

DISTRIBUTION OF ABO AND Rh BLOOD GROUPS IN THE RESIDENTS OF BAHAWALPUR

Pages with reference to book, From 7 To 8

Faiz-ul H. Nasim, Qaiser I. Sheikh, Muhammad Ashraf, Tabinda Kokab, Qamar Shaheen (Department of Chemistry, Islamia University, Bahawalpur.)

Abstract

Distribution of A, B, AB, 0 and Rh blood groups was determined in the residents of Bahawalpur through a survey of 2036 individuals. The distribution was B, 35.26%, 0, 26.23%, A, 25.69%, and AB, 12.82%. Ninetyeight percent individuals were Rh positive and 2% negative. The results when classified according to the sex showed females to be twice more Rh-negative than males and none of the 160 AB male individuals was Rh-negative (JPMA 37 : 7, 1987).

INTRODUCTION

Knowledge of the basic blood groups of the individuals is necessary as a guide in blood transfusions. It is also utilized in anthropologic surveys, in archeology, in disputed paternity, and in forensic medicine. Rh-grouping provides, in addition, an awareness about the chances of Rh-incompatibility and hence helps to take preventive measures against the pathogenesis of erythroblastosis fetalis.

In British population, the distribution of ABO blood groups has been reported¹ to be 0, 47%, A, 42%, B, 8% and AB 3%. In USA the distribution² of these blood groups is 0, 45%, A, 41%, B, 10% and AB 4%. Moreover, 85% of the white race is Rh-positive; Chinese, Japanese and American Indians are 98-99% Rh positive. In NWFP the distribution of ABO blood groups is B, 36%, A, 33%, 0, 25% and AB 5%, while in Indian Hindus residing in Bombay the distribution is 0, 32%, A, 29%, B, 28% and AB 11%³. In Punjab the distribution is B, 36.61%, 0, 33.14%, A, 21.2% and AB 9.05%⁴. Of these 97.24% were Rh positive and 2.76% Rh negative.

The, present survey was planned to investigate the frequency of ABO and Rh blood groups in Bahawalpur, a well-known city of the Punjab province, situated almost in the centre of Pakistan.

MATERIAL AND METHODS

A total of 2036 individuals were examined. They belonged to various localities of the city such as Baghdadul Jadeed, Basti Banga, Basti Darzian, Basti Dewan, Bhatta Jat, Chah Fateh Khan Bazar, Commercial Colony, Goth Gadra, Gulistan Colony, Islamia University, Medical Colony, Model Town A, Model Town B, One Unit Staff Colony, Professor's Colony, Satellite Town, Shahi Bazar, Trust Colony, and interior areas of the city.

Direct agglutination technique⁵ was adopted using glass slide and antisera A, B and D (Biological Labs. Auckland Newzealand) for the ABO and Rh grouping, respectively.

RESULTS AND DISCUSSION

Of 2036 individuals (63% males and 37% females) surveyed, 718 (35.26%) had blood group B. This was followed by 0, 26.23% (534 persons), A, 25.69% (523 persons), and AB '12.82% (261 persons). The order of distribution (Table I)

TABLE – I
Frequency of ABO Blood Groups in Bahawalpur,
compared with Punjab and NWFP.

Blood Group	Bahawalpur	Punjab	NWFP
A	25.69%	21.20%	33%
B	35.26%	36.61%	36%
AB	12.82%	9.05	5%
O	26.23%	33.14%	25%

follows the same pattern as reported by Afza I4 et al. for Punjab, but the frequencies vary. The distribution in Bahawalpur shows one variation from that reported for NWFP³. As we move from NWFP to Bahawalpur, the distribution of A and AB groups undergoes certain changes. Rh grouping showed that 1991 persons (97.79%) were positive and only 45 (2.21%) 'Rh negative. These figures are comparable with those of Afzal et al.⁴ Although the frequency of Rh negative persons is lower than in white race,² it is higher than Chinese, Japanese and American Indians. When the distribution of ABO groups was computed with Rh factor (Table II),

TABLE – II
Frequency of the Rh Factor in the ABO Groups.

Rh factor	Blood Groups			
	A	B	AB	O
Positive	97.51%	98.47%	97.32%	97.38%
Negative	2.49%	1.53%	2.68%	2.62%

it was found that 98.47% persons with blood group B were Rh positive. This was followed by the persons with blood groups A, O and AB.

When Rh factor was reflected against the sex (table III a,b)

TABLE – III A
Percentage Distribution of ABO Blood Groups
with Sex.

ABO Groups	Male	Female
A	25.43%	26.12%
B	34.19%	37.07%
AB	12.52%	13.32%
O	27.86%	23.48%

TABLE – III B
Percentage Distribution of ABO and Rh
Groups with Sex.

Blood Groups	Male	Female
A ⁺	24.88%	25.33%
A ⁻	0.55%	0.79%
B ⁺	33.80%	36.28%
B ⁻	0.39	0.79%
AB ⁺	12.59%	12.40%
AB ⁻	—	0.92%
O ⁺	27.23%	22.70%
O ⁻	0.63%	0.79%

98.44% males were Rh positive and only 1.56% were negative. On the contrary, 3.30% females were

found to be Rh negative, twice more than the figure in males. Of 1278 males, 160 were AB and none of these was Rh negative. In contrast, of 758 females 101 were AB and 7 of them were Rh negative. It is claimed that ABO and Rh blood groups are not sex-linked, therefore it is not certain whether this observation is just a matter of chance. A detailed study is needed to confirm these findings. The distribution of ABO groups is 'also different in the two groups. In males it is in the order of B, O, A and AB, while in females it is B, A, O and AB.

ACKNOWLEDGEMENT

We are unable to acknowledge the cooperation of all the persons who proved to be inspiring. However, special thanks are due for Mr. Rao M. Sarwar, Mr. M. Shahid Inayat, Mr. Abdul Qadeer, Mr. S. Aftab Hussain, Mr. Malik Perveez Akhter, Miss Noshaba Shereen, Miss S. Durr-i-Shahwar Tirmizi and Dr. M. Bashir-udDin Hashmi.

REFERENCES

1. Russell, N.J., Jones, J.G., Winterburn, P.J. and Basford, J.M. Blood biochemistry. Kent, Croom Helm, 1982; p.104.
2. Gebhardt, L.P. Microbiology. 4th ed. Saint Louis, Mosby, 1970; p. 124.
3. Davis, B.D., Dulbecco, R., Eisen, H.N., Ginsberg, H.S. and Wood, W.B. Microbiology including immunology and molecular genetics. 2nd ed. New York, Harper and Row, 1973; p. 605.
4. Afzal, M., Ziaur-Rehman, Hussain, F. and Siddiqui, R. A survey of blood groups. JPMA., 1977; 27:426.
5. Tietz, N.W. Fundamentals of clinical chemistry. Philadelphia, Saunders, 1976; p. 290.