BLOOD GROUPS ABO AND Rh (D) FACTOR IN THE RHEUMATIC DISEASES

BY

I. STOIA, R. RAMNEANTU, AND M. POITAS

From the Methodology Centre of Rheumatology, Bucharest, Romania (Director: Professor Dr. I. Stoia)

The researches of Cohen, Boyd, Goldwasser, Cathcart, and Heisler (1963) on a small number of patients with chronic joint disease of different clinical types showed that there was no association between the ABO blood groups and the chronic rheumatic diseases, but that there was a deficiency of Rh factor. Kornstad, Kornstad, and Guldberg (1965), examining 217 patients with rheumatoid arthritis, found the distribution of ABO groups to be about the same as in a control group; the frequency of Rh factor was 12 per cent. compared with 16 per cent. in the controls, a difference which is not statistically significant.

Macafee (1965), reporting on 431 cases of rheumatic heart disease and on the statistical data previously published, found an excess of group A, and observed that the frequency of "non-secretors", ABO (H), was higher in cases of rheumatic fever.

Material

Since 1962 we have examined 1,454 cases, all from Bucharest, of which 701 had a clinical and serological diagnosis of rheumatoid arthritis (latex test and sheep cell

agglutination test with euglobulin extracted with ammonium sulphate), 183 of ankylosing spondylitis, and 570 of degenerative joint disease.

To avoid systematic error affecting the frequency of the rarest of the four blood groups, we used the formula of Fisher to calculate the expected numbers of AB blood groups in the sample, and compared them with the observed number; we found no significant difference.

Results

Table I shows a comparison, using the χ^2 test, of our results with those in 26,229 blood donors, also from Bucharest, who were used as controls (Mihăilescu, 1958).

In rheumatoid arthritis the frequency of group B is significantly higher than in the controls. In ankylosing spondylitis and degenerative joint disease the difference is not significant.

This fact is shown in Table II (opposite), in which the statistical method of Woolf (1955) is applied. The blood groups from the patients are:

$$B = h; (A + O + AB) = k,$$

and those from the control group are:

$$B = H; (A + O + AB) = k.$$

TABLE I
DISTRIBUTION OF ABO BLOOD GROUPS IN 570 CASES OF CHRONIC JOINT DISEASE
AND IN A CONTROL GROUP OF 26,229 BLOOD DONORS

Blood Group	No. of Cases			Frequency (per cent.)			Control Group
	RA	AS	DJD	RA	AS	DJD	
Total	701	183	570	99.99	100.0	100.0	26,229
A	295	71	233	42.22	38.80	40.88	40.46%
B	144	37	103	20.54	20.22	18.07	17.19%
O	211	62	199	30.10	33.88	34.91	34.01%
AB	50	13	35	7.13	7.10	6.14	8.33%
χ^2 with 3 d.f.				9.48	1.43	4.27	
P				0.02-0.05	0.5-0.7	0.20-0.30	

RA = Rheumatoid arthritis.

AS = Ankylosing spondylitis.

DJD = Degenerative joint disease.

TABLE II
COMPARISON OF THE FREQUENCIES OF THE BLOOD
GROUPS B AND A + O + AB

$X = \frac{h \times K}{H \times K}$	Y	W	Y^2W	P
1.24534	0.21942	111.61	5.36855	0.02-0.05

We found the frequency of Rh (D) in 411 patients to be 12 per cent. compared with 15 per cent. in the controls. Table III shows that this difference is statistically significant.

TABLE III
FREQUENCY OF BLOOD GROUPS Rh AND rh IN 411 PATIENTS WITH RHEUMATOID ARTHRITIS
COMPARED WITH A CONTROL GROUP OF 24,829 (WOOLF'S METHOD)

RA		Control		X	Y	W	Y^2W	P
Rh	rh	Rh	rh					
369	42	21,105	3,724	-0.19030	0.43819	37.218	7.14616	0.01-0.001

REFERENCES

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Groupes sanguins ABO et le facteur Rh (D) dans les maladies rhumatismales

RÉSUMÉ

Le groupe sanguin B fut trouvé plus souvent chez des malades atteints d'arthrite rhumatismale que chez des donneurs de sang choisis comme témoins.

Nos résultats sur la fréquence du facteur Rh confirment les conclusions d'autres auteurs.

Il n'y a pas de différence entre les groupes sanguins des cas de spondylarthrite ankylosante et d'ostéoarthrose et ceux des témoins.

Grupos sanguíneos ABO y el factor Rh (S) en las enferme- dades reumáticas

SUMARIO

El grupo sanguíneo B fué encontrado más frecuentemente en enfermos con artritis reumatoide que en un grupo de donadores de sangre (testigos).

Nuestros resultados respecto a la frecuencia del factor Rh confirman las conclusiones de otros autores.

No hay diferencia entre los grupos sanguíneos de enfermos con espondilartritis anquilosante y con osteoartrosis y de los testigos.

Summary

Blood group B was found more frequently in patients with rheumatoid arthritis than in a group of blood donors used as controls.

Our finding on the frequency of the Rh factor confirm the conclusions of previous authors.

There is no difference between the blood groups in cases of ankylosing spondylitis and osteo-arthritis and those in the control group.