

ABO AND RHESUS BLOOD GROUP DISTRIBUTION IN DISTRICT NOWSHERA

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SUMMARY

A retrospective study of ABO and Rh(D) blood groups was carried out from November 1994 to October 1995 in district Nowshera. A total of 4510 subjects were examined. Blood group "B" had the highest (32.4%) and group "AB" the lowest (11.04%) frequency. Groups "A" and "O" were 27.12% and 29.80% respectively. 92.88% subjects were Rh positive, while only 7.12% of the population was Rh-negative.

INTRODUCTION

Blood group is the term applied to the genetically determined antigens which can be detected on the cell surface by specific antibodies. A previous study showed that the red cells of some individuals were agglutinated by the serum of other individuals.¹ It was demonstrated that these people could be classified into four groups, A, B, O and AB.

There are other 15 types of blood groups known, but clinically ABO and Rhesus blood groups system has major significance in blood transfusion and organ transplantation. It is also important in genetic research, anthropology, evolutive and tracing ancestral relations of human beings. Moreover, it has strong reactive agglutinins in the serum of those who lack the corresponding antigens. Besides, some studies described a strong association between various diseases and ABO blood group.²

The data of different surveys in USA and Britain showed that incidence of blood group "O" and "A" are common there.³ Similar results were found in Saudi Arabia.⁴ Whereas, in a district of west Bengal, the incidence of group "A" was maximum.⁵ In

some parts of Pakistan, group "O" was reported dominant⁶⁻⁸ while in other "B".⁹⁻¹⁰ Hence it is concluded that the incidence of the ABO groups varies in different communities and certain races have a predominance of one blood group compared to others.

MATERIAL AND METHODS

A total of 4510 subjects of different ages and both sexes were surveyed. The data of 3748 cases was collected from the records of district head quarter hospital, Nowshera, and different private laboratories located in the same district. While samples of 762 college students were collected by finger prick directly on the slides (Table-I). ABO and Rh (D) grouping was done by tile technique using Anti A, Anti B Anti D grouping sera. Doubtful results were checked by tube technique.

RESULTS

Out of the total 4510 subjects, 1223 (27.1%) had group "A", 1445 (32%) group "B", 498 (11%) group "AB" and "O" group was present in 1344 (29.8%) cases (Table-II). There was no significant difference in the frequency of ABO blood groups in both males and females. 4189 subjects

TABLE - I
DISTRIBUTION OF SUBJECTS

S. No.	Name of Place	Cases No.
1.	District Head Quarter Hospital, Nowshera	3265
2.	Local Private Laboratories	483
3.	Govt. College, Nowshera	208
4.	Girls College, Nowshera	146
5.	Polytechnic College, Nowshera	192
6.	Govt. College, Pabbi	180
7.	Govt. College, Akora Khattak	36

were Rh(D) positive and 321 Rh(D) negative.

DISCUSSION

The need for blood group prevalence study in a community is multipurpose. Population of our country generally have a higher percentage of group "B". In the present study we also found a higher percentage of group "B" (32.04%). The second dominant group was "O". Similar results were reported earlier.^{9,10} However, in Hazara and Bahawalpur first dominant group was "O" and "B" was second common^{6,7} (Table-III). Rh (D) was negative only in 7.12% people of Nowshera. Other

TABLE - II
PATTERN OF BLOOD GROUP IN DISTRICT NOWSHERA

Blood Group	Numbers	Percentage
A	1223	27.12
B	1445	32.04
AB	498	11.04
O	1344	29.80

research workers found less Rh (D) negative (5%).⁹ While Egyptians have no Rh negative⁴ "A" and "AB" groups and this may be a characteristic of Egyptians.

The difference in the frequencies of blood group in different races could be explained as a part of evolution with a random genetic drift and natural selection. Various associations have been related to certain blood groups, like association of blood group "A" and "O" to carcinoma stomach and duodenal ulcer respectively.¹² A research worker advanced a theory that "O" group individuals are more physically fit than "A" group individuals and that the "O" group have got a 60% chance of reaching 75 years age.¹³ Another study reported that "O" and "B" positive mothers are more successful in reproduction and indicate low percentage of perinatal loss

TABLE - III
COMPARISON WITH OTHER STUDIES (IN PERCENTAGE)

Blood Group	Nowshera	Peshawar	Mardan	Hazara	Lahore	Bahawal-pur	USA	UK
A	27.12	28	24	24	24.14	21	40	42
B	32.04	34	34.9	32	33.80	36	10	08
AB	11.04	07	10.3	11	8.96	06	05	03
O	29.80	31	32.4	33	33.10	37	45	47
Year of study	1995	1992	1993	1984	1990	1988	1988	1988
Ref. present study		08	10	06	09	07	03	03

(stillbirths + abortions) as compared to other groups. He also suggested that favourable age of marriage for "O" positive and "B" positive mothers is 15-22 years and 23-40 years respectively.¹⁴ The same author also found that Rh negative mothers have significantly higher male births than Rh positive mothers.

This study will not only provide a baseline data for future research in related field but it will be useful to clinicians and various blood donor societies, who are responsible for procurement of blood for the patients.

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