to the national Average. By the end of 2010 almost 110 of 630 total districts in India had a prevalence rate between 1 & 2/10000 (Noordeen 2015). The most recent studies/reports also indicate that Leprosy is still not eliminated in all districts. Active surveillance and active cases finding is still needed to detect the undiagnosed cases (Palit and Inamdar 2014). We conducted this study to analyze the spectrum and changing trends in our area attending OPD of our college hospital which is a tertiary care

¹ Rangaraj Murugaiyan, MD, Associate Professor

² Gowtham Saravanan, Post graduate MD student

³ Kaliaperumal Karthikeyan, MD Professor

Department of Dermatology, Venereology and Leprology, Sri Manakula Vinayagar Medical College & Hospital, Pondicherry, India

Correspondence : Dr Rangaraj Murugaiyan e-mail : rangaraj06@gmail.com

hospital, located in the border of Tamil Nadu and Pondicherry.

Patients and Methods

The study was conducted in the Department of Dermatology, Venereology and Leprosy of our college after approval from Hospital Ethics Committee.

We have retrospectively analyzed the data between 2005 and 2015 from our leprosy clinic register. The leprosy register included details of their demographic profile, occupation, a detailed clinical history, physical examination findings, diagnosis, slit skin smear report and skin biopsy or nerve biopsy reports. All these data was collected from this register.

Results

A total of 292 new cases of Leprosy were diagnosed between 2005 and 2015 in our hospital. The diagnosis was based on the clinical and histopathological findings. All the cases during this period were included in the study.

The clinical details, distribution as well as the statistics have been described in Tables 1 and 2.

We observed a male preponderance of 2.65: 1 with 212 males and 80 females. The mean age of

the patients was 33.6 yrs for (males - 36.8 yrs & females - 30.4). The patients were from adjoining districts of Tamil Nadu in and around Pondicherry. Most of the patients were agricultural workers.

In the era of elimination, the number of multi-bacillary cases is still very high when compared to paucibacillary cases, with majority of new cases in borderline spectrum. Also there was a change in pattern of the clinical presentation of leprosy after 2010. There was a gradual fall in Tuberculoid spectrum and rise in Lepromatous spectrum of

Table 2 : Percentage of patients with grade II deformity

Year	Grade II deformity (male, female)	Percentage in a year
2005-06	6 (4,2)	25%
2006-07	2 (2,0)	8.33%
2007-08	3 (2,1)	12.5%
2008-09	2 (2,0)	8.33%
2009-10	2 (1,1)	8.33%
2010-11	1 (1,0)	4.16%
2011-12	1 (1,0)	4.16%
2012-13	2 (2,0)	8.33%
2013-14	1 (1,0)	4.16%
2014-15	4 (3,1)	16.66%

Table 1 : Spectrum of leprosy cases reporting to OPD during 2005-15

YEAR	TT	BT	BB	BL	LL	HISTOID	PNL	INDETERMINATE	TOTAL
2005-06	3	35	0	2	2	0	0	0	42
2006-07	0	22	0	0	3	0	0	1	26
2007-08	2	31	0	4	2	0	1	0	40
2008-09	0	21	0	2	1	0	0	0	24
2009-10	0	13	0	2	1	0	0	1	17
2010-11	1	8	1	4	2	0	0	0	16
2011-12	0	5	0	6	3	1	1	1	16
2012-13	0	14	0	1	2	0	2	2	21
2013-14	4	21	1	7	2	1	1	1	38
2014-15	0	26	1	14	5	2	2	1	52
TOTAL	10	196	3	42	23	4	7	7	292

the disease from 2010 -2015. But the number of cases with grade II deformity showed a downward trend after 2010.

Among them seven were children (2.4%) and all of them had Indeterminate leprosy, and all of them were in boys. Histoid leprosy was observed in 4 patients and pure neuritic leprosy was observed in 7 patients.

Discussion

Leprosy is a chronic, mildly infectious mycobacterial disease, still not fully understood, organism not culturable in any artificial medium and evokes varied immunological responses in small population of susceptible patients. These unique characters of the disease make its eradication difficult by the conventional methods. In several infectious diseases eradication have been achieved, by the effective use of suitable vaccines. In case of leprosy due to the inherent character of the organism and response of the host such as prolonged incubation period, and subtle clinical features make case detection by a primary care physician, difficult.

The WHO in its update on leprosy in 2014 observed that 72% cases of leprosy are seen in South East Asia, of which 82% new cases are from India and 4-15% of patients were having grade 2 deformity suggesting low awareness among public and need for a better health system for early detection of the disease (WHO Global Leprosy update 2013, WHO Global Leprosy update 2014).

One of the strategies adopted to minimize the leprosy burden has been to reduce the Annual New Case Detection Rate (ANCDR) to <10/100000. The ANCDR of India as a whole has reduced by only 0.42% between 2007 and 2012 (Noordeen 2015), which is much less when compared to other endemic areas. As of March 2014 the new case detection rate in India was 0.99/10,000 (WHO Global Leprosy update 2014).

A retrospective study (Mehta et al 2009) was done on the number of new cases of leprosy detected, before the National target of Elimination of Leprosy (prevalence, 1/100,000) was achieved in the pre-elimination phase (2004-05) of NLEP and in this study comparison was done with the number of new cases detected in the post elimination year (2006-07) which showed an increased number of cases being detected in the post elimination NLEP phase.

Another study was done in a tertiary hospital in Delhi (Singal and Sonthalia 2013), on the number and type of leprosy cases visiting their hospital revealed an increasing trend of more multi bacillary (MB) leprosy cases attending their hospital over the past decade. Many of these cases were reporting with grade 2 deformities and a big number of childhood leprosy cases were also seen, which indicated ongoing transmission (Singal and Sonthalia 2013). This high incidence of multibacillary leprosy poses a challenge to the leprosy elimination program. They not only serve as a reservoir but also actively transmit the disease. Further detection of Histoid leprosy cases requires expertise and the bacillary load being very high in these patient they become a potential reservoir of infection in the community (Palit and Inamdar 2007). Moreover, the presence of both household and open contacts can lead to high incidence of childhood cases (Palit and Inamdar 2014).

In our study we found an interesting trend. The multibacillary cases contributed to about 25% of the newly diagnosed leprosy patients. This trend has been observed in this part of the country in a study conducted a decade ago (Thappa et al 2001).

All our patients came from the neighbouring districts of Tamil Nadu, namely Villupuram district. This area was previously a hyper endemic area of leprosy and housed many leprosy mission

hospitals. Few of these hospitals are functional even now. But they are not involved in field activities and primarily treat old treated patients and referred patients.

It is possible that leprosy patients from this endemic area particularly multibacillary cases may need individualized care and attention so that defaulting may be avoided.

In this context, it is probably appropriate to see the changes in the previous study from the same area with our study. This provides an overview of the scenario in the past 15 years. The increasing trend of detection of more new cases in the endemic area is probably due to various factors enumerated. There is also need for continuity of community level surveillance of leprosy cases, lack of prompt referral services from primary health care system to the tertiary centres and lack of adequate expertise at district level hospitals.

All these are probably leading to delay in diagnosis and treatment of leprosy.

There is thus need to intensify the strategy for case detection in endemic areas where more patients with leprosy are diagnosed, individualised care to leprosy patients particularly multibacillary cases and periodic education programs for primary health care medical officers, other health care workers and community in endemic areas about leprosy.

Challenges at various levels need to be identified and programme should be strengthened by addressing these issues. For example at PHC level the diagnosis of multibacillary cases at the primary health centre may be many a times missed given the presentation. This may be due to lack of adequate expertise on the part of PHC physicians in diagnosing multibacillary leprosy and inability to manage complications. Increase in grade 2 deformities during 2014-15 in this study should be considered as a warning sign and should be given due attention at community level.

Lack of manpower to counsel and follow up patients also has to be addressed.

At the level of district hospital only complicated cases are referred and treated and many patients cannot be followed up. There may be no separate OPD for leprosy patients, in most hospitals it is merged with dermatology OPD and finally supportive staffs trained in leprosy may be lacking. Similarly at medical college hospitals, usually only complicated cases are managed and long term follow up may not be feasible. Further there may be financial constraints and difficulty faced by affected people in travelling to hospitals especially in patients with deformities.

Future perspective

The occurrence of new cases of lepromatous leprosy, grade 2 deformities, increase in number of lepromatous cases and the persistence of childhood leprosy signifies the requirement of a concerted effort from both the physician and the National Leprosy Eradication Programme for early detection of clinical cases at community level. Introduction of better case detection techniques like PCR, proper training of the health care workers, amelioration of referral system and continued IEC/BCC activities at all the levels without which eradication of leprosy will be difficult.

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