

ABO Blood Groups and Leprosy

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Recently, Salzano (1967) has given a survey of the literature on ABO blood groups and leprosy. This compilation is all the more valuable, as many of the original papers were published in journals which can be consulted with difficulty only. However, additional statistical analysis of the collected data seems to be appropriate. For the comparison between patients and healthy controls with Woolf's (1955) method, Salzano's Table I was used, and four additional series (Pinetti, 1931; Valle, 1937; Saengudom and Flatz, 1967; Singh and Ojha, 1967) were included. The result is seen in Table I. Taken at their face value, the combined data show a significant excess of A as compared with O ($\chi^2(d.f.1) = 11.983$; $p = 0.0007$). The frequency of B, on the other hand, is still lower than O, but the difference is not significant. The heterogeneity χ^2 , however, is very high and significant ($p \approx 10^{-10}$). Considering this as well as the dubious quality of some of the series analysed, the main effect (somewhat higher frequency in group A) has to be regarded with caution. It would be premature, on the other hand, to take a negative result for granted.

More important is the comparison between lepromatous and non-lepromatous cases. Here, the series of Vogel and Chakravartti (1966; 931 patients), and Singh and Ojha (1967; 633 patients) were included, bringing the total number of series to 10 (Table II). There is a slight, but significant

excess of A as compared with O among the lepromatous cases ($\chi^2(d.f.1) = 7.709$; $p = 0.005$). The heterogeneity χ^2 is relatively high ($p \approx 0.02$), which is almost exclusively due to the series of Yankah (1965). B seems to behave like A, and $x(B:O)$ is also significant. The highest χ^2 is found in the comparison A+B+AB:O ($\chi^2 = 10.863$; $p = 0.001$).

Hence, a slightly higher incidence of groups A and B among lepromatous cases which corresponds to an increase of O in non-lepromatous (mainly tuberculoid) patients, seems to be fairly well established. Saengudom and Flatz (1967) found a higher incidence of A in severe as compared to mild cases, but they did not compare lepromatous and non-lepromatous patients.

TABLE IA
ADDITIONAL SERIES: LEPROSY PATIENTS AND CONTROLS (SEE ALSO: SALZANO 1967, TABLE I)

No.	Authors	Country	P C	No.	Blood Group			
					A	B	O	AB
28	Singh and Ojha (1967)	India	P	633	193	172	212	56
			C	2583	639	859	873	212
29	Valle (1937)	India	P	72	11	4	56	1
			C	144	40	44	55	5
30	Pinetti (1931)	Italy	P	31	13	2	16	0
			C	947	281	144	462	60
31	Saengudom and Flatz (1967)	Thailand	P	302	76	82	121	23
			C	3785	781	1047	1762	195

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TABLE IB
STATISTICAL ANALYSIS (ALL SERIES)

No. of Series	No. of Patients	No. of Controls	Comparison x	χ^2 (d.f. = 1)	χ^2 of Heterogeneity	Degrees of Freedom	
31	12,299	393,023	A:O	1.0895	11,983	105,536	30
			B:O	0.9541	2,334	65,367	30
			AB:O	0.9603	0,696	70,129	28
			A + B + AB:O	1.0187	0,712	110,476	30

TABLE IIA
 ADDITIONAL SERIES: LEPTOMATOUS AND NON-LEPTOMATOUS LEPROSY (SEE ALSO: Salzano 1967, TABLE III)

No.	Author	Country	L NL	No.	Blood Group			
					A	B	O	AB
9	Vogel and Chakravarti (1966)	India	L	472	126	150	164	32
			NL	459	116	140	175	28
10	Singh and Ojha (1967)	India	L	164	54	51	47	12
			NL	469	139	121	165	44

TABLE IIB
 STATISTICAL ANALYSIS (ALL SERIES)

No. of Series	No. of Leprom. Patients	No. of Non-leprom. Patients	Comparison	x	χ^2 (d.f. = 1)	χ^2 of Heterogeneity	Degrees of Freedom
10	4477	3065	A:O	1.1831	7,709	19,904	9
			B:O	1.1803	5,644	13,406	9
			AB:O	1.1114	0,692	7,349	9
			A + B + AB:O	1.1859	10,863	21,991	9

The calculations were carried out using a computer Siemens 2002, which was lent to the University of Heidelberg by the 'Deutsche Forschungsgemeinschaft'. The author thanks Mr. J. Krüger for technical help.

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