EPIDEMIOLOGICAL AND CLINICAL STUDY OF CHILDHOOD HANSENS IN A TERTIARY CARE HOSPITAL

Shahana Mohammed¹, Mahaboob Khan P², Padma Aakurati³, Udaya Kumar B⁴

HOW TO CITE THIS ARTICLE:

Shahana Mohammed, Mahaboob Khan P, Padma Aakurati, Udaya Kumar B. "Epidemiological and Clinical Study of Childhood Hansens in a Tertiary Care Hospital". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 84, October 19; Page: 14716-14720, DOI: 10.14260/jemds/2015/2092

ABSTRACT: Introduction: Leprosy (Hansens) is one of the major health problem in the developing countries. Sixty percent of the world leprosy cases are in India. According to the 2006 census India has about 54% of the total new cases detected globally. The National Leprosy Elimination Programme in 2012 has reported 9.7% of childhood leprosy. There are only few studies related to paediatric leprosy. **AIM:** To study the epidemiology and various clinical presentations of leprosy in the paediatric age group. **MATERIAL AND METHODS:** A 4year prospective study was done in the out-patient department of dermatology in a tertiary care hospital. All the patients were screened for leprosy and children with a confirmed diagnosis of leprosy were taken up for the study. **RESULTS:** Total of 321cases of Hansens were recorded during this period out of which 41 were children. The male to female ratio was 2.72:1. A positive family history was found in 18%. Most of them presented with single hypopigmented hypoanesthetic patch. **CONCLUSION:** Children presented with more of Borderline tuberculoid type and reactions or deformities were less common.

KEYWORDS: Leprosy, Hansens, Hypoaneasthetic patch, Reactions.

INTRODUCTION: Leprosy is an age old disease of mankind. The causative agent is Mycobacterium leprae, a gram positive rod shaped bacteria. This bacilli was first discovered by Armauer Hansen in 1873 in Norway hence is also known as Hansens disease. It cannot be cultured in artificial media and transmission is mostly by aerosol.

A case of leprosy is defined as a person with features of single or multiple hypo-pigmented or erythematous or xerotic patch with loss or decreased sensation associated with thickening of peripheral nerves. Slit skin smear positive for acid fast bacilli.^[1]

The treatment is for 6months in paucibacillary cases (PBMDT) and 1year (MBMDT) in multibacillary patients.

Leprosy not only affects the rural population but cases are also observed in the urban people.^[2] The distribution of this disease is very unpredictable as it shows clustering in countries, communities such as villages and even the family groups.^[3]

A geographical variation in the incidence of the disease among the younger age group reflects the trend of infection.^[4] Prevalence of leprosy in children indicates recent infection and indirectly reflects the transmission rate.

India is in the early elimination phase and contributes 55% of total globally detected new cases.^[5] According to the National Leprosy Programme 2013, children constituted 9.93% of new cases of Hansens.^[6] In our study 12.77% were children whereas it was 7.71% in a study by Sardana.^[7]

Leprosy is rarely seen in infants due its very long incubation period.^[8] Childhood leprosy differs in various features from that of adult leprosy. There is less information regarding clinical, bacteriological and histopathological charecteristics of paediatric leprosy.

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Early detection of leprosy in children is difficult as sensations are not well appreciated by them and it mimics other skin disorders. As mostly it presents as a single hypopigmented or xerotic patch, it poses a diagnostic difficulty. But early diagnosis and treatment of childhood leprosy is essential to prevent deformities and spread within the community.

MATERIALS AND METHODS: A prospective study aimed at the various clinical presentations and epidemiological pattern of childhood leprosy was done from Jan 2011 –Dec 2014, in a tertiary care hospital. Children who have come to dermatology O.P.D and as well as referrals from other practitioners suspicious of leprosy were considered in this study.

All the children were clinically well examined (other dermatological disorders being ruled out), slit skin smear was done and diagnosis confirmed by bacteriological and histopathological (skin biopsy) examinations. Paediatric age group (<18years) of both sex were included in this study.

Based on the IAL classification they were categorized as paucibacillary when there is single peripheral nerve involvement with skin lesions < 5 and multibacillary when lesions are >5 in number with > 1 nerve affected.^[9,10] All slit skin smear positive cases were considered as multibacillary.

RESULTS: A total of 321 cases were detected during our study period from Jan 2011 to Dec 2014. Total of 41 cases of children with leprosy were detected. There were 30 male and 11 female children, the ratio being 2.72:1 indicating a male preponderance. Average duration of symptoms was about 6m -1year and most of them presented with borderline tuberculoid variant type of leprosy. A positive family history of contact was found in about 6 cases (18%).

CLINICAL PRESENTATION: Most of the children presented with a single hypopigmented hypoanaesthetic patch with multiple (59.38%) nerve involvement. Reactions were less in this age group. Only one child presented with type 1 reaction and a single case of deformity was recorded.

Bacteriological and Histopathological Findings: On examination of slit skin smear for bacilli, it was noted that only one case was bacteriologically positive. And all the other PB and MB cases were smear negative.

Out of the 41 cases diagnosed majority (33, 80.49%) of the children showed histopathological features consistent with borderline tuberculoid (BT) variant of leprosy. And five had features of borderline (BL) type and only three cases had lepromatous leprosy (LL).

None of the children presented with tuberculoid (TT) or indeterminate variants. In our study we did not detect any case of pure neural leprosy and type 2 reaction.

History of contact was found in three children among them two had contact with leprosy patients in their own family.

DISCUSSION: Leprosy is a chronic infection with a lot of social stigma and is a burden among society. Incidence of childhood leprosy indirectly reflects the disease transmission rate in the community. Children have a very high risk of developing leprosy if there is a close contact with a leprosy patient as they will be in close proximity with them.^[11]

Difficulty in diagnosis is one of the common causes, as there are numerous more common skin disorders presenting with hypo-pigmented patches in children.^[12] And the duration of presentation being about 1year could be because of delay and difficulty in clinical diagnosis.

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A high male to female ratio with borderline tuberculoid (BT 75%) variant being common type of childhood leprosy in our study is similar to the findings of other paediatric hansens study.^[13] Multibacillary cases were six which are infectious and contribute to disease transmission. Only one child had deformity indicating that most cases were detected early.

Reactions and deformities were less common. A single case of type 1 reaction in borderline lepromatous type (BL) and a single case of deformity in lepromatous leprosy (LL) was recorded.

CONCLUSIONS: In our study out of the total cases of leprosy childhood leprosy was 12.77%.

The early detection of leprosy in children is necessary as it indicates burden of the disease. Early diagnosis and treatment in this age group is necessary to control the transmission rate. And the deformities which may persist lifelong may be prevented.^[14] Two retrospective studies done in Hyderabad and Surat of India has noted that new case detection rate has been declined but the prevalence was high.^[13,15]

A retrospective study done between 2000 and 2009 in a tertiary hospital detected 5.1% of childhood leprosy cases.^[16] The high incidence of childhood leprosy among the newly detected cases indicates the active transmission of the disease in a community. Our study highlights the importance of early case detection by clinical diagnosis, confirmed by smear and histopathological examination followed by treatment. Thus preventing the spread and also complications of the disease.

Fig. 1: Type 1 Reaction in BT hansens-large erythematous plaque on the back

Fig. 2: Case of LL hansens-Lepromatous nodules on the nose

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Fig. 3: Slit skin smear positive-multiple gram positive bacilli

Type of Hansen's	No. of cases (%)
BT	31(75.61%)
BL	06(14.63%)
LL	04(9.75%)

Table showing number of children with the clinical pattern of leprosy

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AUTHORS:

1. Shahana Mohammed
2. Mahaboob Khan P.
3. Padma Aakurati
4. Udaya Kumar B.

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of DVL, Gandhi Medical College and Hospital, Secunderabad.
2. Associate Professor, Department of Pulmonology, Gandhi Medical College and Hospital, Secunderabad.
3. Assistant Professor, Department of DVL, Gandhi Medical College and Hospital, Secunderabad.

FINANCIAL OR OTHER

COMPETING INTERESTS: None

4. Professor and Head, Department of DVL, Gandhi Medical College and Hospital, Secunderabad.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Shahana Mohammed,
House No. B-32, 1-8-450/1,
Indian Airlines Colony, Begumpet,
Secunderabad, India.
E-mail: drshahena@gmail.com

Date of Submission: 29/09/2015.
Date of Peer Review: 30/09/2015.
Date of Acceptance: 10/10/2015.
Date of Publishing: 19/10/2015.