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Expert Column

# Being Aware Of Your Blood Group

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**Do You Know Your Blood Group?**

When you hear about blood group, what comes to your mind? Do you imagine blood group A, B, O, AB, positive and negative? Or do you only know the blood group and A, B, AB or O without knowing whether it is positive or negative? What does "positive" and "negative" in your blood group mean? The International Society of Blood Transfusion (ISBT) reports that there are more than 40 different types of human blood groups have been identified to date. ABO and Rh blood groups are two of the most widely used blood group types. Besides, other blood group system that are commonly used and important in the field of medicine are the 'Kell', 'Duffy', 'MNS' and 'Kidd' systems. An individual's blood type is inherited from their parents.

Blood group types are categorised according to the antigens found on the surface of red blood cells. This antigen is in the form of proteins, carbohydrates, glycoproteins or glycolipids. If this antigen is not present, the body will produce a protein that will fight this antigen, known as antibody. This antibody either naturally occurring or produced when the body is exposed to this antigen. This antibody will attack the antigen and will destroy it. When this occurs, the red blood cell will destroy and the condition called haemolysis.

Blood groups A, B, O, and AB make up the ABO system. While there are Rh-positive and Rh-negative groups in the Rh system. It is common practice to combine these two systems. As a result, blood group A positive, A negative, and so forth are frequently mentioned.

**ABO Blood System.**

For the ABO blood system, antigens and antibodies are produced naturally. Individuals of blood group A, have antigen A and antibody B while blood group B has antigen B and antibody A. Individuals with blood group AB, have antigen A and antigen B. This individual does not have antibodies against A or B antigen. Individuals of blood group O do not have antigen A or antigen B but it has antibody towards antigen A and B.

In ABO blood group system, each blood group can only accept the same blood group. However, there are privileges for blood groups O and AB. Blood group O can be accepted by all blood groups A, B, O and AB. Therefore, blood group O is known as a universal donor. Whereas an individual with blood group AB can receive all blood groups, namely blood groups A, B, AB and O. Blood group AB is known as a universal recipient.

| Blood group | Antigen present | Antibody present | Type of blood can received |
|---|---|---|---|
| A | A | B | A, O |
| B | B | A | B, O |
| AB | A, B | - | A, B, AB, O |
| O | - | A, B | O |

**Rh Blood System.**

Rh blood group system have RhD and RhCE system. The most common used and important is RhD system. The RhD system categorised based on the present or absent of antigen D. Present of D antigen termed as RhD positive, while the absent of D antigen termed as RhD negative. In RhD system, RhD negative blood did not have D antigen, but it can developed D antibody when exposed to D antigen. Thus, RhD negative blood only can receive RhD negative blood, but RhD positive can receive both RhD positive or RhD negative blood.\

What is the relation of ABO blood system and Rh blood system? Both blood group system is independently controlled by specific gene. However, these two blood group system commonly used together in determining an individual blood group as it is clinically important. Not to say other blood groups less important, but these two blood groups are important in the transfusion service in order to supply the specific blood group in case of blood transfusion needed.

**Why Knowing Your Blood Group Is Important?**

As previously stated, when transfusion safety is a concern, certain blood groups can receive specific blood groups. It's critical that you are aware of your blood type so that you can alert medical professionals as needed.

Apart from that, the RhD blood group is crucial for the management of both the mother and the foetus in a pregnant woman. For instance, a RhD negative blood individu who is pregnant with RhD positive baby, they susceptible to developing D antibody when sensitised. The antibody then will transfer to the foetus trough placenta and cause the fetal blood haemolysed. To prevent it, these pregnant ladies will be given an injection with immunoglobulin which may help interfere with the process and prevent antibody development. If the individual already has antibody towards D antigen, the doctor will monitor closely the fetus and mother and specific precautions will be taken.

In general, knowing about blood group is useful. It is one of your special identities. In clinical setting, the blood group is a critical information. The information is used in many areas such as identification, in transfusion, and also transplant.

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