

Blood Group Analysis of some people from Latur City, Maharashtra, India

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Abstract- A blood type or blood group is a classification of blood based on the presence and absence of antibodies and also based on the presence of inherited antigenic substances on the surface of red blood cells. These antigens may proteins, carbohydrates, glycoproteins, or glycolipids, depending on the blood group system. Blood groups are inherited from both parents. Maton et. al., (1993). The blood group identification is necessary for transfusion, now lot of reasons doctors transfused the blood to patient. The blood group identification best method is ABO method which is used all over world. Here 140 participants checked their blood group with Rhesus factor and analysed it statistically.

Keywords- Blood group, Rhesus, Statistical data, ABO, Distribution.

I. INTRODUCTION

The blood groups and Rhesus (D) factor varies across the citizen from Latur city, Maharashtra, India. The aim of this study was to examine the distribution of these groups among voluntary blood donors and blood receivers.

The blood group systems are depend on the basis of different blood group antigens but only ABO and Rhesus system are important in clinical practice. ABO system is popular and consists of four main groups A, AB, B, and O which are determined on the basis of presence or absence of A and B antigens. These antigens are under the control of three allelic genes, A, B and O, situated on the long arm of chromosome 9q Eastlund T(2003). In Rhesus factor (D) system the blood groups are Rh-positive or Rh-negative on the criteria of presence or absence of Rhesus D antigens on red cell surface. The Rhesus antigens are determined by three pairs of closely linked allelic genes located on Chromosome one. Behra D, and Joshi D.(2013).

All human race share the same ABO and Rhesus blood group systems although they differ in the frequencies and distributions of specific types in different races, ethnic groups, and socio-economic groups or amongst different populations Sidhu S, (2003) and Pramanik T, et, al,(2000). In all over study blood group A is the least distributed among the population of the Latur city.

The discovery of the ABO blood groups by Austrian scientist Karl Landsteiner in 1900 was the greatest achievement in the history of blood transfusion medicine. He found three different blood types and he described them as A, B, and O blood groups. Alfred Von Decastello and Adrian Sturli discovered the fourth type of blood group is AB in 1902. Eweidah MH et, al., (2011) Behra D et, al.(2013). Firkin F, et, al. (2008) Forty years later, both Landsteiner and Weiner discovered Rhesus (D) antigen Garratty G . et, al.(2000), Mollison, PL et, al, (2008). The Landsteiner's discovery was a breakthrough in the history of blood transfusion medicine, as it opened the door to the birth of a wide spectrum of discoveries in the field of Immunohematology.

II. MATERIAL AND METHODS

Data collection

All the participants were counselled about the aims and objectives of the blood group study, and the blood grouping procedures were briefed to them. Particulars of the each participant were taken in a data collection sheet.

Statistical analysis

All statistical data analyses for make a result were done by Microsoft Office Excel 2010. The result was calculated as frequency of each blood group expressed as number and percentage.

III. RESULT AND DISCUSSION

Table No. 1. Total Participants and blood groups

Blood Group	A	B	AB	O
Male	02	16	04	04
Female	24	38	24	28
Total	26	54	28	32

Table No. 2. Total Participants and blood groups with Rhesus factor

Blood Group	A ⁺	A ⁻	B ⁺	B ⁻	AB	AB ⁻	O ⁺	O ⁻
Male	02	00	16	00	04	00	04	00
Female	24	00	38	00	24	02	28	00
Total	26	00	54	00	28	02	32	00

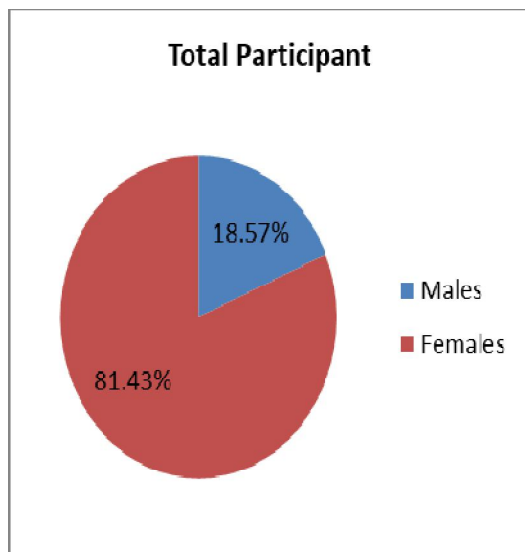


Fig 1. Total Participant

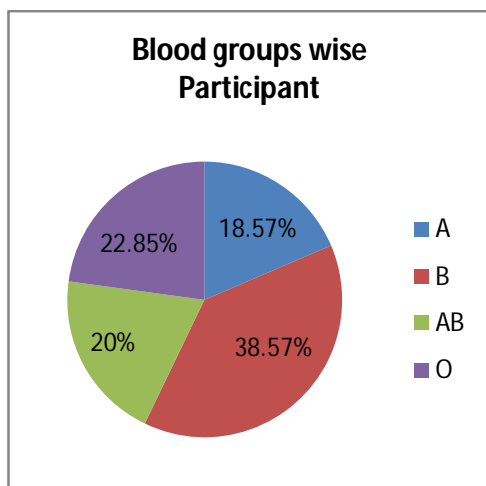


Fig 2. Blood group wise distribution

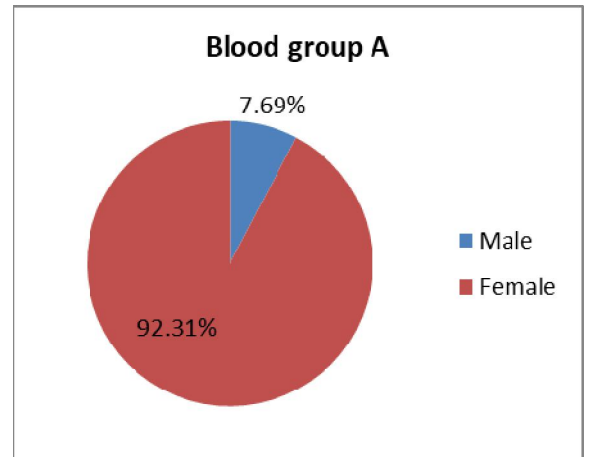


Fig 3. Blood group A ratio

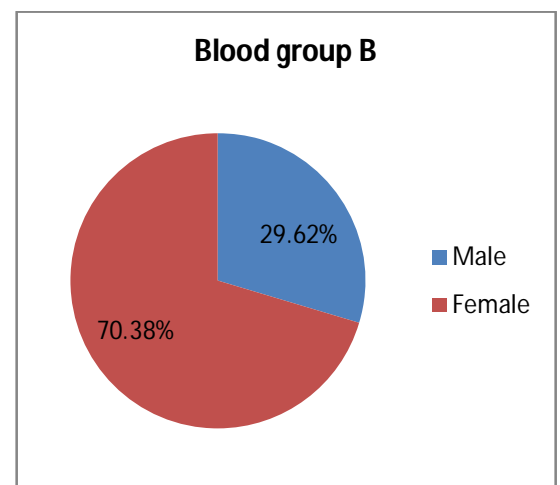


Fig 4. Blood group B ratio

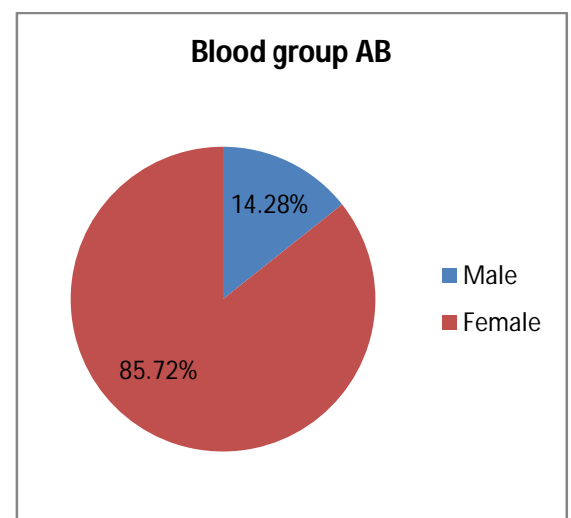


Fig 5. Blood group AB ratio

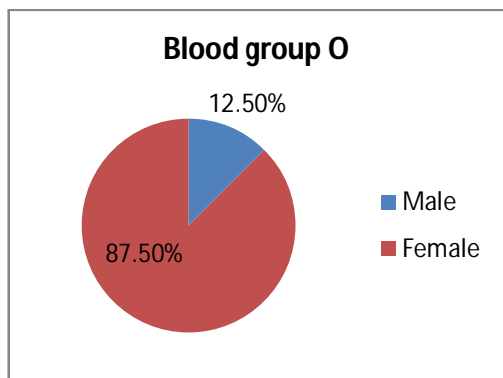


Fig 6. Blood group O ratio

There are 140 peoples blood group was analysed, about 140 females are 114 and 26 are males. Blood group detected by ABO method. About 26 males 02 male are A positive, 00 was male A negative, 16 was male B positive, 00 are B negative, 04 are male AB positive, 00 are AB negative, 04 are O positive, 00 are O negative.

About 114 females, 24 females are A positive, 00 females are A negative, 38 females are B positive, 00 are B negative, 22 are AB positive, 02 are AB negative, 28 are O positive, 00 are O negative.

Out of 140 participants 81.43% are females and 18.57 % are males. Table 1 shows total participants distributed in blood groups by gender wise. There was B group is dominant with 54 participants followed 32 participants are from group O, 28 participants are from group AB and 26 participants are from group A. Table no. 2 shows the distributed total blood groups with Rhesus factor and gender wise. There was all participants are rhesus factor is positive, no anyone rhesus factor negative.

Figure 1 shows the total participants there were 18.51 % males and 81.43% females. Figure 2 shows blood group wise distribution, Blood group A was 18.57 %, blood group B was 38.57 %, blood group AB was 20 %, and blood group O was 22.85 %.

Figure 3 to 6 shows gender wise ratio, there were figure 3 shows for blood group A, 7.69 % are males and 92.31 % are females. Figure 4 shows for blood group B, 29.62% and 70.38 % are females. Figure 5 shows for blood group AB 14.28 % are males and 85.72 % are females. Figure 6 shows for blood group O 12.5 % are males and 87.5 are females.

IV. CONCLUSION

As per comparative blood group analysed from males about 26 males only 02 males are found A positive and A

negative males are not appeared. 16 was B positive and B negative males are not detected. 04 males are AB positive and AB negative males are not found. 04 males are O positive and O negative males are not found.

The females are 114 and 24 females are A positive and A negative females are not appeared. 38 females are B positive and B negative females are not appeared. 22 was AB positive and 02 are AB negative.

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