

AGE-AT-ONSET OF LEPROSY

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In a retrospective analysis of 971 leprosy patients, the mean age at onset of the disease is recorded to be 24.1 years. Sex had no influence on the age-at-onset of leprosy. However, a statistically significant variation was noted between the type of leprosy and the age-at-onset, it was the lowest (19.2 years) in indeterminate and highest (31.08 years) in neuritic leprosy. Our observations lend support to the prevailing concept that the age-at-onset of leprosy not only varies from one country to another but also in different parts of the same country.

Key words : Age-at-onset, Leprosy, Factors influencing, Regional variation.

In a multisystemic disease like leprosy where the clinical lesions are pleomorphic and the incubation period is prolonged, it is not a simple task to establish accurately the age-at-onset of the disease. Nevertheless, such a study is important epidemiologically to identify the susceptible age groups. No doubt, it is widely believed that leprosy is usually contracted at an early age, yet, remarkable variations have been observed in the age-at-onset of leprosy from different parts of the world.^{1,2} This problem has received the attention of a few Indian workers³⁻¹⁰ also, but the information is largely absent from many parts of the country.

Materials and Methods

A retrospective analysis of 971 consecutive leprosy patients registered in our Urban Leprosy Centre constituted the subject material for this study. The case histories of these patients with their diagnosis based on a detail history, clinical examination and relevant investigations were carefully studied. The age-at-onset of leprosy was calculated by the recall method, i.e. by subtracting the duration of initial lesion as recapitulated by the patient from his chronologic age at the time of examination. The data was processed for statistical analysis. The results

arrived at were compared with similar reports available from different parts of the country and abroad.

Results

Altogether, the 971 leprosy patients included 560 males and 411 females. Majority (60.1%) had the age-at-onset between 0-39 years, although the peak incidence (27.4%) was noted in the age group of 20-29 years (Table 1). The lowest and highest age-at-onset recorded were 2½ years and 72 years respectively. The mean age-at-onset of leprosy in both the sexes was 24.1 years. In males it was 24.8 years and in females 23.04 years, but this difference was statistically not significant. The type of leprosy and the age-at-onset are given in fig. 1. The mean age-at-onset

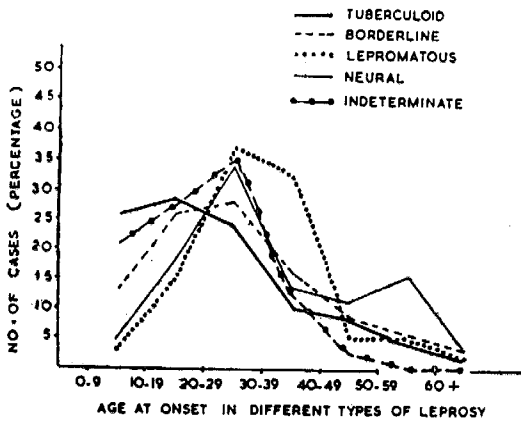
Table I. Sex-wise distribution of age-at-onset in leprosy.

Age at onset in years	Number (percent) of patients		
	Males	Females	Total
0-9	74 (13.2)	91 (22.1)	165 (17.0)
10-19	140 (25.0)	109 (26.5)	249 (25.7)
20-29	178 (31.8)	88 (21.4)	266 (27.4)
30-39	87 (15.5)	54 (13.1)	141 (14.5)
40-49	42 (7.5)	37 (9.0)	79 (8.1)
50-59	25 (4.5)	25 (6.1)	50 (5.2)
60-69	11 (2.0)	7 (1.7)	18 (1.8)
70-79	3 (0.5)	—	3 (0.3)
Total	560	411	971
Mean ± S.D.	24.8 ± 14.4	23.04 ± 15.64	24.1 ± 14.97

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of leprosy was lowest (19.2 years) in indeterminate and highest (31.08 years) in neuritic, followed by lepromatous (28.74 years). This variation was statistically significant. Further, although the highest incidence of age-at-onset in all types of leprosy was noted between 20-29 years, there was another spike in the neuritic group between 50-59 years (Fig. 1).



Comments

The age-at-onset did not show much variation between the two sexes in our series, suggesting that sex has no influence over it as presumed by earlier workers.³⁻⁹ Further, it is obvious in our study that there is a significant difference between the age-at-onset and the type of leprosy. The mean age-at-onset was noted to be the

earliest in indeterminate and much later in neuritic and lepromatous groups. This confirms the pattern of leprosy seen in clinical practice also. Similar observations were noted by Kumar et al,⁶ although Sehgal *et al*⁹ noted the delayed onset in lepromatous group only. The data presented in our communication is in broad agreement with previous studies (Table II), yet, there are some variations that deserve special attention. The mean age-at-onset in our series was observed to vary between 0-39 years in majority of the patients. While this is the case with Mohamed Ali from Chengalpattu, the studies from Lucknow,⁴ Varanasi⁵⁻⁸ and New Delhi⁹⁻¹⁰ noted the commonest age-at-onset to spread over 10-39 years. This discrepancy may be due to the regional variation. The above studies pertain to the non-endemic areas of leprosy in north India, while the studies of Mohamed Ali and ours are conducted in adjacent hyper-endemic zones of leprosy in south India. Comparison of similar data available from different parts of the world (Table III), however, reveals wide fluctuation in the age-at-onset.¹¹⁻¹⁵ Thus, our findings support the prevailing concept that the age-at-onset of leprosy differs from region to region the world over and even in the same country.³

Table II. Comparison of the percentage of age-at-onset from Indian studies.

Age	Present series (1985)	M. Ali ³ Chingleput (1964)	Verma & Prasad ⁴ Lucknow (1967)	Sehgal ⁵ Varanasi (1970)	Sehgal et al ⁷ Goa (1976)	Guha et al ⁸ Varanasi (1981)	Schgal et al ⁹ New Delhi (1982)
0-9	17.0	15.9	5.6	3.5	5.3	6.2	2.94
10-19	25.7	19.57	23.2	16.1	14.5	20.0	18.88
20-29	27.4	23.42	30.0	27.9	29.1	27.0	30.43
30-39	14.5	18.39	18.4	24.3	22.9	23.0	21.43
40-49	8.1	12.96	13.6	15.4	12.1	10.7	14.87
50+	7.31	10.47	9.2	12.8	16.1	13.0	8.73

Table III. Comparison of the percentage of age-at-onset from different countries.

Age-at-onset in years	Present series (1985)	China ¹¹ Maxwell (1937)	Malatia ¹² Innes (1938)	Philippine ¹³ islands Guinto & Rodriguez (1941)	Rangoon ¹⁴ Lewis and Edwards (1958)	Endemic states in Continental United States Badger ¹⁵ (1964)
0—9	17.0	5.3	5.7	16.3	11.5	3.7
10—19	25.7	35.1	30.4	48.3	35.8	18.5
20—29	27.4	28.8	42.6	18.3	26.4	25.7
30 and more	30.0	30.5	21.0	16.8	26.1	51.9

References

1. Cochrane RG and Smyly HJ : Classification, in : Leprosy in Theory and Practice, 2nd ed, Editors, Cochrane RG and Davy TF: John Wright, Bristol, 1964; p 303.
2. Brown SG : The age of onset of leprosy, Intern J Leprosy, 1965; 33 : 267-272.
3. Mohamed Ali P : The age-at-onset of leprosy, Leprosy Review, 1964; 35 : 193-197.
4. Verma AK and Prasad BG : Some observations on the age-at-onset of leprosy, Leprosy Review, 1967; 38 : 238-241.
5. Sehgal VN : A study of age at onset of leprosy, Intern J Dermatol, 1970; 9 : 196-199.
6. Arunkumar, Indrejan A, Issac JJ et al : Age at onset of leprosy, Leprosy India, 1973; 45 : 167-173.
7. Sehgal VN, Rege VL and Singh KP : The age at onset of leprosy, Intern J Leprosy, 1976; 45 : 52-55.
8. Guha PK, Pandey SS, Singh G et al : Age at onset of leprosy, Leprosy India, 1981; 53 : 83-87.
9. Sehgal VN, Koranne R, Sharma AK et al : Age at onset of leprosy, Journal 1982; 56 : 332-337.
10. Sehgal VN, Ashok Ghorpade, Saha K : Urban leprosy— An appraisal from northern India, Leprosy Review, 1984; 55 : 159-166.
11. Maxwell TL : A statistical review of 1370 cases of leprosy in China, Intern J Leprosy, 1937; 5 : 151-157.
12. Innes JR : A leprosy survey in the island of Malatia. Brit Solomon islands, Intern J Leprosy, 1938; 6 : 501-513.
13. Guinto RS and Rodriguez TN : Field study of leprosy in Talibay Cabu, Philippines, Intern J Leprosy, 1941; 9 : 149-166.
14. Lewis RA and Edwards RA : Statistical study of 1000 cases of leprosy observed in Rangoon, Intern J Leprosy, 1958; 26 : 236-251.
15. Badger LF : Epidemiology, in : Leprosy in Theory and Practice, 2nd ed, Editors, Cochrane RG and Davy TF: John Wright, Bristol, 1964; p 76-77.