

Impact of integration on the profile of newly diagnosed leprosy patients attending a referral hospital in South India

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This article compares the clinical profile of new untreated leprosy patients attending a referral hospital (The Schieffelin Institute for Health Research & Leprosy Centre, formerly known as SLR&TC, Karigiri, South India, in post-integration period(2005-2007) with that during the pre-integration period (1995-1996). A total of 529 patients - 259 in pre-integration and 270 in post-integration period - were seen at this hospital. The clinical data culled from records for the earlier period were compared with data gathered prospectively for the latter period and was analyzed using SPSS software. The results showed a significant increase in the mean age of registration, percent multibacillary (clinical criteria) and grade 2 disabilities in post-integration period. Increase in proportion of cases with grade 2 deformities is a matter of concern and suggests continued need for referral hospitals for their management and also population based overall assessment whether actual numbers with deformities have increased or it is peculiar to a tertiary care hospital where the cases with problems may be coming. As the proportion of bacteriological positive cases was not found to change, it is a positive sign of effective coverage in the post-integration scenario in this population.

Key words : Integration, Multibacillary, Grade 2 disabilities

Introduction

Except for three countries, leprosy has been declared eliminated globally as a public health problem as of 2008 (WHO 2008). India achieved the target by December 2005 (Joshi et al 2007). The next milestone is to eradicate leprosy through drastic reductions in new cases which are estimated to be still high.

Most governments including India have also integrated leprosy care into their general health services (Govt of India 2006). This implies that new cases are detected only through voluntary reporting to general health and referral centres. Given the history of leprosy control programs, the health seeking habits of the people and the

prevailing social stigma against leprosy; it is likely that newly diagnosed leprosy patients in the post-integration era might be different from those reporting during pre-integration (Feenstra and Visschhedijk 2002; Rao et al 2002; Norman et al 2006; Arora et al 2008). The leprosy elimination strategy will have failed if leprosy disability is not prevented after it has been declared eliminated in 2005 (Porter 2004). An earlier study in Chattisgarh indicated that there were some significant differences among cases seen in the out-patient department of Regional Leprosy Training and Research Institute (RLTRI) during the pre and post-integration periods from 2000-2005 (Pandey et al 2006). Arole et al (2002) have reported a reduction in leprosy stigma due to integrated

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services. There was a preponderance of leprosy patients in the reproductively active age groups and of borderline type in a study at the tertiary care centre (Arora et al 2008). There is a need for more detailed information to promote integration further.

Hence, a research study was initiated at SIHR&LC, Karigiri, to determine changes in the profiles of newly diagnosed leprosy patients in the pre- and post-integration periods. The findings are presented and their implications discussed.

Materials and Methods

The Schieffelin Institute for Health Research & Leprosy Centre (formerly known as SLR&TC, Karigiri), where the present study was done, is located in Tamilnadu in south India and is a nationally and internationally renowned institution where holistic care to leprosy patients along with emphasis on research and training has been going on for more than 50 years.

A comparative descriptive study of all new untreated leprosy patients attending this institute during January 1995 to December 1996, a period of 24 months (pre-integration, labeled as Group I) and from July 2005 to June 2007, again a period of 24 months (post-integration, labeled as Group II,) was undertaken. In 1997, Tamilnadu state integrated leprosy services into the general health services and hence 1995-1996 was taken as the pre-integration period. Mode of detection was by voluntarily reporting cases to the hospital. Leprosy patients who were partially treated or suspected relapse were excluded.

Charts of all these patients were systematically screened and the relevant details extracted on to a special proforma and then transferred to microcomputer for analyses.

Comparison was done between the two periods with regard to age at the time of presentation to the hospital, duration of disease, clinical type, and leprosy grouping, nerve involvement, presence of reversal / ENL reaction, nerve function impairment, disability grading

bacteriological status and histopathological diagnoses.

Patients were classified both by Job and Chacko classification as well as by WHO grouping as either multibacillary or paucibacillary leprosy based on number of skin lesions. The major nerve trunks examined were radial, median, ulnar, lateral popliteal and posterior tibial nerves. The cutaneous nerves examined were greater auricular, radial, ulnar cutaneous and superficial peroneal nerve.

Leprosy reactions when present were classified as reversal reaction (type I reaction) if there was erythema and edema of skin lesions and / or neuritis with or without appearance of new lesion or edema of hands, feet and face.

Patients with the other category of reaction - erythema nodosum leprosum-ENL (type 2 reaction) were identified if they presented with short-lived and recurrent crops of tender erythematous subcutaneous nodules which may have ulcerated. Signs of systemic involvement with fever and malaise, inflammation in lymph nodes, eyes, joints, testes, fingers, toes or other organs were also looked for in this type of reaction.

Neuritis was identified as acute - by the presence of spontaneous nerve pain, paraesthesia or tenderness on palpation of the nerves; silent neuropathy or quiet nerve paralysis (QNP) was confirmed if there was any sensory and /or motor impairment of recent onset - less than 6 months duration - without spontaneous symptoms of nerve pain or tenderness or signs of a reaction.

Sensory and motor assessment of all major nerve trunks commonly affected in leprosy was done at the time of enrolment for the study. Slit-skin smear for acid-fast bacilli was taken in all patients from 4 selective sites (left ear lobe, left forehead, right chin, left buttock). Skin biopsies were taken (from a representative site) for most of the patients and nerve biopsies wherever indicated and sent for histopathological examination.

Results

There were 259 patients in the pre-integration (group I) and 270 patients in the post-integration (group II). The age-distributions of the two groups are displayed in Figure 1.

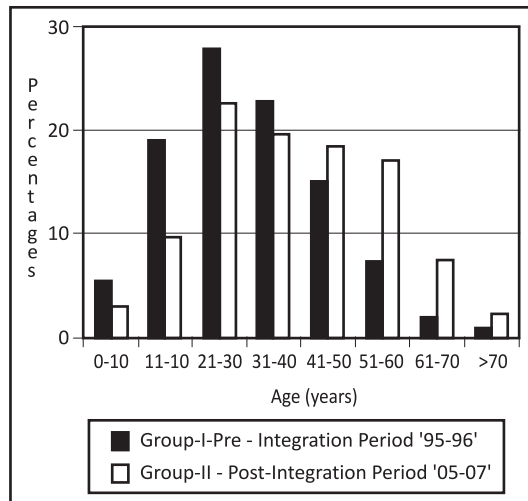


Figure 1 : Age distribution of patients in the two periods

The mean age (SD) of group I was 31.9(14.5) years and in the group II was 39.7(16.6) years, the difference statistically significant ($p < 0.05$).

Other variables are compared in Table 1 which reveal a slight increase in female cases and a decrease in proportion of child cases in post-integration period though not statistically significant.

On the other hand, there is a marked increase in MB cases (80%) and also increase in grade II deformity (29.3%) in group II (post-integration) as compared to 16.6% in group I (pre-integration). The smear positivity remains the same in both the groups. A comparison of major disease associated variables is made in Table 2.

Borderline tuberculoid leprosy was the most common type seen in both the groups. There is slight increase in lepromatous leprosy and pure neural leprosy in post-integration period. The proportion of patients with reactions did not differ significantly between the two time periods. The first presenting symptom was hypopigmented patch in both the groups. However, there is a slight increase in nodule and ulcers in group II.

Table 1 : Comparison of demographic and leprosy status in the pre-and post-integration groups

Percent	Group I (Pre-Integration) n = 259	Group II (Post-Integration) n = 270	p value
Children	10.8	5.6	0.20
Women	37.5	41.5	0.56
MB	56.0	80.0	0.0002*
Grade 2 disability	16.6	29.3	0.04*
Reaction cases			
Type I reaction	9.3	8.1	0.79
Type II reaction	1.2	1.5	0.56
Bacteriological status			
Smear-positive	27.4	27.4	1.00

*Significant

Table 2 : Comparison of clinical variables in both the 2 groups

Percent	Group I (Pre-Integration)	Group II (Post-Integration)	p value
Clinical classification			
Indeterminate, TT	3.0	2.6	1.00
BT	65.6	60.7	0.46
BL, LL	27.0	27.1	1.00
PNL	4.2	9.6	0.96
Presenting symptoms			
Hypopigmented patches	69.5	63.7	0.37
Nodules	3.9	8.1	0.23
Ulcers	5.4	8.1	0.39
Other symptoms	21.2	20.1	0.86
Nerve trunk enlargement			
Ulnar nerve	47.6	46	0.78
Lat popliteal N	33.0	34.1	0.88
Posterior tibial nerve	10.2	15.6	0.21
Other nerves	9.2	4.3	0.15
NFI- Motor			
Ulnar N	61.9	59.1	0.66
Lat popliteal N	9.4	18.7	0.04*
Other nerves	28.1	22.2	0.33

*Significant

The major nerve trunks involved did not vary significantly in the two periods though posterior tibial nerve was more in group II. Sensory and motor nerve function impairment did not show significant difference between the two groups.

Discussion

Integration marks a significant change in leprosy control programmes where the principle of equity, accessibility and wholistic health care becomes applicable (WHO 2006). The Government of India had gradually implemented the integration all over the country in a phased manner (Govt of India 2006). This has

resulted in greater availability and accessibility of leprosy services through the primary health centres and every general health facility. Much publicity through awareness campaigns and communication media encouraged people to seek diagnosis and care of leprosy at these primary health centres. Since, vertical surveys and other means of case detections were discontinued, the new cases could now be detected only through voluntary reporting. The findings of the present study show to what extent the expectations were fulfilled. Studies done elsewhere have reported encouraging findings as well as poor response in case detection through

voluntary reporting (Pandey et al 2006). In a study done in Indonesia by Schreuder et al (2002), the percentage of child patients showed an increase by 58% following school surveys. Similarly, a study done in Bihar showed an increase in the proportion of child cases (Vijayakumaran et al 2006). Based on the patients attending a tertiary care centre, Arora et al (2008) show several significant changes in their profiles in MDT era.

It is apparent from the results that new cases generally came late after irreversible disabilities and reactions appeared and were more of the multibacillary type. The reasons include the continuing stigma and general reluctance to admit that they have leprosy till it is far advanced (Meima et al 1999). The implications of such late reporting especially for multibacillary leprosy patients who will transmit millions of viable bacteria into the environment leading to spread of infection are only too obvious. With integration of leprosy programme into the general health services, primary diagnosis of leprosy has been transferred from the hand of trained vertical staff to general duty medical officers and paramedical workers. As the diagnosis of leprosy may not be not easy for less experienced personnel; its early detection is still more difficult, yet essential to prevent the development of deformities. Hence, the diagnosis of leprosy may be missed and delayed especially in bacilliferous MB cases, which in fact are the more epidemiologically important in transmission of disease. (Noordeen 2006, Norman et al 2006, Arora et al 2008). It is important that this aspect should be continuously monitored. As the proportion of bacteriological positive cases has not been found to change, it is positive sign of this not happening in the post-integration scenario in this population.

There are reports of drug resistances and possible relapses which require early detection and prompt management. While integration is necessary, it is also important to maintain specialized referral centres such as Karigiri and Agra where these critical events are noted and necessary actions initiated. Increase in the

proportion of cases with grade II deformities in a tertiary care centre may mean that programme is doing very well in attending early cases and only cases with more apparent and visible disease (more number of lesions, more deformities) are only going to tertiary care centre. It would be important to analyse situation in-toto for any remedial measures, if required.

Conclusion

Integration of leprosy services into the general health system appears to be doing well; however, there is a need to maintain referral chains/hospitals and periodical sample surveys to get actual status and prepare estimates through continuous monitoring of trends in different parts of the country.

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