

Secretion of Blood Group-specific Substances in the Saliva of Leprosy Patients¹

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Several poorly understood factors influence the transmission of leprosy and clinical manifestations of this disease. Genetic factors have been considered significant (^{5, 6}), and were recently the subject of discussion at an international conference (^{2, 4}). Studies on the occurrence of leprosy in different ABO groups have indicated an association between leprosy and the blood groups (^{1, 3, 7}), although there are conflicting reports (^{8, 9}).

The present investigation of leprosy patients was undertaken to study the secretion of blood group-specific substance in saliva, a property that is also genetically determined.

MATERIAL AND METHODS

Two hundred and twelve leprosy patients attending the dermatologic outpatient department of Sir Sunderlal Hospital and leprosaria in Varanasi District were studied. The diagnosis of leprosy was made by clinical observation, and confirmed, in questionable cases, by histopathologic examination. Forty-two of the patients had lepromatous leprosy. The remainder were classified as: tuberculoid, 118; neuritic, 38; borderline, 6; and maculoanesthetic, 8. Normal control cases were comprised of medical students, hospital personnel, and patients with minor skin ailments of infective nature.

The secretion of blood group-specific substance was tested by the method described by Stratton and Renton (⁸). Sam-

ples of saliva measuring about 3 ml. were collected in clean dry test tubes. The tubes were then boiled in a water bath for about 10 minutes. The cooled specimens of saliva were centrifuged for half an hour at high speed. The supernatant was utilized for inhibition test with anti-A and anti-B sera on microscopic slides at room temperature with red blood cells acting as an indicator. In order to make the test semiquantitative two dilutions of serum, viz., 1:2 and 1:8 were used. The sera used gave strong agglutination in the former dilution and a moderate reaction in the latter.

OBSERVATIONS

Table 1 shows the distribution of secretors and nonsecretors of blood group-specific substance among 370 normal controls and 212 leprosy patients. Of 42 lepromatous patients 76.2 per cent were observed to be secretors and 23.8 per cent nonsecretors. Statistically the difference from the control group is not significant ($\chi^2 = 0.70$, $P > 0.30$). Of 170 patients with nonlepromatous leprosy the percentage of secretors and nonsecretors was found to be 65.3 and 34.7 respectively. Here again the difference between this distribution and

TABLE 1. Secretion of blood group-specific substance in the saliva in leprosy patients and normal controls.

Series studied	Total No.	Secretors		Nonsecretors	
		No.	%	No.	%
Normal	370	259	70.0	111	30.0
Lepromatous	42	32	76.2	10	23.8
Nonlepromatous	170	111	65.3	59	34.7
Total leprosy	212	143	67.5	69	32.5

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that in the normals is not statistically significant ($\chi^2 = 1.19$, $P > 0.20$). The difference between the two groups of leprosy patients, i.e., lepromatous and nonlepromatous, is also not significant ($\chi^2 = 1.36$, $P > 0.02$). As a whole, also, the distributional difference among control and leprosy patients is definitely not significant ($\chi^2 = 0.41$, $P > 0.50$).

DISCUSSION

The ability to secrete blood group-specific substance behaves as a simple Mendelian dominant character determined by a gene which we may call "S" (secretor), and a recessive character determined by an allelic nonsecretor gene "s". In the present study, this genetic system was explored because, to the authors' knowledge, it has thus far not been studied in leprosy.

It is suggested that a comprehensive study of several genetically determined factors as proposed by Lechat (⁴) might be more fruitful in the study of susceptibility to leprosy.

SUMMARY

In a study of the secretion of blood group-specific substances in the saliva of leprosy patients and normal controls, no statistically significant deviation in the distribution of secretors and nonsecretors was found between the patients and the control population.

RESUMEN

En un estudio en grupos sanguíneos específicos, de la secreción de sustancias en la saliva de pacientes con lepra lepromatosa y en controles normales, no se encontró una desviación estadísticamente significativa en la distribución de los secretores y no secretores entre los enfermos y la población controlada.

RÉSUMÉ

On a mené une étude sur la sécrétion des substances spécifiques des groupes sanguins

dans la salive de malades de la lèpre et de sujets témoins normaux. Aucune déviation statistiquement significative dans la distribution des secréteurs et des non-secréteurs n'a été observée entre les malades et la population témoin.

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