Volume : 5 | Issue : 6 | June 2016 • ISSN No 2277 - 8179 | IF : 3.508 | IC Value : 69.48

Research Paper

Study of ABO And Rh Blood Group Among Common People of Capital City of Chattisgarh, India

Medical Science

KEYWORDS : ABO,Rh blood groups.

Dr. Akshay Berad — Assistant professor , Dept.of Physiology ,Chalmeda anandrao institute of medical sciences , Karimnagar, Telangana state.

Dr.Naresh Gurbani — Professor ,Dept.of pathology ,Raipur institute of medical sciences, Raipur, Chattisgarh.

ABSTRACT

This study was aimed to identify the distribution pattern of ABO and Rh-D blood group among population of Raipur city of chattisgarh state in India in order to promote social awareness and safe blood transfusion among population.It was an cross sectional study conducted in department of Physiology and Pathology,Raipur institute of medical sciences ,Raipur,Chattisgarh state,India. Subjects were selected irrespective of age and sex by random sampling.

ABO and Rh blood groups were determined by antigen-antibody agglutination test of slide method.40.69% of subjects were male and 59.30% were females .Majority (39.53%) were having blood group B.33.1%were blood group O.19.18%were blood group A,8.13%were blood group AB.Rh positive were 97.67%and Rh negative were 2.32%. Knowledge of blood group systems as documented in the present study helps in efficient management of blood bank and transfusion services in emergencies.

Introduction :Blood is a specialized connective tissue with complete and unchangeable identity.Blood group antigens are heriditory determined and plays vital role in transfusion safety,understanding genetics and disease susceptibility.Nearly 700 erythrocyte antigens are described and organized into 300 blood groups system by international society of blood transfusion,of which ABO and Rh are important[1].

The ABO blood group system was discovered by scientist Karl Landsteiner in 1900.This was important achievement in history of blood transfusion,that was followed by discovery of Rh antigen[2,3].

The incidence of ABO and Rh group varies in different races,ethnic group and socioeconomic group in different parts of world.The knowledge of distribution of ABO and Rh blood group at local and regional levels is helpful in effective management of blood banks and safe blood transfusion services.Identification of Rh system is important to prevent erthroblastosis faetalis, arises when Rh negative mother carries Rh positive faetus.It is important to have imperative to have information on distribution of these blood groups in any population[4,5].

Material and methods: This cross sectional study was conducted in department of Physiology and Pathology RIMS medical college ,Raipur capital of chattisgarh state,India in year 2014-2015.Total sample of 1032 participants irrespective of age and sex were included in study .samples were determined using random sampling technique.

Lab investigation : Determination of ABO and Rh blood group was done by slide method.For ABO grouping monoclonal antisera anti A,anti B,anti AB and Rh D grouping was done using monoclonal anti D antisera.Aglutination was recorded as positive reaction.

Data collection: All participants were explained about study and blood grouping procedure was briefed to them .written consent were taken .Particulars of each participant was taken in data collection sheet.

Collection of specimen:After aseptic washing with 70% ethyl alcohol,blood samples were collected on clean slide from left ring finger tip with help of sterile lancet.Blood groups were determined by slide agglutination method.

Statistical analysis : Results were cal culated as frequency of each blood group expressed as percentage.

Results: Table 1 showed gender distribution of participants. It revealed that male population was 40.69% and female population was 59.30%.

Table -1 : Distribution of gender of study population .[n=1032]

Gender	Number	Percentage
Male	**420**	**40.60%**
Female	**612**	**59.30%**

Table 2 showed number and percent distribution of ABO and Rh grouping of participants.ABO grouping revealed that group B was predominant 39.53%,followed by group O with 33.1%,group A 19.18% and group AB 8.13%. Rh-D positive were 97.67% and Rh-D negative were 2.32%.

Table- 2:Distribution of ABO and Rh-D blood group of study population [n=1032]

Blood group system	Blood group	Number of subjects	Percentage %
ABO	B	408	39.53%
	O	342	33.1%
	A	198	19.18%
	AB	84	8.13%
Rh-D	+	1008	97.67%
	-	24	2.32%

Discussion: Present study has been carried out to determine distribution pattern of ABO and Rh-D blood groups in common people of Raipur city. The collected data on blood group can be used for development of donor data base for collection of blood and blood products which will be helpful for establishment of blood banks as well as transplant services .currently number of studies have been suggested that the use of stem cell prod-

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uct hold a huge prospective for treating damage or diseased tissue of body [6].These data will also help in organ transplantation,development of legal medicine and anthropological study of group or society[7].This study showed that among common people of Raipur city ,blood group B was commonest followed by O group.The distribution pattern was B>O>A>AB.Study in neighbouring country Nepal showed different picture of higher frequency of group A [8].

The prevalence of Rh-D positive remains very high compared to Rh-D negative blood throughout world.Our study also followed global trend of much higher Rh positive than Rh negative blood group. Frequency of Rh positive among Cauasians,Blacks and asian were 85%,92%,and 99% respectively[9].

Conclusions :Knowledge of distribution of ABO,Rh blood group in any population is useful in health care planning. Every transfusion centre should have record of frequency of blood group system in their population .It helps in inventory management.It is also important for clinical studies ,for reliable geographical information and forensic studies.

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