Current Leprosy Scenario at a Tertiary Care Hospital in Uttarakhand

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ABSTRACT

Introduction: Despite elimination, Leprosy continues to be a major public health problem in India. According to World Health Organisation's (WHO) data for year 2014, Indian contribution for global leprosy is more than 60%. Moreover, grade 2 disabilities have shown an increasing trend and childhood cases have not declined appreciably. It was in this background that we planned to study the Leprosy scenario at our tertiary healthcare center in Dehradun, Uttarakhand.

Material and Methods: This retrospective study was carried out at Himalayan Institute of Medical Sciences (HIMS), Dehradun. Uttarakhand, a tertiary care hospital and referral center for Garhwal region of Uttarkhand and adjoining areas of western Uttar Pradesh (UP). Clinical records of all patients, attending leprosy clinic, for a period of five years, from January 2011 to December 2015, were studied and data regarding demographic details, clinical features at presentation, complications and treatment given was analyzed.

Results: A total of 238 new cases of leprosy formed the study subjects. There was a male predominance with M:F ratio of 3.7:1. Commonest age group affected was 17-40 years with 54.6% cases. Children (<16 Years) were 2.1%. Majority (65.5%) patients were from UP. Borderline spectrum with 68.9% patients dominated clinical picture. Borderline tuberculoid (BT) was the commonest clinical type with 39.5% cases. Lepra reaction was present in 34.4% cases. WHO grade 2 deformities were present in 8.8% cases. Claw hand was the commonest (4.2%) paralytic deformity at presentation. There was a gradual decline in number of new cases seen over the five year period of study. MB leprosy was present in 81.9% cases.

Conclusion: Our study showed a steady decline in the number of new cases of Leprosy over the period of five years. Proportion of childhood new cases of leprosy was also less compared to national average. However, high percentage of MB cases, Lepra reactions and grate 2 disabilities, in new cases of Leprosy, was a cause for concern and highlighted more vigorous and active search in uncovering the hidden cases.

Keywords. Leprosy, disabilities, MB, Garhwal. Uttarakhand

INTRODUCTION

Leprosy is a Chronic infectious disease caused by Mycobacterium Leprae (M. leprae), which mainly affects the skin and peripheral nerves. Introduction of multidrug therapy (MDT) in 1981, on the recommendation of the World Health Organization (WHO),[1] has led to sharp decline in the prevalence rate (PR) of Leprosy, from 57.60 in 1981 to 0.69 per 10,000 population in 2015, at national level.[2] Notwithstanding this significant decline in PR, Leprosy continues to be an important public health problem in India. As per the latest global leprosy figures for year 2014, India has the highest Leprosy burden, contributing more than 60 % of the new cases of Leprosy globally.[3] WHO composite index for Leprosy, based on prevalence, new case detection, case detection rates, grade 2 disability rate and percentage of child cases, places India with top 22 countries globally, for high burden of disease including high transmission.[4] It was, in this light that a study was planned to analyze the current scenario of Leprosy at Himalayan Institutes of Medical Sciences, Dehradun, Uttarakhand, India, a tertiary care hospital, located in central sub Himalayan region, and catering to Garhwal region of Uttarakhand, and adjoining areas of western Uttar Pradesh.

MATERIAL AND METHODS

This retrospective study, aimed at evaluating the current trends in leprosy, was carried out at Himalayan Institute of Medical Sciences (HIMS), Dehradun, Uttarakhand, one of the teaching hospitals and major referral centers for Garhwal region of Uttarakhand, and adjoining districts of western Uttar Pradesh. Clinical records of all the patients of Leprosy attending leprosy Clinic, in OPD of the department of Dermatology, Venereology and Leprosy, for a period of five years, from January 2011 to December 2015, were analyzed, after obtaining institutional ethical clearance and anonymising the data. The Clinical records of patients provided information on demographic data, details of clinical examination, type of Leprosy, complications like Lepra reactions, deformities, trophic ulcers and treatment. Patients were classified according to Ridley Jopling classification.[5] Two more categories, indeterminate leprosy (I) and primary neuritic leprosy, were added. For the purpose of MDT, the disease was classified into multibacillary (MB), if there were six or more lesions and/or more than one nerve involvement, as per WHO classification.[6] The diagnosis was mostly clinical and made by consultants with postgraduate qualification in Dermatology,Venereology and Leprosy. Slit skin smear examinations and lesional biopsy were done, wherever needed, for confirmation of diagnosis.

STATISTICAL ANALYSIS

Descriptive statistics like mean and percentages were used to interpret the data with the help of Microsoft office 2007.

RESULTS

A total of 238 new leprosy patients were seen during the study period. The age and sex distribution of these patients is shown in

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table-1. There was a male preponderance with total 187 (78.6%) males as against 51 (21.4%) females, with a male to female ratio of 3.7:1. Maximum number of 130 cases (54.6%), were in the young age group of 17 to 40 years. Youngest and oldest patients were aged 13 years and 75 years, respectively. Only 05 patients (2.1%) were children with less than 16 years of age. Majority of the patients (156;65.5%) hailed from adjoining districts of Uttar Pradesh, while remaining 82 (34.5%) were natives of Uttarakhand. Only 21 (8.8%) patients gave history of prolonged contact with a leprosy patient within the household

Clinical profile of leprosy patients is shown in table-2. Borderline spectrum (BT,BB,BL) with 164 (68.9%) patients dominated the clinical picture. This was followed by lepromatous leprosy (LL), primary neuritic (P), tuberculoid (TT) and indeterminate leprosy (I) with 51 (21.4%), 18 (7.6%), 3 (1.3%) and 2 (0.8%) cases, respectively. In borderline spectrum, borderline tuberculoid (BT) was the commonest type with 94 (39.5%) cases. This was followed by borderline lepromatous (BL) and borderline borderline leprosy (BB) with 63 (26.5%) and 7 (2.9%) cases, respectively. Overall, borderline tuberculoid (BT) with 94 (39.5%) cases, was the commonest clinical type of leprosy.

Overall 82 (34.4%) patients had features of lepra reactions at the time of first presentation to the clinic. Out of these, 43 (18%) had type 1 lepra reaction and remaining 39 (16.4%) had features of type 2 lepra reactions. Deformities were present in 52 (21.8%) patients at presentation. Of these, 31 (13%) had WHO grade 1 and 21 (8.8%) patients had grade 2 deformities. Claw hand was the commonest paralytic deformity in 10 (4.2%) cases at presentation, followed by foot drop, median nerve palsy and facial deformity in 4 (1.7%), 4 (1.7%) and 3 (1.3%) patients, respectively. Trophic ulcers were present in 11 (4.6%) cases.

Table-3 shows yearly breakdown of new leprosy cases from year 2011 to 2015. There has been a gradual, decline in the number of leprosy cases with year 2011 recording 62 and year 2015 recording 35 new cases. Multibacillary (MB) leprosy accounted for 81.9% (195) cases as against 18% (43) cases of paucibacillary disease.

Age	Sex		Total (%)
	Male	Female	
0-16 years	04	01	05 (2.1%)
17-40 years	105	25	130 (54.6%)
41-60 years	65	22	87 (36.6%)
>60 years	13	03	16 (6.7%)
Grand Total	187 (78.6%)	51 (21.4%)	238 (100%)

Table-1: Age and Sex distribution of Leprosy patients

DISCUSSION

Elimination of leprosy as a public health problem was reached at the global level in the year 2000 and by India on 31 December 2005. Thereafter, leprosy services in India have been integrated with general health care system. Prevalence rate (PR) has declined to 0.69 in March 2015, from a high 0.96 per 10,000 population, in 2005.[2] In our study, total number of new cases

Type of Leprosy	Number of patients			Number of patients in lepra reactions			Number of patients with deformities		
	Male	Female	Total (%)	Type-I	Type-II	Total	Grade –I	Grade-II	Total
TT	03	00	03 (1.3%)	--	--	--	01	--	01
BT	76	18	94 (39.5%)	31	--	31	06	07	13
BB	06	01	07 (2.9%)	04	--	04	03	02	05
BL	47	16	63 (26.5%)	05	07	12	02	04	06
LL	39	12	51 (21.4%)	--	32	32	06	03	09
P	14	04	18 (7.6%)	03	--	03	13	05	18
I	02	--	02 (0.8%)	--	--	--	--	--	--
Grand Total	187	51	238 (100%)	43 (18%)	39 (16.4%)	82 (34.4%)	31 (13%)	21 (8.8%)	52 (21.8%)

Table-2: Clinical profile of Leprosy patients

Year	Total No of Leprosy cases	Type of Leprosy		Total No of patients in reaction		
		PB (Paucibacillary)	MB (Maltibacillary)	Type-I	Type-II	Total
2011	62	08	54	04	03	07
2012	58	07	51	09	12	21
2013	40	10	30	09	10	19
2014	43	07	36	10	07	17
2015	35	11	24	11	07	18
Total	238 (100%)	43 (18%)	195 (81.9%)	43 (18%)	39 (16.4%)	82 (34.4%)

Table-3: Year wise distribution of Leprosy cases

decreased from 62 in 2011 to 35 in 2015. Similar drop in new leprosy cases has been reported in other studies.[7-9] There are, however, areas of concern in latest leprosy scenario, as per the data collected by WHO for the year 2014, which points to slight increase in new cases detected in African region, Southeast Asian region and India.[3,4]

Majority of our patients belonged to the age group 17-40 years, similar to the finding in other studies.[7,10,11] The incidence of childhood leprosy among new cases was 2.1%, which is closer to NLEP data for the year2015 for Uttarakhand (3.38%) but less than the national incidence of 9.04%[2] childhood leprosy is an indicator of ongoing transmission of the infection in the community. There is no appreciable decline in childhood leprosy both at national and global level, in last decade. Which is one of the major causes for concern.[3,4] In our study majority (65.5%) of the patients were from neighboring state of Uttar Pradesh. Both Uttar Pradesh and Uttarakhand have achieved Leprosy elimination, with PR of 0.66 and 0.35 per 10,000 population, respectively, as of March 2015.[2]

A male preponderance was found in our study with male to female ratio of 3.7:1. Male preponderance has been reported in other studies on leprosy as well.[7-12] Higher male incidence has often been attributed to increased opportunities for them to contract infection due to more outdoor activities in search of livelihood.

An overwhelming majority (81.9%) of new patients had MB leprosy in our study, as opposed to 18% PB cases. MB predominance has also been reported in other studies.[7,9,11,12] An increase in the proportion of multibacillary cases, in the past years, has been observed by various other workers.[7-9] Increased proportion of MB cases indicate the presence of advanced cases of Leprosy, and indirectly the magnitude of infection, in the community. MB proportions for 2015, were 63.16% and 52.82% for Uttarakhand state and India as a whole, respectively.[2] Borderline spectrum cases (68.9%) dominated the clinical picture in our study. Similar dominance of Borderline spectrum cases has been reported by Chhabra et al.[7] from Delhi, Jindal et al.[10] from Shimla, and Thakkar et al.[11] from Vadodara. The most frequent clinical type of leprosy in our study was BT (39.5%). The corresponding figures for BT leprosy from other tertiary care hospitals in Delhi and Shimla are 56.3% and 32.89%, respectively.[7,12]

Overall 34.4% new patients had features of lepra reaction at the time of initial presentation, in our study. This is comparable to incidence of reactions 37.5%, 34.4% and 34.9% reported by Chhabra et al.[7], Sasidharanpillai et al.[8] and Singal et al.[9], respectively. Leprosy reactions have significant role in causing the nerve damage and deformity in leprosy. Early recognition and treatment of reactions can go a long way in preventing the deformities.

A total of 21.8% patients had deformities at initial evaluation. Of these 8.8% had WHO grade 2 deformity. This is near similar to figures of 7.11% and 6% reported by Singh et al.[12] and Mehta et al.[13], respectively but much less compared to 30.79% and 37% grade 2 disabilities reported in studies from Delhi.[7,9] A higher proportion of WHO grade 2 disability points to delay in diagnosis and starting the anti leprosy treatment. Latest global figures for year 2014 point to increasing trend in WHO grade 2 disability.[3,4]

This being a retrospective study, based on the data analysis of departmental records, cannot reflect on the actual situation of the disease on the ground. Moreover, ours being a tertiary care hospital, it can be safely assumed that mostly complicated cases would have reported to us for treatment. A significant proportion of our cases are from neighboring districts of Uttar Pradesh. A community based survey would give more accurate picture of the current trend of this disease in Garhwal region of Uttarakhand.

CONCLUSION

Study of Clinical Profile of leprosy, at our center, revealed a steady decline in the number of new cases, over the five year study period. Incidence of childhood leprosy has also been less compared to national average. However, high proportions of MB disease, lepra reactions and grade 2 disabilities, continue to be the cause for concern and call for concerted efforts, on the part of all stake holders, to carry out active search to uncover the hidden cases of leprosy, in the community and treat them early, especially pediatric cases and those with MB disease and lepra reactions.

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