LEPROSY AMONG CHILDREN IN AN ENDEMIC AREA

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ABSTRACT

A retrospective analysis of leprosy in children at the Ghindeberet Hospital, from April 1964 to April 1981, is presented. There was a total of 103 patients. The disease was rare among the under five children (0.97%) and commonest in the 10 - 14 ages group (80.6%). There was no significant difference in sex ratio. Tuberculoid leprosy was the commonest type (53.4%). Family history of leprosy was not found in 48.6% of which 46.3% were defaulters. It is assumed that the presence of the disease in the family or knowledge of the disease could decrease the rate of defaulters. Finally, the search for the disease at school and community health surveys and regular check up of children at risk are stressed.

INTRODUCTION

The epidemiology of leprosy varies in different countries depending upon the genetic makeup, social customs, climate etc.. The epidemiology of leprosy, in particular among children, is not well known in Ethiopia. The disease is more widespread than is commonly realized (I). Moreover, with the increase in population, difficulty of controlling the disease and failure of early detection the figure is likely to be increasing. The total number of registered cases in 1987 was about 5,100,000 in the world (2). In general, as the epidemiology of leprosy is still not fully understood (3), it is important to make every attempt to expose the unknown. This report attempts to throw some light on the epidemiology of leprosy among children in an endemic area.

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MATERIALS AND METHODS

The study was based on a retrospective review of leprosy patient's charts registered at the Ghindeberet Hospital from April 1964 to April 1981. 103 patients under the age of 15 were included in the study. Fourteen of them were interviewed at the leprosy clinic. Classification of leprosy in this study followed the standard method used (4). Patients were considered defaulters if they were absent from the hospital to draw their drugs for over three months.

RESULTS

There was a total of 103 patients (49 males and 54 females). The age range was 2.5 to 14 years, with a mean of 11.3 years, and the mode being 12 years. The mean ages for males and females were 11.2 and 11.4 respectively.

Table 1 shows the age group and sex distribution. The majority lie in the age group 10 to 14 (80.58%). It appears to be rare among children under the age of five (0.97%). The smallest age recorded was 2.5.

TABLE 1

Age group and sex distribution,
Ghindebert Hospital,1964-1981

Age Group	Male		Female		Total	
	No	%	No	%	No.	%
< 5	-	-	1	0.97	1	0.97
5 - 9	10	9.71	9	8.74	19	18.45
10 - 14	39	37.86	44	42.72	83	80.58
Total	49	47.57	54	52.43	103	100

As shown in **Table 2** tuberculoid leprosy was the commonest type in all the age groups except the one case in the under-five group (0.97%). Borderline leprosy appears to be commoner among females (12.6%) than among males (6.8%). In none of them was physical crippling documented.

TABLE 2

Distribution of classes of Leprosy,
Ghindeberet Hospital, 1964-1981.

Age Group	Tuberculoid				Borderline				Lepromatous				Total	
	Male		Female		Male		Female		Male		Female			
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
< 4	-	-	-	-	-	-	1	0.97	-	-	-	-	1	0.97
5-9	7	6.80	4	3.88	2	1.94	3	2.92	1	0.97	2	1.94	19	18.45
10-14	20	19.42	24	23.30	5	4.85	9	8.74	14	13.59	11	10.68	83	80.58
Total	27	26.22	28	27.18	7	6.79	13	12.63	15	14.56	13	12.62	103	100.00

Family history of leprosy was found in 48.6%, however, the type of leprosy was not known (**Table 3**). The index cases were father, mother, brother, sister, uncle and aunt. In 18.5%, there was no family history, and in 33%, no data on family history could be found.

TABLE 3

Family history of leprosy,
Ghindeberet Hospital, 1964-1981.

Age Group	F.H.		N.F.H		U.K		Total	
	No	%	No	%	No	%	No	%
< 4	1	0.97	-	-	-	-	1	0.97
5 - 9	9	8.75	5	4.85	5	4.85	19	18.45
10-14	40	38.83	14	13.59	29	28.18	83	80.58
Total	50	48.55	19	18.44	34	33.01	103	100

F.H.= Family history,
N.F.H = No family history,
U.K = family history was unknown.

Table 4 shows the rate of clinic attendance. Those who were advised to stop their treatment or referred to another health institution were considered as regular attendants. More than half of them were defaulters, 13.6% of which were after 1976 when the drug supply at the **market** places was discontinued.

TABLE 4

Rate of Clinic Attendance,
Ghindeberet Hospital, 1964-1981.

Age Group	TR*		Def**		Total	
	No	%	No	%	No	%
< 4	-	-	1	0.97	1	0.97
5 - 9	11	10.68	8	7.77	19	18.45
10 -14	33	32.04	50	48.54	83	80.58
Total	44	42.72	59	57.28	103	100

* TR = Continued treatment, ** Def = defaulters

Among the defaulters, 46.3% of the children had family history of the disease, and 67.9% had no family history or unknown were defaulters (**Table 5,6**).

TABLE 5

Relationship between family history and clinic Attendance Ghindeberet Hospital, 1964-1981.

Age Group	TR		Def		Total	
	No	%	No	%	No	%
< 4	-	-	1	2.00	1	2.00
5 - 9	7	14.00	2	4.00	9	18.00
10 -14	20	40.00	20	40.00	40	80.00
Total	27	54.00	23	46.00	50	100.00

TABLE 6

Relation of clinic attendance with no or unknown Family history Ghindeberet Hospital, 1964-1981.

Age Group	TR		Def		Total	
	No	%	No	%	No	%
< 4	-	-	-	-	-	-
5 - 9	6	11.32	4	7.55	10	18.87
10 - 14	11	20.75	32	60.38	43	81.13
Total	17	30.07	36	67.93	53	100.00

On the other hand, 30.1% did not have family history or unknown were regular attendants.

DISCUSSION

At present the number of estimated leprosy cases is 120,000,that is, a prevalence rate of 4/100 (5). In 1981, there were 381 registered leprosy patients at Ghindeberet Hospital leprosy clinic, among which 14 were under the age of 15 years, and at least three new cases are registered every three months.

Leprosy can occur at any age and it has been stated that it seems probable that all ages are more or less equally susceptible (6). Where children were kept with their infected parents, the incidence at less than one year was less than 0.5% (7). Since congenital leprosy is unknown, and since the silent period between the infective contact and the appearance of recognizable and pathognomonic signs is commonly between two and five years, leprosy is rarely diagnosed before the second birthday (8). In this series, the smallest age was 2.5 years. On the other hand, acid-fast mycobacterium from human lepromatous leprosy has been isolated in tissue culture of the dorsal root ganglia from human fetus (9).

In adults, the sex ratio in all forms of leprosy is more among the males (3,6,9), but among, children, no significant sex prepondence was noted (3,6). Moreover, practically no difference in sex prevalence was noted when the opportunity for contact for the two sexes was the same (9) as the case is likely to be the same in children living in an endemic area. In this study, as well, there was no significant difference in sex prevalence.

Similar to other reports (3,6) tuberculoid leprosy appeared in higher proportion than other types. The occurrence of lepromatous leprosy in both sexes did not significantly vary, in contrast to the view that in most races, males have a higher lepromatous: tuberculoid ratio (6) In this study, border line leprosy occurred more among females than in males.

In Tigrai Administrative Region school health survey, all the children with leprosy had family contact (I) but about half in this report; however, it is pertinent to recall that in an endemic area, the chance of contact outside the family is also high. Moreover, as the community experience with leprosy progresses, the immunity to M. leprea achieves such a level that predominantly that segment with low potential for resistance is in a position to contract the disease; furthermore, children constantly being born into the community, remain a constant fresh source of individuals with a high proportion of low resistance (10). In general, the interpretation of the result of household contact studies is complicated since the contact may be related genetically, and thus a high disease risk may indicate contact, a shared environment, or a genetically determined susceptibility (11).

One of the major problem in the management of chronic diseases among children is the failure of compliance. In this study, 57.28% were defaulters, and the main problems appear to be lack of transportation, and absence of knowledge about their disease in the family and the discontinuation of drug supply at the market places.

Finally, to achieve the goal of controlling leprosy in Ethiopia, it is of paramount importance to detect the disease early among children at school and community health surveys. Although there is no way of telling a carrier state in leprosy, interval checkup of children at risk is very important. It has been stressed that every body concerned with the problem, governments and voluntary agencies, has an inescapable obligation not only to apply existing knowledge, but also to prosecute research into all aspects of therapy, and into all aspects of prevention of a disease that is still one of the major scourges of mankind (12).

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