Original Research Article

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A study of leprosy patients attended tertiary care hospital

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ABSTRACT

Background: Recorded leprosy case load has come down from to less than one case per 10,000 populations at national level in December 2005. Considerable changes in the epidemiological pattern of the disease have been observed due to the historical trend of the disease; the impact of interventions; the efficacy of chemotherapy and the role of improved health services. This study was planned to know the pattern of leprosy cases attending tertiary care hospital, their treatment & outcome.

Methods: It is a retrospective study conducted from Bharati Vidyapeeth Deemed University Medical College & Hospital from 2007 till December 2015. Study-subjects include patients with leprosy and sample size includes all the patients of leprosy from January 2007 to December 2015. The study-tools: records, biopsy tissue blocks. Statistical analysis: percentages.

Results: There were total 42 cases. Total 9.5% were children. Male to female ratio was 1.33:1. Two (4.8%) patients gave family history of leprosy, 23 (54.8%) were from rural area. Clinically 16.66% patients had single patch, 50% had nerve involvement. The most common type was borderline tuberculoid leprosy (35.7%). Out of these 42 cases 22 cases had completed the treatment, 14 on treatment. Six patients were defaulted.

Conclusions: Early diagnosis & treatment of leprosy is happening as none of the cases had disability. History of contact in study subject was not common & presence of leprosy in paediatric age group indicates continued transmission. However there is a need of strong follow-up system for defaulters.

Keywords: Clinical pattern of leprosy, Histopathological pattern of leprosy, Leprosy, Paediatric leprosy

INTRODUCTION

Leprosy is widely prevalent in India. Although the disease is present throughout the country, the distribution is uneven. After introduction of MDT in the country, the recorded leprosy case load has come down from 57.6 cases per ten thousand population in 1981 to less than one case per 10,000 population at national level in December 2005. However, the new case detection rate which is an important statistical indicator in National Leprosy Eradication Programme has not shown any significant decline. ²

The general impression among experts is that there were considerable changes in the epidemiological pattern of the disease during the past decade. These changes are reflected by clinical profile of newly detected cases; an increasing proportion of patients diagnosed with few lesions; variations in the proportion of MB patients and decreasing proportion of patients with irreversible disabilities (Grade 2). In addition, there are visible changes in the prognosis of the disease during treatment and significant reduction in the risk of becoming disabled. All these changes could be explained by a combination of factors, e.g. the historical trend of the disease; the impact of interventions; the efficacy of

Antileprosy drugs and the role of improved health services.³

Histopathological examination is important for exact classification of leprosy, and confirmation of suspected cases with varied presentations and complications so as to provide appropriate management of patients.⁴⁻⁷ Histopathological examination provides early & accurate diagnosis.

This study was planned to know the pattern of leprosy cases attending Bharati Medical College and Hospital, their treatment & outcome.

METHODS

This was a retrospective study conducted in Bharati Vidyapeeth Deemed University Medical College & Hospital. After getting the Institutional Ethical Committee clearance, records of all leprosy cases were obtained from January 2008 & till December 2015 & used for data collection with prior permission from Medical Superintendent. Leprosy cases were searched from the records of Department of Dermatology, venerology & leprosy. Slides of these patients were obtained & assessed by pathologist investigator. Slides of all the patients were available, as all cases were subjected to biopsy for confirmation of diagnosis. These previous slides were reviewed again for histopathological presentation of disease on the slides stained with 5% Z-N stain & to demonstrate the lepra bacilli. This was done for double assurance. Data was analyzed for descriptive statistical analysis using percentage & proportion.

RESULTS

Total 42 cases were diagnosed clinically & confirmed histo-pathologically during the study period of 8 years.

Demographic characteristics

Patient's age ranged between 6 years to 70 years with mean age of 35 years and SD 16.137. Maximum patients (21, 50%) belonged to age group 15-35 years & 9.5% of total patients were children. Gender wise male patients (24, 57.1%) were more common than females (18, 42.9%). Male to female ratio was 1.33:1 (Table 1).

Majority patients were from rural area (23, 54.8%). Family history of leprosy was available only in 2 patients (4.8%) (Table 1).

There were total 12 (28.6%) patients, who gave history of previous incomplete treatment. So these patients were defaulter coming again for treatment (Table 1).

There were total 4 patients of paediatric age group and none of them had family history of leprosy.

Table 1: Distribution of cases according to sociodemographic characters.

Socio-demograph factors	ic	Frequency	Percent
Age (Years)	<15	04	9.5
	15-35	21	50
	35-55	14	33.3
	55-75	03	7.2
Sex	F	18	42.9
	M	24	57.1
Residence	Rural	23	54.8
	Urban	19	45.2
Family History/	N	40	95.2
history of contact	Y	02	4.8
Total		42	100

Clinical pattern

There were total 7 (16.66%) patients who had single patch & were located mainly on uncovered part of body or the part of body which can be easily discovered by patient such as face, hands. Most of the patients (31, 73.80%) had patches ranging between 2 to 5 & only 4 (9.52%) patients had patches 6 or more than 6. There were only 10 (23.80%) patients who had patches on covered area or the area which is not accessible to be seen by patient. Otherwise 32 (76.19%) patients had at least one or some patches on the uncovered body part or the area which can be seen by patient easily.

Nerve involvement was seen in 21 (50%) patients. Multiple nerve involvement was present in 8 (19.04%) patients. Ulnar (20, 47.62%) was the most commonly affected nerve. Ulcer was seen in 5 (11.90%) (Table 2).

Table 2: Distribution of complications according to site.

Complications		Frequency	Percent
Nerve	Ulnar	20	47.62
	Popliteal	6	14.29
	Supraorbital	1	2.38
Ulcer Site	Toe	2	40
	Heel	2	40
	Sole	1	20

Deformity: None of the patient had deformity.

There were 4 (9.5%) who suffered from lepra reaction and their diagnosis was confirmed histo-pathologically.

There were 3 cases in which clinical picture were not clear. But their diagnosis was confirmed on histopathology as leprosy.

Out of these 42 cases, 12 cases were diagnosed earlier. These previously diagnosed cases have received incomplete treatment of various durations. Total 30 (71.43%) cases were diagnosed newly. Out of these 12 previously diagnosed patients, 8 patients were diagnosed & treated at government hospital & remaining 4 at private hospitals.

Histopathological pattern of disease

Histopathological presentations are given in Table 3. The most commonly noted type was borderline tuberculoid leprosy (35.7%) followed by tuberculoid and indeterminate type (19%). The diagnosis of indeterminate leprosy hinges on the demonstration of 1 or more AFB in the nerve, erctor pillie muscle, macrophage around the vessel or just under the epidermis. In our case we could see 1-2 AFB in only 3 cases. But in other cases we gave the diagnosis consistent with the clinical diagnosis.

Table 3: Histopathological findings.

Histopathological findings	Frequency	Percent
Borderline leprosy	2	4.8
Borderline tuberculoid	15	35.7
Erythema nodosum leprosum (ENL)	1	2.4
ENL in LL	1	2.4
Histoid Leprosy	2	4.8
Indeterminate	8	19.0
Lepromatous leprosy	4	9.5
Midborderline	1	2.4
TT	8	19.0
Total	42	100.0

According to Indian classification maximum cases belonged to tuberculoid leprosy (23, 54.76%) followed by lepromatous leprosy cases (10, 23.81%). Pure neurotic cases were not seen. There were 8 (19.05%) were of indeterminate type & borderline1 (2.38%).

Treatment

Out of these 42 cases 22 cases had completed the treatment. At present there are 14 patients on treatment. Remaining six patients were defaulted.

DISCUSSION

The present strategy of leprosy control is to reduce the load of infection in society by detecting the cases & providing adequate treatment to the patient so as to break the chain of infection. However there has been no change in the Annual Case Detection Rate & Prevalence Rate from 2005 to 2015, which clearly indicates that transmission of leprosy is still continued. 9

This retrospective study conducted in a tertiary care hospital includes total 42 cases which were diagnosed clinically & confirmed histo-pathologically. Age of patients ranged from 6 years to 70 years with mean age of

35 years. Maximum cases observed in the age group of 35-55 years. Similar findings are noted by other studies. 5,6,10,11

Generally leprosy believed to be common in males. In the present study gender wise marginal male predominance was observed with male to female ratio of 1.33:1. Similar findings were noted by other studies. ^{2,4,6,7,11,12}

In this study only in 2 patients (4.8%) gave history of leprosy in family or close contact. This proportion is less than the study from Himachal Pradesh.² There were total 4(9.5%) patients of pediatric age group & none of them had history of leprosy in family. This indicates chances of contracting the infection in children outside the family is persistently high & still there is continuous transmission of the disease.⁹ There is a study on post-elimination status of childhood leprosy from South India by Chitra P & Bhat RM. According to them child proportion of newly diagnosed cases did not show any significant decline following elimination. However in their study they found more than half of child cases had a history of household contact.¹³

In the present study none of the patient had deformity. It indicates early diagnosis of cases & it was a passive detection. Reason may be, majority patients (76.19%) had at least one or some patches on the uncovered body part & it made patients aware of it & sought the consultation for the same at the earliest.

Nerve involvement was seen in 21(50%) patients. This proportion is lower than a study from Dakar which mentions it as 68.49%. ¹¹ Pure neuritic cases were not observed in this study. Similar finding is noted by a hospital based study from Maharashtra. ⁸

Histo-pathological examination is required when there is difficulty in diagnosing the cases clinically. 4,5,7 Thus histopathological examination is the gold standard for the accurate diagnosis of leprosy. It is also useful in classifying the cases accurately.⁶ Leprosy lesions on the face may not be anaesthetic. These lesions can be missed if only clinical criteria for diagnosis is adopted. 14 In both tuberculoid & inderminate type lepra bacilli are usually fewer in number as compared to the polar lepromatous forms. 15 But the other histopathological findings like the granulomas & neural involvement were the criteria most useful for the typing of the tuberculoid forms. The indeterminate forms were obviously problematic histopathologically due to the nonspecific histopathological findings but then the clinical correlation was recommended for the final diagnosis. In this study borderline tuberculoid was the most common form. Percentage of lepromatous cases was more common in a study conducted at Udaypur. 10 Naves MM et al have found the M. leprae in nasal biopsy specimens of 6.8% of borderline tuberculoid leprosy patients. These patients may have nasal bacilliferous discharge & can be a potent source of infection to the population. Further they advice on the one year of multidrug therapy for these patients. ¹⁶

CONCLUSION

Early diagnosis & treatment of leprosy is happening as none of the cases had disability. Cases of tuberculoid leprosy are predominant. History of contact in study subject was not common & presence of leprosy in peadiatric age group indicates continued transmission. However there is a need of strong follow-up system for defaulters.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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