

Antistreptolysin O Titer in Leprosy¹

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The possible influence of streptococci upon leprosy patients has been suggested by various leprologists (2), and its effect upon the kidneys of leprosy patients (one of the common causes of death) is a possibility which has not been investigated before. Therefore, antistreptolysin O titer was estimated in the sera of various types of leprosy patients.

MATERIALS AND METHODS

Sera collected from 38 leprosy patients attending the outpatient clinic of the Hospital for Tropical Diseases, London, and 13 healthy controls were used in the test. The patients were free from history of recent fever or sore throat and were classified according to the Ridley and Jopling classification (7).

The test was carried out by a modification of the technic described by Brighton, Lampard and Parker (5). A visual end point in a six tube test was employed to give significant results.

RESULTS

Of 38 patients sera-tested, antistreptolysin O titer was raised above 200 units per ml in 12 of them. Of these, the maximum titer reached by one patient was 500 units per ml, while the others were in the range of 200-300 units. The percentage of patients with antistreptolysin O titer above 200 units per ml in the lepromatous leprosy group is significantly high when compared to the nonlepromatous leprosy group ($p = >.05, <.1$).

Among these lepromatous leprosy patients no significant difference was found between the patients who had no reactions and those with reactions and those with reactions and proteinuria. Of the three patients with lepromatous leprosy and chronic

renal failure, no patient with raised antistreptolysin O titer was observed. All the control sera also showed normal antistreptolysin O titer. The results are given in Tables 1 and 2.

DISCUSSION

Determination of antistreptolysin O titer gives a positive result in about 80% of patients with recent streptococcal infection. They appear, in one or two weeks after infection, with type A streptococci, and thereafter remain raised for two to six months (3). Therefore a high titer of antistreptolysin O is an indication of recent streptococcal infection. The upper limit is generally taken as 200 units per ml for normal adults and children over the age of five years (6).

In this study the percentage of patients with raised antistreptolysin O titer (above 200 units per ml) is higher in the lepromatous leprosy group than in the nonlepromatous group. Such elevation in antistreptolysin O titer in lepromatous leprosy patients was also reported by Almeida and Silva (2), and Abe *et al* (1).

Macroglobulinemia has been reported to give rise to false positive reactions in antistreptolysin O estimation, the titer may go as high as 10,000 units (3). Macroglobulinemia is associated with lepromatous leprosy (4), so the raised antistreptolysin O titer which is commonly associated with lepromatous leprosy could be due to such associated macroglobulinemia.

In this study no significant difference was found between lepromatous patients without lepra reactions and those with reactions and proteinuria. Three patients with chronic renal failure also showed no raised titer. Thomas *et al* (8), also found no elevation of antistreptolysin O titer in patients during the acute phase of *erythema nodosum leprosum* reaction with signs of renal impairment. Hence, we may conclude that lepra reactions and renal impairment in leprosy are not related to streptococcal infection.

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TABLE 1. Antistreptolysin O titer in different types of leprosy.

Patient	No. of patients studied	No. of patients with A.S.O.T. titer beyond 200 units/ml	Percentages of patients with raised A.S.O.T. titer
Controls	13	0	0.0
TT & BT	10	1	8.3 ^a
BB	2	0	
BL	5	2	
LL	21	9	42.3 ^a

^a Significant difference ($p = > .05, 2.1$).

TABLE 2. Antistreptolysin O titer in different clinical conditions of the patients among patients with lepromatous leprosy.

Clinical condition of patients	No. of patients studied	No. of patients with A.S.O.T. beyond 200 units/ml	Percentage of patients with raised A.S.O.T. titer
BL & LL no reaction	10	5	50.0 ^a
BL & LL reacting	11	4	36.3 ^a
BL & LL reacting with proteinuria	6	2	33.3 ^a
BL & LL with chronic renal failure	3	0	0.0

^a Difference not significant.

SUMMARY

Antistreptolysin O titer was estimated in sera of 38 leprosy patients and in 13 healthy controls. The percentage of patients with raised antistreptolysin O titer (above 200 units per ml) is higher in lepromatous leprosy patients than in nonlepromatous leprosy patients. But lepra reactions and renal impairment in leprosy are not related to streptococcal infection.

RESUMEN

Se midió el título de antiestreptolisina O en el suero de 38 pacientes de lepra y de 13 controles sanos. El porcentaje de pacientes con título de antiestreptolisina O aumentado (por encima de 200 unidades por ml) es mayor en pacientes con lepra lepromatosa que en los pacientes con lepra no lepromatosa. Sin embargo, las reacciones y el compromiso renal en la lepra no están relacionados con infecciones estreptocóccicas.

RÉSUMÉ

On a procédé à la détermination des titres d'antistreptolysine O dans le sérum de 38

malades de la lèpre et de 13 témoins sains. La proportion de malades présentant une élévation du titre pour l'antistreptolysine O (au-dessus de 200 unités par ml) était plus élevée chez les malades souffrant de lèpre lépromateuse que chez les malades non lépromateux. La réaction lépreuse et l'atteinte rénale dans la lèpre ne sont pas en relation avec l'infection streptococcique.

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