

# ABO and Rhesus Blood Grouping in N.W.F.P.

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## Abstract

A study of ABO blood group and Rh (D) factor, was carried out on 10478 cases. 'O' had the highest (35.13%) and blood group 'AB' the lowest (8.23%) frequency. Blood group 24.71% and 31.93% respectively. An overall 94.1 % of population was Rh (D) positive.

### Blood group A and B were

A comparison of the ABO blood group and Rh(D) factor of the N.W.F.P., with that of Karachi population, shows that there has not been much difference between these two populations. (JPMA 35: 253, 1985).

## Introduction

Before Landsteiner,<sup>1</sup> discovery of AB agglutinin system, people had a knowledge of the frequent disastrous result of blood transfusion in the hospitals. Decastello and Sturli<sup>2</sup> completed the ABO blood group system. Blood groups are genetically inherited<sup>3</sup> and therefore its importance cannot be ignored in tracing ancestral relationships of human population. Also in medicine the relationship of blood group to disease is sought after.

In most parts of Pakistan blood group data is not available, therefore a study was undertaken to collect blood group data in N.W.F.P. The data obtained from this study pertain to the ABO and Rh (D) system which will serve as a useful baseline for comparison with other population groups in Pakistan.

## Material and Methods.

The data of blood groups and Rh (D) factors was collected from the records of different hospitals excluding C.M.H., in N.W.F.P., and the data of the hospitals was considered typical of the population living in that area. In those areas where there was not much data available from the hospital, the blood group data was collected by testing the blood of the students in the schools and colleges. The blood samples were collected by finger prick directly on the slides.

ABO and Rh (D) blood grouping was done by tile technique using Anti A, Anti B grouping sera from National Blood Laboratories Limited Rawalpindi, and Anti D grouping serum from DADE Division American Hospital supply corporation Miami, Florida, U.S.A.

## Results

Of 10,478 subjects screened, 24.71% had group A, 31.93% group B, 35.13% group O, and 8.23% group AB. Ninety four percent were Rh (D) positive and 6% negative (Table I & II).

Table -I

Pattern of Blood Group in N.W.F.P.										
Place	n	A	%	B	%	O	%	AB	%	Rh (D) Positive %
Mardan	1187	295	24.8	375	31.5	380	32.01	138	11.6	94.1
Peshawar	2258	497	22.01	760	33.65	888	39.32	113	5.0	93.8
Nowshera	1409	348	24.69	495	35.12	445	31.58	121	8.5	94.2
Risalpur	1026	254	24.75	359	34.99	322	31.38	91	8.8	94.1
Swat	828	205	24.76	480	29.5	541	33.25	156	2.77	94.2
Abbottabad	1627	450	27.65	480	29.5	541	33.25	156	9.58	94.0
Bannu	752	226	30.05	190	27.92	226	30.1	110	14.62	94.5
D.I. Khan	1391	314	23.9	443	33.79	524	37.67	110	8.39	94.8

Table II

### An Overall Pattern of Blood Group in N.W. F. P.

Blood Group	Nos.	%
A	2589	24.71
B	3347	31.93
O	3681	35.13
AB	562	8.23
<b>Total</b>	<b>10478</b>	<b>100.0</b>

The frequency of various blood groups in this series was compared with other countries and Karachi (Table III).

**Table III**

**Comparision with U.K., U.S.A., and Karachi  
with our study**

Blood Group	U.K. Penington (1978)	U.S.A. Linman (1978)	Karachi (Pakistan)	N.W.F.P. (Pakistan)
A	42	40	21.56	24.71
B	8	10	33.91	31.93
O	47	45	36.37	35.13
AB	3	5	8.15	8.23

**Discussion**

Since the discovery of human ABO blood group system<sup>1</sup> its medical significance has been much appreciated. Indeed several workers in different parts of the world are working on the inheritance of blood groups and the relationship between inheritance of disease and blood groups. Thus Jorgensen<sup>4</sup> advanced a theory that 'O' group individuals are more physically fit than group A individuals and that the 'O' groupers have got a 60% better chance of reaching 75 years age. Aird<sup>5</sup> has shown relationship between cancer the stomach and ABO groups and Jorgensen<sup>6</sup> between blood groups and leukaemia. Similar relationship between blood group and diseases has been shown by others<sup>7,9</sup> Most recently, Mourant<sup>10</sup> has given a detailed account of the importance of ABO blood groups in organ transplant. This study shows interesting varities in ABO blood group frequencies in Pakistani population as compared to Europeans and Americans. This may perhaps explain the observed variations in disease patterns between the various populations. No differences were found in the N.W.F.P. and Karachi which is a cosmopolitan city suggesting that the iiatern in there two Pakistani population may represent the picture in the sub continent.

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