CURRENT TRENDS IN LEPROSY- A RETROSPECTIVE STUDY FROM A TERTIARY CARE CENTRE IN KERALA

Rani Mathew[1], Kunjumani Sobhanakumari[2]

[1]Assistant Professor, Department of Dermatology and Venereology, Government T. D. Medical College, Alappuzha.
[2]Professor, Department of Dermatology and Venereology, Government T. D. Medical College, Alappuzha.

ABSTRACT

BACKGROUND

Leprosy has been officially eliminated from India since December 2005. But even now high prevalence of the disease is being reported from different parts of the country. Present study was done to determine the clinico-epidemiological pattern of leprosy in our institute.

MATERIALS AND METHODS

Records of all patients diagnosed to have leprosy in a tertiary care hospital, Kerala, during 2012-2016 were analysed.

RESULTS

68 patients were diagnosed to have leprosy during the study period. M: F ratio was 1.7:1. Multibacillary leprosy was reported in 66% patients. 75% cases were borderline tuberculoid. WHO grade 2 deformities were documented in 29% patients. 4% of new leprosy cases occurred in children.

CONCLUSION

Though the number of new leprosy patients is decreasing since 2012 with lesser reports of disability and childhood cases, more active elimination strategy is needed to tackle this chronic disabling disease.

KEYWORDS

Leprosy, Multibacillary, Disability, Childhood Leprosy.

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BACKGROUND

Leprosy is a chronic infectious disease primarily affecting skin and nerves.[1] It remains an important cause of preventable disabilities.[2] It is caused by Mycobacterium leprae, a slow growing mycobacterium.[3] Ridley and Jopling proposed a five group classification of leprosy based on clinical, histological, immunological and bacteriological findings. Clinicians have also adopted the same nomenclature for classifying leprosy clinically.[1] Introduction of multidrug therapy (MDT) by World Health Organisation (WHO) was a major step in the fight against leprosy. This brought down the number of leprosy patients in world from 5.4 million in early 1980s to a little over 0.21 million new cases for year 2014. Still India contributes 60% of the global leprosy burden. Proportion of child leprosy cases is indicative of continued transmission of infection in the community while percentage of Grade 2 disability reflects delay in diagnosis.[4]

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Corresponding Author:
Dr. Rani Mathew,
Assistant Professor,
Department of Dermatology
& Venereology,
Government T. D. Medical College,
Alappuzha.
E-mail: raniguild@yahoo.co.in
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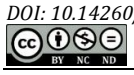

Knowledge about epidemiological profile of leprosy in a community is essential for effective implementation of control programmes.

We conducted this study to assess the current epidemiological pattern of leprosy in patients who attended leprosy clinic of our hospital and also to observe the prevalence of childhood cases and disability among them.

MATERIALS AND METHODS

Ours is a retrospective study done in the Dermatology Department of a tertiary care centre in Alappuzha district, Kerala, South India. Case records of all the patients with leprosy who attended our clinic from 2012-2016 were analysed and findings were recorded. Age, sex, nativity of patients and presenting complaints were noted. Patients were classified based on clinical and histopathological details. Muscle palsy, disability, nerve thickening and reactions were looked for. Special emphasis was given for childhood leprosy cases (14 years and less) and relapses. All details were entered in MS excel spreadsheet and analysed.

RESULTS

68 patients presented to our department with leprosy during the five-year study period of which 43 were male, M: F ratio being 1.7: 1. Youngest patient was a 2-year-old child, the eldest being a male aged 72 years. Maximum patients (n=18, 26%) belonged to the 31-40 years age group. Figure 1 shows the age distribution of our leprosy patients.

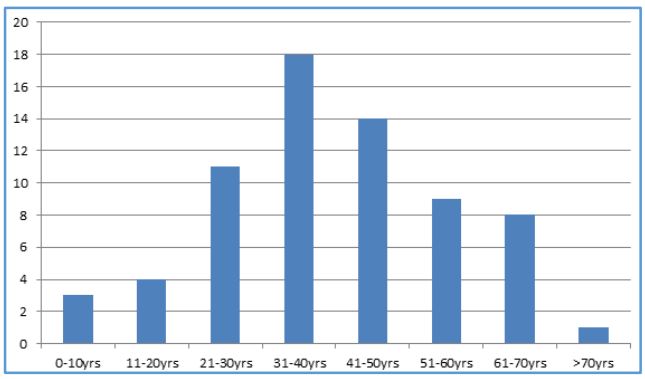

Figure 1. Age Distribution of Patients with Leprosy

65 patients were natives of Alappuzha district, where study was conducted, while rest were from neighbouring districts of our state. Only 2 patients gave history of travel outside state. Family history of leprosy was obtained in only one patient (1.5%). Number of new cases of leprosy reported in our hospital showed a decline from 2012-2016 as shown in Figure 2.

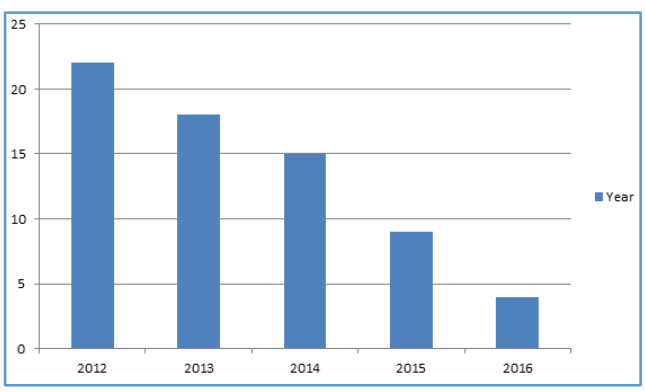

Figure 2. Number of New Leprosy Cases during Last Years

Different types of skin lesions (macules, papules, plaques, nodules, ear lobule infiltration) were the predominant presenting complaints seen in 52 (76%) cases. Ten patients presented with numbness of extremities. Non-healing ulcer of foot made three patients to come to our department while two patients had history of loosening of footwear. One subject first presented to ENT Department with complaints of epistaxis where he was detected to have skin lesions and referred to us.

Eight patients had bilateral pitting pedal oedema at presentation among which five had oedema of both hands also.

Multibacillary leprosy (MB leprosy) was the common type in our patients, reported in 45 (66%) subjects.

Clinically borderline tuberculoid (BT) was the commonest spectrum of leprosy observed by us, seen in 51 (75%) subjects. Table 1 shows the clinical spectrum of leprosy in our patients.

Disease Spectrum	Number of Patients	Percentage
Tuberculoid (TT)	0	0
Borderline tuberculoid (BT)	51	75
Mid-borderline (BB)	0	0
Borderline lepromatous (BL)	7	10
Lepromatous (LL)	5	7
Indeterminate	2	3
Pure neuritic	3	4

Table 1. Clinical Disease Spectrum Analyses

Biopsy was taken in 66 patients, except 2 cases of pure neuritic leprosy. Clinicopathological correlation was obtained in 55 (83%) subjects. Histology was suggestive of tuberculoid (TT) leprosy in 6 clinically diagnosed BT patients. In one patient with clinically diagnosed borderline lepromatous (BL) disease, biopsy showed features of BT. Histopathology showed only perivascular lymphocytic infiltrate in in three cases who had BT leprosy clinically. Sural nerve biopsy was suggestive of BL spectrum in one case of pure neuritic leprosy with multiple peripheral nerve thickening. Biopsy was avoided in other two cases of neuritic leprosy as motor nerves were involved.

Commonest nerve palsy in our patients was that of ulnar nerve, seen in 13 (19%) patients. Table 2 shows details of nerve palsy in our study.

Nerve Palsy	Type of Leprosy	Number of Patients	Total Number of Patients
Ulnar	BT	7	13
	BL	2	
	LL	2	
	Pure neuritic	2	
Common peroneal	BT	3	4
	BL	1	
Facial	BT	1	1

Table 2. Details of Nerve Palsy in Leprosy

13 (19%) patients showed features of type 1 reaction while none had type 2 reactions. Reactions occurred in 9 patients in BT spectrum and 2 each in BL and LLS spectrum. Neuritis most commonly affected ulnar nerve followed by common peroneal nerve.

Overall incidence of various deformities of hands, feet and eyes (WHO Grade 2) was 29% (n=20). Claw hand was the common paralytic deformity seen in 19% (n=13), followed by foot drop in 6% (n=4) and facial palsy in 1.5% (n=1) patients. Two patients had trophic ulcer of feet. Table 3 shows details of disability in our patients.

Deformity	Number of Cases
Hands	
Grade 1	4
Grade 2	13
Feet	
Grade 1	6
Grade 2	6
Eyes	1

Table 3. Prevalence of Deformities in Hands, Feet and Eyes

Clinically thickened peripheral nerve enlargement was observed in 35 (51.5%) patients. Ulnar nerve was the most commonly thickened nerve trunk seen in 29 (42.6%) subjects followed by common peroneal nerve in 14 (20.5%) patients. Among cutaneous twigs, radial cutaneous nerve was observed to be the commonest thickened nerve (n=10, 14.7%) followed by superficial peroneal nerve (n=6, 8.8%).

Childhood leprosy accounted for 4% (n=3) cases of leprosy in our hospital. It included two boys and one girl. All of them showed features of Ridley-Jopling type BT. Definite family history of leprosy was obtained in one child. Youngest member of our study, a 2-year-old boy, had features of Type 1 reaction with facial palsy. MB-MDT (Multibacillary-multidrug therapy) was given for 2 children and paucibacillary treatment for the other.

Standard treatment according to WHO regimen was given for all the patients. 4 patients developed sensitivity to dapsone while on treatment and the offending drug was substituted with ofloxacin in 3 multibacillary cases and with clofazimine in the paucibacillary patient. One patient with lepromatous leprosy was detected to have military tuberculosis and was given antituberculous treatment (CAT-1) also.

We encountered three cases of relapse during the study period of which 2 were male. Table 4 shows details of relapse in our patients.

Age in Years	Sex	Primary Spectrum	Relapse Spectrum	Interval of Relapse in Years
23	M	Lepromatous (LL)	Borderline tuberculoid (BT)	2
43	F	Borderline lepromatous (BL)	Borderline tuberculoid (BT)	3
35	M	Borderline lepromatous (BL)	Borderline lepromatous (BL)	4

Table 4. Relapse in Leprosy

DISCUSSION

Over the last three decades, WHO has been coming out with various actions plans outlining the strategies required for control of leprosy. Global leprosy strategy 2016-2017 by WHO has set 3 targets 1) zero grade 2 disabilities in children with leprosy, 2) reduction of new leprosy cases with grade 2 disability to <1 case/million population, 3) zero countries with legislation allowing discrimination based on leprosy. South East Asian regions including India accounts for 74% of new leprosy cases globally.[4]

We observed a steady decline of leprosy cases in our institute during the past 5 years. Similar study from Delhi also showed decrease in new cases of leprosy.[3] Childhood leprosy accounted for only 4% of new leprosy cases during our study period. This is a good sign as it indicates that active transmission of leprosy is less. 10% of new patients were children in a study from Mumbai during 2008-2015.[2] In another ten-year retrospective study (2003-2012) from Kerala, 12.1% of new leprosy cases were in children.[5]

Most of our patients presented in 4th and 5th decade of life. Previous studies also observed leprosy to be more common in middle age.[2,3] Family history of leprosy was in 1.5% of our patients. Chhabra et al observed similar history in 5.9% patients.[3]

66% of our patients had MB leprosy of which BT was the commonest clinical spectrum obtained. Similar study from Delhi observed MB leprosy in 86.9% patients with BT as the commonest spectrum.[3] Percentage of MB cases was 47% in another study from Mumbai.[2]

Clinicopathological correlation was seen in 83% cases in present study. Bijjaragi et al in their study observed similar correlation in 57.3% cases while Chhabra et al noted it in 78.8% subjects.[1,3] Maximum correlation was seen in LL spectrum. The percentage of parity between clinical and histopathological classification is reported to be highest at the polar ends of spectrum.[1] Histopathological examination should be carried out in all cases if possible for proper classification of leprosy which is helpful for better allocation of patient to treatment schedules. Absence of typical findings of leprosy in few BT patients could be due to improper biopsy specimens. We observed Grade 2 disability of hands, feet and face in 29% patients. Chhabra et al and Jindal et al detected deformities in 37.9% and 54.47% leprosy patients respectively.[3,6] Claw hand was the most common deformity detected by us which is similar to other studies.[2,3]

19% patients developed type 1 reaction while none had type 2 reaction. In the study from Delhi, 30.4% patients had type 1 reaction and 7.1% patients had type 2 reactions at initial presentation.[3] We observed maximum reactions in BT spectrum of leprosy. In a field study, Type 1 reaction occurred in only 3.1% of BT patients with maximum reactions being reported in BB spectrum.[7]

Proportion of patients with clinically thickened peripheral nerves in our study (51.5%) was lower than that seen in a study from Delhi (88.9%), but ulnar nerve was the most commonly enlarged nerve in both studies.[3]

We encountered 3 cases of relapse during our study period, of which 2 were middle aged males. According to literature, relapses are common in age group 30-44 and in males.[8] All patients were of multibacillary type and presented within 5 years of release from treatment. Two of our patients relapsed in the upgrading spectrum. LL and BL patients relapsing with upgrading spectrum in the form of BT lesions are reported, though rare.[8] Relapse indicates the need for post MDT surveillance in leprosy patients.

CONCLUSION

Though new cases of leprosy are still being reported, a decline in the number of cases in recent years is appreciable. Also, lesser occurrence of disabilities and childhood cases of leprosy suggest the efficacy of leprosy elimination programmes in our area. However, a true picture can be obtained only by community based survey of whole district. Further studies in this respect are needed to assess the exact status of leprosy in our area. Also, more active campaign is needed for early discovery of hidden cases of leprosy which will further help to reduce disability in these patients.

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