

THE DISTRIBUTION OF AB0 AND RH BLOOD GROUPS IN THE TABUK REGION AND MEDİNA MUNEWERA, SAUDI ARABIA*

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Key words: blood group, Saudi Arabia

When one of the authors of this paper visited Tabuk Maternity and Children's Hospital in April 1984, he noted with interest the frequency of the need for group 0 blood in children. This observation prompted this study which was conducted on pregnant women admitted to this hospital for delivery.

Material and Methods

Random samples of anticoagulated blood were taken from 166 women who had been admitted to Tabuk Maternity and Children's Hospital for delivery. AB0 blood groups and Rh (D) positivity were determined by the tube method using "Ortho" reagents.

Results

A high prevalence of the 0 blood group (53%) was found in these subjects while group A was seen in only 30%, group B in 12% and group AB in about 5% of the women. Rh negativity was present in about 8% of the blood samples (Table I). Upon reviewing the blood bank records of 1,587 women admitted to the Maternity and Children's Hospital in Medina Munewera, again a strikingly high prevalence of the 0 blood group (44%) was observed (Table II). Rh negativity was noted in about 11% of these records.

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TABLE I: Blood Groups of Women Admitted to Tabuk Maternity and Children's Hospital for Delivery in April 1984

	0	A	B	AB
Rh (+)	85	45	15	8
Rh (-)	3 (3.4%)	5 (10%)	5 (25%)	0
Total	88 (53%)	50 (30.1%)	20 (12%)	8 (4.8%)

TABLE II: Blood Groups of Women Admitted to Medina Maternity and Children's Hospital

	0	A	B	AB
Rh (+)	630	408	290	75
Rh (-)	81 (11.3%)	51 (11.1%)	39 (11.9%)	13 (14.8%)
Total	711 (44.8%)	459 (28.9%)	329 (20.7%)	88 (5.5%)

Discussion

The high distribution of the O blood group in American blacks is known¹. As compared to the O and B blood groups, the A group is more frequently observed in Turkey², as is the case in the white population in the United States^{1,3}. Groups O and B are more frequently seen in the Arabic-speaking population in Turkey². Significant markers such as Rh0, Fy (a-b), Le (a-b), Jk^a and K studied in subjects with a prevalence of hemoglobin S in Turkey strongly suggest their African origin⁴, as was demonstrated in Arabs with the same hemoglobinopathy in Palestine⁵. The high frequency of the O blood group compared to the A group seen in mothers in Tabuk as well as in Medina Munewera is a strong indication that it is not related to the Tabuk region but that it is most likely common to Saudi Arabia. Therefore, the chance of ABO Incompatibility occurring among the offspring of mothers of the O blood group should be taken into consideration more often if the fathers' blood group is not O.

The unusual distribution of Rh negativity related to AB0 blood groups in the Tabuk region was most likely the result of the limited sampling. However, when it was evaluated in a larger sampling, in Medina Munewera, it became almost constant; about 11% in all of the blood groups.

Rh negativity is 17% in England⁶ and 14.7% in Turkey⁷, while it is about 10% in Tabuk and in Medina Munewera. Due to the relatively low frequency of Rh negativity in Saudi Arabian mothers, erythroblastosis fetalis caused by Rh incompatibility should be less in this group. Unfortunately, a study cannot be carried out on subjects with the D blood group, which is more frequently observed among people of Afro-American ancestry⁶. With the D determination, the frequency of Rh negativity most likely would be less, suggesting more African blood group markers in Saudi Arabia.

Before making any conclusions regarding the origin of blood group markers in the Saudi Arabian population, the results of these determinations should be gathered from all parts of this large country.

Summary

The high frequency of group O blood seen in the population in Tabuk (53%) and Medina Munewera (44%) is demonstrated. Rh negativity was found to be rare in these areas, 8% and 11%, respectively.

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Acknowledgements

We are grateful to Tekin Kanra, MD for his helpful criticism and to Miss Ülkü Çayır for her editorial assistance.