PRELIMINARY OBSERVATIONS ON CHILDHOOD LEPROSY IN CEYLON.[1]

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The article by Doull, Rodriguez et als in a recent number of The International Journal of Leprosy (2), reporting on a survey made in Cebu, in the Philippines, was of special interest to us because, during the latter part of 1935, we had the opportunity of following up a previous survey (1933) in Ceylon and of making observations along similar lines. While our work could not, in the nature of things, be as exhaustive as that done in Cebu, we hope that the preliminary observations here reported may result in arousing further interest in this most important aspect of the problem. In this report we shall confine our observations to the development of the disease as seen in the children examined in the survey of 1933 and in the recent one.

Sex distribution.—The sex distribution of all the patients examined is shown in Table 1. On the whole, we consider that the figures there shown are in agreement with the observations of Doull et als and other writers that the sex incidence in children is about equal. Our figures show an apparent greater frequency in boys (a difference of 16 percent of the total), but this we believe is explained by the fact that, whereas in the examinations the boys were stripped to the waist with their shirts or sarongs so arranged that the buttocks could be inspected, the girls only allowed us to see their arms and legs, and in many only the lower part of the leg, so the examinations were inadequate. On examining the figures for children in the 0–12 age group, in which the girls are as easy to examine as the boys, there was much less difference between the sexes—only 2 percent. However, it may be that some

[1]The figures given in this paper have been compiled from a recent report submitted to the Government of Ceylon, and we acknowledge the courtesy of the Director of Medical and Sanitary Services for permission to publish them.

factor causing a discrepancy in the sex incidence operates after the age of thirteen. We consider that not only increased chance of exposure, but a greater likelihood of the general health being broken down in the male than in the female, owing to the harder conditions to which the male is exposed and the greater risk of acquiring chronic disease, such as syphilis etc., are possible reasons for the very general discrepancy in the sex incidence in adults.

TABLE 1.—*Sex distribution of patients examined.*

Group	Males		Females	
	Number	Percent	Number	Percent
Children (0-18)	161	58	118	42
Adults, not isolated	—	70	—	30
Isolated cases	—	77	—	22

Age distribution.—The ages of the 279 children with leprosy examined in December, 1935 were: 0 to 12 years, 198, and 13–18 years, 81; the percentages are 71 and 29, respectively. The age groups here given were selected because the majority of lesions were discovered in school children under thirteen. Further, it is difficult to be certain of ages after puberty has been reached, and any history as to length of time the disease has existed is very likely to be quite inaccurate. Statistics concerning the age of onset are liable to be vitiated by these factors.

The interestingly high percentage of children under thirteen prompts the question as to what happens to these children later. If their lesions continued to progress one would expect to find as many children with lesions among those over thirteen years old as among those who are younger. Two explanations may be advanced. (*a*) If the patches should become more prominent, there would be a tendency to withhold the children from school, and therefore they would not be seen. (*b*) In a large number of cases the patches may clear up, and therefore by the time these children reach the older age group they may no longer show evidence of the disease.

We think the second explanation is the more probable one. If any great number of cases were to pass to the more advanced stages, they would in all probability be discovered. We are aware that children leave school early, and that a lesion may flare up in later life. Both causes therefore may operate, but the discrepancy is so great that we can only conclude that there is evidence to indicate that many early lesions disappear before adult life is reached. We cannot accept

the hypothesis that this discrepancy in incidence indicates that leprosy is a potent factor in shortening the span of life. Admittedly, cutaneous leprosy does shorten life, but as will be shown later in our figures such cases represent a comparatively small percentage of the total suffering from leprosy among the population dealt with in Ceylon.

The youngest child with leprosy seen by us (S. de S. and A. F.) was two years old, although one of us reported some years ago a lesion in a child of six months (1), and Neff has reported infection in a child of fourteen months (3).

Type of disease.—Analysis of our data with regard to the type of the disease in the different age groups gave the figures shown in Table 2.

TABLE 2.—*Type of the disease in relation to age, in percentages.*

Age	Type of disease		
	Neural		Cutaneous
	N1	N2, N3	C1, C2, C3
0-12 years	81.0	18.0	0.9
13-18 years	60.7	21.1	15.2
Over 18 years	32.2	54.3	22.5

It is interesting to note that the proportions of more advanced and serious cases rise considerably as adult life is reached. We may be justified in assuming that the N2 cases in the first and second columns become C cases of the next age groups. That is, the 18 percent in the advanced N group of younger children become the 15.2 percent in the C group of older children, and the 21.1 percent in the advanced N group of older children become the 22.5 percent in the C group of adults. The discrepancy of 2.8 percent and 1.6 percent respectively would represent N2 cases that become arrested without passing into the cutaneous stage.

This is an attractive hypothesis to one of us (R. G. C.), because it is held that, in a large number of instances, inactive N1 cases in children tend to remain stationary or to clear up. In order to determine the probability of this as large a number of children as possible of those seen in 1933 were re-examined in 1935. The results are shown in Table 3.

The results of this analysis, we believe, give support to the hypothesis that many children with early lesions of leprosy do not pass on to the more advanced stages, but that their lesions remain inactive or disappear completely before adult life is reached. No general

conclusions can be drawn however, for the period over which the observation was made was too short and the number of cases too small.

The following further observations may be of interest. Of the total of 41 children that had improved or remained stationary, only four were N2 cases; the rest were all N1. Only 10 had a close relative (father, mother, brother or sister) as contact, and in every instance the relative had been segregated. Three of these 41 children had a remote relative as a contact; the remaining 28 had no history of immediate contact.

TABLE 3.—*Status of children re-examined in 1935.*

Cases	Number	Percent
Total re-examined	61	100
Macules improved or stationary	33	54
Macules greatly improved or disappeared	8	13
Macules progressed	11	18
No change determined (interval too short or original diagnosis questioned)	9	15

Of the seven N1 cases which had become worse, five had passed into the N2 stage. In two instances the explanation was apparently ill health or poor general condition. Two of the children had had more than one close relative with leprosy. Of the remaining two N1 cases that became worse, one had a history of a remote relative (uncle) having the disease. The other only shows one small fresh lesion; there was no history of contact in this case.

With regard to the four N2 cases which became worse, in one there was a history of two close relatives as contacts, and in another one the father was an unsegregated cutaneous case; in the fourth case there was no apparent explanation of the progress of the disease.

Treatment in all but two of the cases that became worse had been nil or inadequate. One of the two exceptional cases had advanced from an N1 stage to N2, while the other one was N2 at first and became worse. Of the 41 cases in which the lesions remained stationary or healed, only two had had regular treatment and in those the dosages were very small (2 cc.); the rest had had no treatment or it had been inadequate or irregular. While no conclusions can be drawn with regard to the cases which have become worse, it is significant that as many as forty-one cases have remained stationary or have improved in some degree—even to the disappearance of lesions—with very little

or no treatment. This suggests that treatment plays little part in preventing a child from passing into the more advanced stages.

Though the number of cases dealt with is too small to be significant, it is nevertheless interesting to note that all but two of the cases which became worse had either a history of close contact with one or more infectious cases, or were in a poor state of general health. This affords support to the assumption that there is some danger to children if they are exposed to repeated massive infections, or to bad economic conditions. While the occurrence of superinfection is extremely difficult to prove, yet the facts derived from the study of these few cases strengthen our opinion that it may be unwise for children who show very early, inactive or mildly active lesions to be in close contact with open cases. Once a child shows signs of having a massive infection which is active, whether it be neural or cutaneous, it is a debatable point whether it matters a great deal if the child is placed among open cases.

One of us (R. G. C.) has adopted the practice of not administering the special antileprosy remedies to very early neural cases, and a report of the progress of these cases will be published after a sufficient period has elapsed. It is suggested that it is more important to improve the economic conditions under which children live, and their general health, than to treat them with the hydnocarpus drugs. In view of the difficulties of treating leprosy cases as outpatients, it is suggested that it may be necessary to take special measures with active neural cases among children, in which there is danger of the disease progressing. It may be best to organize special institutions for their care, because their chances of recovery appear to be particularly poor unless the economic conditions under which they live and their general health are such that their vitality is not continually sapped.

Because of lack of time when this inquiry was made, such factors as the economic conditions, housing, diet, etc., of the patients could not be investigated. Studies of that nature will be made as the work develops. The points raised in the present report we believe to be of interest, and we hope that they will be taken up by others.

REFERENCES

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