Childhood leprosy: profiles from a leprosy referral hospital in West Bengal, India

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Monitoring childhood leprosy in terms of incidence and occurrence of deformities are crucial for better control and understanding the transmission of the disease. In this paper, a profile of all new untreated leprosy patients below 15 years of age who reported at a Leprosy Referral Centre in West Bengal during 2004-2006 are described. Of 151 children studied, 84 (55.6%) were males, 33% were multibacillary and of them, 30% were smear positive. 16% had already developed grade 2 disability (WHO). Multiple nerve involvement was seen in a quarter of children. These findings highlight the seriousness of leprosy among children and the great need to address these issues urgently. Awareness, active case detection especially among contacts and motivation are the essential needs of the hour to prevent tragedy of deformed children due to a totally manageable disease.

Keywords: Childhood leprosy, Grade 2 disability, Multiple nerve involvement

Introduction

Children are most vulnerable to get infected with M. leprae (Rao et al 1972, Kant et al 1987, Ranque et al 2007). Given the help-seeking habits in India, they are reported late under the present integrated and voluntary reporting system (Jain et al 2002). It is a tragedy for children to develop disabilities and deformity and drop out of school, and becoming a social and economic burden to the family and community (Hammond et al 1999, Kar et al 2005). Incidence of leprosy in children and proportion of children among newly detected leprosy cases are important epidemiological parameters providing an opportunity to treat effectively if reported early (Jopling et al 1985, Norman et al 2004). Monitoring childhood leprosy also provides leads to better control the transmission and assist in the eradication of the disease and its consequences. In this paper, a profile of children diagnosed with leprosy at a Leprosy Referral Hospital in West Bengal during 2004 to 2006 is given and the implications are discussed.

Materials and Methods

West Bengal state in India and Purulia district, in particular, is noted for high endemicity of leprosy.
and was selected as one of the districts for multidrug therapy (MDT) trials in 1982. The first Leprosy Mission Hospital in India was started in Purulia 1888 and now offers comprehensive leprosy services.

All new, untreated or partially treated leprosy patients below 15 years of age who registered at this hospital during 2004 to 2006 were studied. A special proforma was developed to collect demographic and clinical data from each patient. Data were obtained from Medical Records Department registration documents and supplemented with information from the patient's chart. Additional relevant data were collected from the patient's family. Standard diagnostic procedures were followed in terms of examining for active cardinal signs, body charting, motor sensory testing and slit-skin smear.

Diagnosis was confirmed by trained medical officers. Ridley-Jopling classification was used for classification of leprosy. Cases were then classified into paucibacillary (PB) / multibacillary (MB) based on WHO guidelines and treated accordingly. WHO disability grading and EHF scoring done, cases with reactions and neuritis managed with recommended doses and duration of steroids. Data were transferred to Excel spreadsheets and analysed using SPSS statistical software.

### Results

A total of 151 children below 15 years of age, 84 males and 67 females were registered for treatment of leprosy and were studied. None were below 3 years, 12 were between 3 to 5 years, 61 between 6 to 10 years and the remaining 78 between 11 to 14 years. The youngest were 2 female children, aged 3 years, both TT, classified as PB, negative BI and no disability. The parents of one child were both leprosy affected. The cases studied by age, sex and Ridley-Jopling classification of leprosy are shown in Table 1.

The sex ratio (M:F) was closer to 1:1 in the younger ages. According to the WHO classification, 67% were PB and the remaining MB in all the age-groups. The types of leprosy are more or less comparable with children and adolescents groups except pure neural leprosy among adolescents. 15 (30%) of 50 MB cases had positive BI, of which 6 (12%) had >2.00 BI. 15% already had grade 2 disability. 25% had one nerve involved, mostly ulnar. Most of the children showed good response to MDT. There were 7 children who reported with type 1 reactions and 10 had obvious neuritis; all were managed successfully with steroids adjusted for age and weight of the child, thus protected from progressive disabilities. 9 had palsy and 4 had already developed ulcers. 65 (43%) gave a family

<table>
<thead>
<tr>
<th>Leprosy Ridley-Jopling Classification</th>
<th>2-5 Years</th>
<th>6-10 Years</th>
<th>11-14 Years</th>
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<tr>
<td>Total</td>
<td>8  4</td>
<td>30  31</td>
<td>46  32</td>
<td>84 67 151</td>
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history of leprosy; it was 55% in the younger age-group.

It was surprising to see more than 5 skin lesions (nearly 40%) even in younger children. The sites of skin patches are displayed in Figure 1.

There were no nerves involved in 71 (47.7%) children and multiple nerve involvement in 39 (26%) of children studied. The sites of enlarged nerves are described in Figure 2.

Discussion
The number of untreated cases of leprosy in children reporting to a referral hospital can only be a proxy for true incidence and perhaps just the tip of an iceberg (Kaur et al 1991). It is, nevertheless, an important epidemiological parameter and also provides an opportunity to treat effectively when reported early (Selvasekar et al 1999). Several publications are available
on childhood leprosy in India and Nepal and it would be useful to detect any common trends or features (Sehgal et al 1993, Vara et al 2006, Dayal et al 2008).

Normally, children will have a low priority for voluntary reporting for leprosy care, unless there are serious consequences. School surveys and annual contact surveys during the earlier years had systematically yielded early cases of leprosy which were promptly and effectively treated (Norman et al 2004). Since India has achieved the goal of elimination of leprosy, we should now aggressively progress towards eradication by restarting once again selective leprosy screening surveys, especially in former endemic and hyperendemic areas. Many innovative cost-effective and community-based strategies can be developed instead of the former paramedical-based surveys.

If leprosy is to be transformed from a disabling disease to a simple disease with effective treatment for short durations, then it is imperative to begin such screening activities and not rely only on voluntary reporting. Given the plethora of dermatological conditions that children in developing countries manifest due to unhygienic environment and poor nutrition, leprosy can be easily ignored if not carefully assessed. This paper shows the significant number of children reporting for leprosy, fortunately a large number at an early stage, when MDT will be effective in stopping progression of the disease. At the same time, a significant number of children have already developed irreversible deformities which entails life-long care and innumerable tragedies for a growing child (Hammond and Rao 1999). Much education and motivation of the parents and care-givers seems badly needed to protect the child as well as the spread of infection through children. Capacity-building of the professional medical staff as well as the ASHA, Anganwadi and similar development workers will also help in early detection and prompt treatment. The findings reveal the multiple factors in the etiology and the range of clinical manifestations that require careful study to formulate operational guidelines to the PHC and general health staff in diagnosis and treatment of the children suffering from leprosy. The tragedy of children with deformities must be stopped; hospitals and health care institutions should take this up as a challenge under the national rural and urban health mission activities involving the ASHA, USHA, ANM and anganwadi workers.

Conclusion

Incidence of leprosy among children is quite common and serious. Almost twice frequently classified as BT/TT among older children (10-14 years) than those younger, among males more than in females. More than 60% had multiple lesions and 15% exclusively had face lesions 16.6% had ulnar nerve and 8.6% had Lateral Popliteal nerve involvement. 20 (13%) had Grade 2 disability among older children. It obvious that there may be many sources of infection and transmission of leprosy continuing at a high rate. Urgent steps must be taken to improve awareness among schools and encourage early case detection and prompt treatment with MDT. Disability is a serious issue and a tragedy requiring life-long care and should be prevented. Along with integration, some active case detection especially among household contacts must be done and necessary family counseling provided.

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References


