Variation in hair color related to Blood Grouping

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ABSTRACT

Objective of the present study was to correlate blood grouping with the hair color variation. The difference in the human blood is due to the presence or absence of different protein like antigens and antibodies. ABO and Rh systems are the most important used for blood transfusion. Hair color is the pigmentation of hair follicles which is due to two types of melanin i.e, Eumelanin and pheomelanin. Blood group testing was used to indicate the blood group type of the subject. Statistical analysis was performed by the use of Microsoft Word.

Keywords: Hair color, Blood Type, Variation.

1. INTRODUCTION

Karl Landstenier discovered the blood group types and he was given noble prize in Physiology and medicine in 1930. The difference of human blood is because of the presence or absence of different proteins, for example antigens and antibodies. Antigens are present at the surface of RBCs and antibodies are present in the serum plasma. Blood group type also depends on what we got from our parents. ABO and Rh systems are used for blood transfusion. If a person belongs to blood group AB then you have both A and B antigens on the surface of RBC but no A or B antibodies are present in the plasma. If a person belong to the blood group O you have neither A and B antigens on the surface of RBCs but you have both A and B antibodies in the plasma. If a person belongs to the blood group A then the person has A antigens on the surface of RBCs and B antibodies in blood. If you belong to the blood group B then you have B antigens on the surface of RBCs and A antibodies in blood. (1) Positive and negative blood group is due to the Rh factor. Presence of Rh factor will lead to positive blood group while its absence leads to negative blood group. 85% of the total human population has positive blood group while the negative one is rare (2).

1.1. Variation in hair color

Hair color is the pigmentation of hair follicles which is due to two types of melanin i.e Eumelanin and pheomelanin. More Eumelanin leads to darker hair color. Less Eumelanin leads to lighter hair color. A person can have hair follicles of more than one color because the levels of melanin changes over time. Specific hair colors are also associated with ethnic groups. At least two genes control human hair color. Pheomelanin leads to orange and red color while Eumelanin leads to black or brown color. Brown phenotype is dominant over blonde allele. No brown allele leads to blond hair color. Objective of the present study was to correlate blood grouping with the hair color variation.

2. MATERIALS AND METHODS

A total of 177 subjects participated in recent study. The subjects were students of Bahauddin Zakariya University, Multan Pakistan.
2.1. Blood grouping

Blood group testing was used to indicate the blood group type of the subject. I took the blood samples of all the students and checked their blood group one by one with the help of syringe injection. Then I labeled the samples by the name of the students. I took a glass slide and put three drops of blood on it then I mixed the one drop with A antibody serum, second with the B antibody serum and D antibody serum on third drop of the blood. Agglutination in the respective drops indicated the blood group type. Agglutination in the A antibody section indicated that the subject had A blood group and agglutination in the D section indicated that the subject had positive blood group and the same procedure was followed for all the blood groups.

2.2. Project designing

The information was collected from the consent of the subjects that how blood group affects hair color, asked their blood groups and then checked their blood groups personally.

2.3. Statistical analysis

Statistical analysis was performed by the use of Microsoft Word.

3. RESULTS

Does blood group affects the hair color? Figure 1 shows that, for blood type A+, 48.4% have black hair and 51.1% have brown hair. For blood type A-, 100% have black hair. For blood type B+, 37.2% have black hair and 62.7% have brown hair. For blood type B- 60% have black and 40% have brown hair. In case of blood type AB+, 36% have black hair and 64% have brown hair. In case of AB-, 100% have brown hair. For blood type O+, 29.6% have black and 70.3% have brown hair. For blood type O-, 50% have black hair and 50% have brown hair.
Questionnaire based study has given an important advancement in recent researches (3-10). People have worked in this area but they related the hair color variation with the homo and heterosexual orientation of males and females.

4. CONCLUSION

It was concluded from the present study that 100% black hair color was found in A- and least of black hair color 29.6% was found in O+ maximum of brown hair 70.3% was found in O+ and least number of brown hair was found in A-.

REFERENCES


