Indian J Lepr 2018, 90 : 95-99

http://www.ijl.org.in

Original Article

A Ten Year Study of Pediatric Leprosy Cases in a Tertiary Care Centre in South Kerala

M Philip[1], JF Samson[2], S Ebenezer[3]

Received: 30.03.2017 Accepted: 15.01.2018

Leprosy in children is a valuable marker of impact of programme. This study has been carried out to analyse the clinical and histopathological characteristics of pediatric leprosy cases attending a tertiary health care centre in South Kerala bordering Tamil Nadu. This is a retrospective, analytical study of pediatric leprosy cases seen from 01 January 2007 to 31 December 2016 in the Dermatology out-patient department of Dr. Somervell Memorial CSI Medical College, Karakonam, Trivandrum, Kerala. Seven of the 52 leprosy cases in this hospital during this study period children (age group of 6 to 14), of which 6 were females. Two cases among these were borderline lepromatous and the rest were indeterminate leprosy. Three patients had contact with lepromatous leprosy (familial). Histopathology correlated well with our clinical diagnosis. Grade 2 deformity was seen in one child, who had taken incomplete treatment earlier. While the number of cases reporting to this centre may or may not reflect true epidemiological picture at population level, data may be used to plan proper research cum intervention studies. The prevalence of childhood leprosy can be reduced if we are vigilant and improve the surveillance of contacts, as 43% of cases in this study had a contact of leprosy in the family.

Key words: Multibacillary (MB), Paucibacillary (PB), BCG scar, Kerala, Children, India

Introduction

Though leprosy has been eliminated from India in 2005, pockets of endemicity still remain. India shoulders 65% of the burden of leprosy cases world-wide accounting for a total of 1, 27, 334 cases of which 8.94% i.e., 11,389 were pediatric cases. The state of Kerala in South India with a population of approximately 34 million had a total of 704 cases of leprosy as on March, 2015 of which 5.4% ie. 40 cases belonged to the pediatric age group (NLEP 2015-2016).

Dr. SMCSI Medical College is situated on the southernmost tip of Kerala in Trivandrum district. It is a tertiary care center serving the population in South Trivandrum and neighboring Tamil Nadu. It has been reported that the percentage of pediatric leprosy cases in Kerala is comparable to the national figures (Sachdeva et al 2010). Thus this retrospective study of epidemiological, clinical and histopathological aspects of all the

[1] Dr Mariam Philip, DVD, DNB, MNAMS Professor and Head
[2] Dr Joan Felicita Samson, DNB, MNAMS, Professor
[3] Dr Susamma Ebenezer, DVD, Sr. Resident
Address: Department of Dermatology, Dr. SMCSI Medical College, Karakonam, Thiruvanthapuram- 695504, Kerala, India
Correspondence: Dr. Mariam Philip, **e-mail:** mphilipgeorge@gmail.com

pediatric leprosy cases that attended the dermatology outpatient department of Dr. SMCSI Medical College over a 10 year period may have local as well as wider relevance.

Materials and Methods

A total of fifty-two leprosy patients presented to the Dermatology OPD between 01 January 2007 to 31 December 2016, of these seven were in the pediatric age group, below 15 years of age (Fig. 1)

All cases were diagnosed based on a detailed history and clinical examination followed by skin biopsy. All registered patients received WHO MDT (Multidrug therapy) after being categorized as multibacillary (MB) or paucibacillary (PB). All our pediatric patients completed the required period of treatment successfully.

Patient data was retrieved onto a predesigned proforma with the following variables: age, sex, history of household contact, presence/absence of BCG scar, number of skin lesions, nerve involvement, clinical classification, presence of lepra reaction, slit skin smear in selected cases, histopathology in all cases.

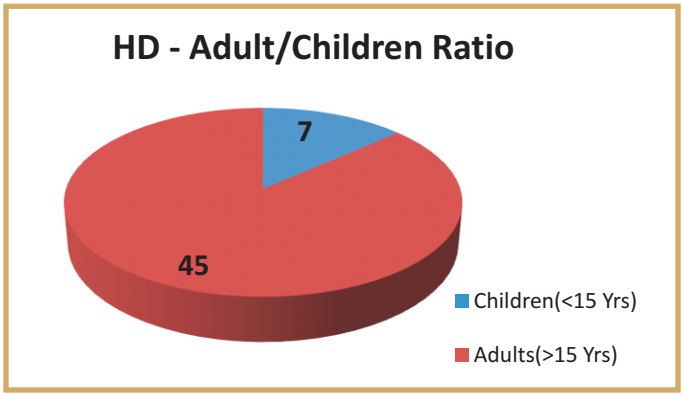

Fig 1 : Proportion of child leprosy cases in the study group

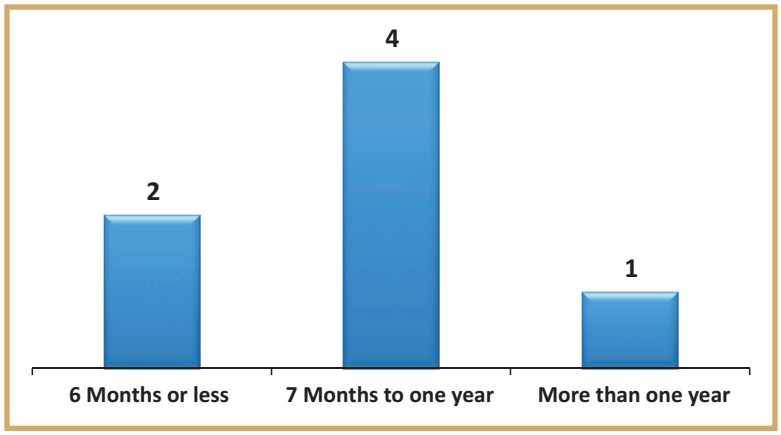

Fig 2 : Duration of disease prior to attending the clinic.

Results

In this study, there was a female preponderance in pediatric cases. The ratio of male: female was 1:6. Among adults (45 patients) there was an almost equal sex ratio (21: 24, M: F) 57% of cases (4) presented within 7 months to 1 year of symptoms and signs. 2 (29%) presented to the hospital less than 6 months of signs and symptoms. Only 1 patient presented with more than 1 year duration. (Fig. 2)

Lesions

Most cases presented with a single patch-PB (5 out of 7). ie .71%. The rest (29%) 2 out of 7 had multiple lesions-MB (Fig. 3)

Among adults 31 out of 45 (69%) were MB while 14 out of 45 (31%) were PB (Fig. 4)

Deformity

Grade 2 deformity (Rt, claw hand) was seen in only 1 case pediatric case while in adults it was 8 out of 45.

Clinico-pathological Correlation

There was clinico pathological correlation among 5 out of 7 of the pediatric cases (Table 1). The histopathological correlation of the case partially treated is not relevant as it was partially treated). Among adults there was a clinico pathological correlation among 31 out of 45 cases.

Family Contact

Family contact was seen in three out of seven ie. 43% of pediatric cases. Of these two were siblings whose contact was their grandfather, a case of LL. The third case of familial contact was the father

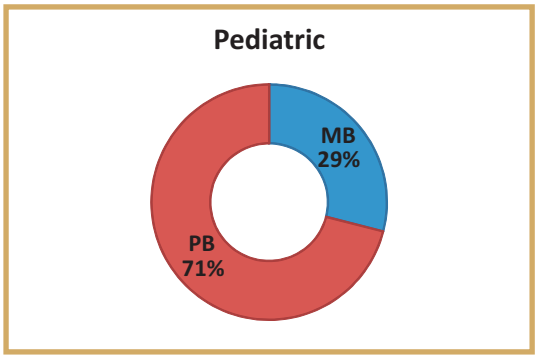

Fig 3 : Ratio of MB: PB in pediatric cases

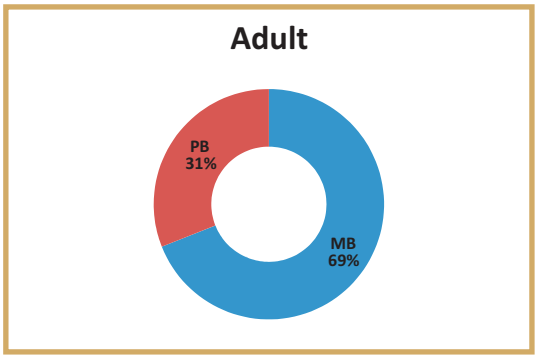

Fig 4 : Ratio of MB: PB in adult cases

Table 1: Clinicopathological correlation in pediatric cases

Serial No.	Age in yrs	Sex	Clinical diagnosis	Histopathological diagnosis	Cinico-pathological Correlation
1.	13	Female	BL	Indeterminate	Nil (partially treated)
2.	7	Female	Indeterminate	Indeterminate	Yes
3.	8	Male	Indeterminate	Indeterminate	Yes
4.	9	Female	Indeterminate	Indeterminate	Yes
5.	11	Female	BL	BL	Yes
6.	14	Female	Indeterminate	BT	Nil
7,	6	Female	Indeterminate	Indeterminate	Yes

who was a case of LL. Among the adults five out of forty five had family contacts.

BCG scar was present in four children.

Discussion

Pediatric leprosy cases in our study (13.5%) is much higher than in the study conducted by Sachdeva et al on childhood leprosy which was 5.1% (Sachdeva et al 2010). Our results are in concordance with a study in South India by Chaitra and Bhat (2013) (12.86%) and it is more than in the study by Palit and Inamdar (2014) (5.1-11.43%).

Our study is unique in that in these childhood cases females outnumbered males (ratio of 6:1). A literature search has revealed a male preponderance in all other studies in India (NLEP 2015-16, Sachdeva et al 2010 and Chaitra and Bhat, 2013). Most of our patients presented within one year of onset of signs and symptoms. Kerala is privileged to have one of the highest literacy rates in India. Majority of the child cases were brought to hospital in 7-12 months after signs were noted, most being treated initially as Pityriasis Alba elsewhere. Another very notable feature is its healthy male to female ratio and the equal importance given to the female child in a family. This could account for the unique preponderance of female patients in our study.

Health care in Kerala compares with the best in India. Most parents notably the mothers are educated and therefore seek medical attention for their children early during the disease.

Our youngest patient was 6 years old and the oldest was 14 years old. This relative older age of onset could be because of the long incubation period of the disease. There has been a report of a case occurring as young as 3 weeks of age (Montestruc and Berdonneau 1954). Chaitra and Bhat (2013) has reported the youngest leprosy case at 3 years of age.

Majority of cases presented with single lesions (five out of seven patients) and were paucibacillary. Single patch presentation was the commonest sign which is similar to other studies.

A high degree of knowledge of the disease among the public and early detection could be the reason for the higher number of paucibacillary cases. Studies by Chaitra & Bhat (2013) and Sachdeva et al (2010) showed paucibacillary predominance. The study by Palit and Inamadar (2014), however, had 60 to 65% of multibacillary cases and Jain et al had 95.8% of multibacillary cases (Jain et al 2014) in their study groups.

There was only one case of grade 2 deformity which presented as such at the time of diagnosis itself and the patient was partially treated elsewhere (Singal et al 2011 and Selvasekar et al 1999).

The proportion of intra familial contacts was high in concordance with other studies (Jain et al 2002). All the contacts were multibacillary cases (BL or LL). The risk of a person developing leprosy is four times higher with extra familial contact and nine times higher with intrafamilial contact (Van Beers et al 1999). This emphasizes the need for periodic screening of household contacts of leprosy patients especially children.

None of our patients developed neuritis during the course of treatment. Most studies have shown a lesser incidence of lepra reactions in children.

Clinico-histopathological correlation was seen in all but one of child patients seen exclusively by us. Another case which was partially treated elsewhere also did not show clinico histopathological correlation.

BCG scar was present in four patients. It is notable that even a case of BL had a BCG scar. Though previous studies have proved BCG vaccine to have a protective effect in leprosy especially the more serious forms of leprosy and even more in the early decades after vaccination. (Merle et al 2010, Behr et al 1999, Zodpey et al 1999, Zodpey et al

2005 and Rodrigues et al 2007). Our study shows that the effect of BCG will be partial only.

Conclusion

Our study showed a higher proportion of childhood leprosy than the national or state values. Childhood leprosy denotes active horizontal transmission. Our only patient with grade 2 deformity is unfortunate in that she was the only child who presented more than 1 year after symptom and was partially treated elsewhere. 43% of child cases having intrafamilial contacts emphasizes the need for proper screening of all contacts of leprosy, especially multibacillary cases. Leprosy can also masquerade as the common pityriasis alba and nutritional dyschromias. A high degree of suspicion should be maintained for hypopigmented macules which do not resolve with conventional treatment.

As the number of cases reporting to our tertiary care centre is small it may not represent the situation at field level. Based on trends observed, it will be appropriate to plan proper research cum action studies in the population.

References

1. Behr MA, Wilson MA, Gill WP et al (1999). Comparative genomics of BCG vaccines by whole-genome DNA microarray. *Science*. **284**: 1520-3.
2. Chaitra P, Bhat RM (2013). Post-elimination Status of Childhood Leprosy: Report from a Tertiary-Care Hospital in South India. *Bio Med Res Intern.* 328673, 4 pages. (http://dx.doi.org/10.1155/2013/328673).
3. Jain M, Nayak CS, Chokkar R, Aderao R (2014). Clinical, bacteriological and histopathological characteristics of children with leprosy: A retrospective, analytical study in dermatology outpatient department of tertiary care centre. *Indian J Paediatr Dermatol*. **15**: 16-19.
4. Jain S, Reddy RG, Osmani SN et al (2002). Childhood leprosy in an urban clinic, Hyderabad, India: clinical presentation and the role of household contacts. *Lepr Rev*. **73**: 248-253.
5. Merle CS, Cunha SS, Rodrigues LC (2010). BCG vaccination and leprosy protection: review of current evidence and status of BCG in leprosy control. *Expert Rev Vaccines*. **9**: 209-22.
6. Montestruc E, Berdonneau R (1954). 2 new cases of leprosy in infants in Martinique. *Bulletin de la Société de PathologieExotique et de ses Filiales*. **47**: 781-783.
7. NLEP - Progress Report for the year 2015-2016. Directorate General of Health Services, Nirman Bhavan, New Delhi 2017.
8. Palit A and Inamadar AC (2014). Childhood leprosy in India over the past two decades. *Lepr Rev*. **85**: 93-9.
9. Rodrigues LC, Kerr-Pontes LR, Frietas MV, Barreto ML (2007). Long lasting BCG protection against leprosy. *Vaccine.* **25**: 6842-4.
10. Sachdeva S, Amin SS, Khan Z et al (2010). Childhood leprosy: A retrospective study. *J Public Health Epidemiol.* **2**: 267-71.
11. Selvasekar A, Geetha J, Nisha K et al (1999). Childhood leprosy in an endemic area. *Lepr Rev*. **70**: 21-27.
12. Singal A, Sonthalia S, Pandhi D (2011). Childhood leprosy in a tertiary-care hospital in Delhi, India: a reappraisal in the post-elimination era. *Lepr Rev*. **82**: 259-269.
13. Van Beers SM, Hatta M, Klatser PR (1999). Patient contact is the major determinant in incident leprosy: implications for future control. *Int J Lepr Other Mycobact Dis.* **67**: 119-128.
14. Zodpey SP, Bansod BS, Shrikhande SN et al (1999). Protective effect of Bacillus Calmette Guerin (BCG) against leprosy: a population-based case-control study in Nagpur, India. *Lepr Rev.* 70: 287-94.
15. Zodpey SP, Ambadekar NN, Thakur A (2005). Effectiveness of Bacillus Calmette Guerin (BCG) vaccination in the prevention of leprosy: a population-based case-control study in Yavatmal District, India. *Public Health*. **119**: 209-16.

How to cite this article : Philip M, Samson JF and Ebenezer S (2018). A Ten Year Study of Pediatric Leprosy Cases in a Tertiary Care Centre in South Kerala. *Indian J Lepr.* **90** : 95-99.