

CORRELATION OF BACILLEMIA WITH CLINICAL TYPES OF LEPROSY

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Bacillemia was assessed in a single random blood sample of 30 untreated leprosy patients by employing direct blood smear method, haemolysis method, buffy coat method, and leucocyte adherence method. Bacillemia was detected in 16 (53.3%) cases. Bacillemia was frequently detected in clinically BL-LL cases. The degree of bacillemia bore no relationship with the degree of positivity of skin and nasal smears, though the chances of finding bacillemia are increased with an increase in the BI.

Key words : Bacillemia, Leprosy.

Bacillemia occurring in various types of leprosy, especially in the lepromatous form has been demonstrated by many workers.¹⁻⁶ The discharge of bacilli into the blood stream could be explained by the fact that bacilli have been found in the endothelial cells of arterioles, capillaries and venules in the skin and also in the subcutaneous veins of leprosy patients.⁷⁻¹⁰ Such bacilli-laden cells could either burst or get dislodged into the circulating blood.

In the present study, an attempt has been made to find a correlation of bacillemia with the clinical types of leprosy, and the bacteriological index (BI) of skin and nasal smears. In addition, histopathological examination and lepromin test were also done.

Materials and Methods

Thirty untreated cases of leprosy were investigated. In all these patients, skin smears from five different sites (both ear-lobes, both eyebrows and the lesion) were taken for assessment of BI which was graded according to Dharmendra's method. In addition, nasal smears were also examined. Clinical and histopathological classification was done on Ridley-Jopling scale.¹¹ Dharmendra's Lepromin was used for lepromin reaction (both early and late). Method

of grading was similar to that employed by Ramu et al.¹²

For detecting bacillemia, a single blood sample was collected by the method of Drutz et al.² The method of making direct blood smear was similar to that employed by Lowe.¹ Both thick and thin smears were made. Concentration methods employed were buffy coat (BC) method,² leucocyte adherence (LA) method,³ and haemolysis (HL) method.⁴ In each specimen 1500—2000 microscopic fields were examined under $\times 500$ magnification.

Results

The results of this study are included in tables I and II. Thin blood film did not reveal AFB in any case, while thick blood film was positive in two LL cases.

Table I. Bacillemia by different methods in patients with different clinical types of leprosy.

Type of leprosy	Number of cases	Number of positive cases by concentration methods		
		LA	BC	HL
LL	9	7	8	9
BL	8	1	1	6
BB	2	—	—	—
BT	7	—	—	1
TT	4	—	—	—

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Table II. Degree of bacillema by haemolysis in method different types of leprosy.

Type of leprosy	Number of cases	Number of patients having AFB per 500 microscopic fields by HL method			
		1-20	21-40	41-80	>80
LL	9	1	2	3	3
BL	8	1	3	2	—
BB	2	—	—	—	—
BT	7	1	—	—	—
TT	4	—	—	—	—

Bacillema was frequently detected in clinically BL, or LL leprosy. Although chances of finding bacillema were increased along with an increase in the BI of skin and nasal smear, no correlation was found between the degree of bacillema (number of bacilli per 500 microscopic fields) and the degree of positivity of skin and nasal smears. Bacillema was frequently detected in patients with low immunological status as evidenced by negative lepromin reaction and histopathological findings in favour of BL-LL. Clinical and histopathological correlation of the diagnosis was found in 19 (63.3%) cases only.

Comments

Bacillema in LL cases by HL method has been reported by different workers.⁴⁻⁶ with positivity rates varying from 52.0% to 85.7% and 100.0%. Results of various studies^{2,4,9} with BC method have also varied (81.8%, 100.0% and 16.0%). LA method has given positivity rates of 100% and 20%.^{3,4} Present study has shown bacillema in 100% cases of LL by HL method, while positivity with BC method and LA method was 88.9% and 77.0% respectively.

BB, BT and BL cases of leprosy had shown bacillema in 42.8% and 55.5% by HL method.^{4,6} Our study gave 41.2% positivity rate. Bacillema by BC and LA method was positive in one case of BL which also showed positive bacillema by HL method. However, BC and LA method gave negative results in the other BL, BB and BT cases.

Cases of tuberculoid leprosy did not show bacillema by any of the methods mentioned above.

In the present study HL method proved to be the best method to detect bacillema, while the results with the LA method and the BC method were almost equal. Sreevatsa et al⁴ also found better results with HL method as compared to BC and LA methods.

It is clear from the results that bacillema is frequently found in clinically BL and LL cases. Chances of finding bacillema are decreased as we move towards the tuberculoid end of leprosy spectrum. Bacillema is not very common in BT cases and it is very rare in TT cases.

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