



Department of Anesthesia Techniques

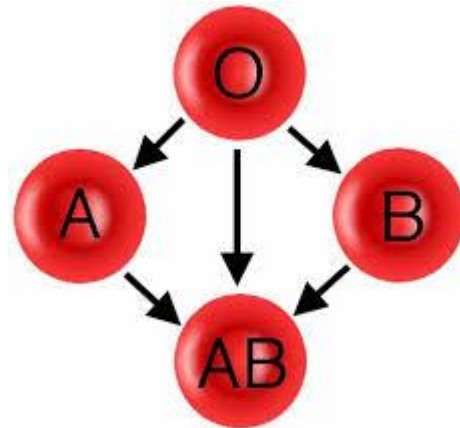
Title of the lecture

BLOOD GROUP

by

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BLOOD GROUP

- Blood group means classification of blood based on the presence or absence of inherited antigenic substances on the surface of red blood cells (RBCs).
- These antigens may be proteins, carbohydrates, glycoproteins, or glycolipids, depending on the blood group system.
- Some of these antigens are also present on the surface of other types of cells of various tissues.

TYPES OF BLOOD GROUP

- **Type A:** blood has RBCs with surface antigen A only AND your plasma contains anti-B antibodies. Reported is A
- **Type B:** blood has RBCs with surface antigen B only AND your plasma contains anti-A antibodies. Reported is B
- **Type AB:** blood has RBCs with both A and B surface antigens AND your plasma has neither anti-A nor anti-B antibodies. reported is AB
- **Type O :** blood has RBCs lacking both A and B surface antigens AND your plasma contains both anti-A and anti-B antibodies. reported is O

BLOOD GROUP

ANTIGEN + ANTIBODY PRESENT

A



ANTIGEN-A



MAKES ANTI-B

B



ANTIGEN-B



MAKES ANTI-A

AB



ANTIGENS A & B

MAKES NEITHER ANTI-A NOR ANTI-B

O



NEITHER A OR B ANTIGEN



MAKES BOTH ANTI-A AND ANTI-B

Blood group	Antigen(s) present on the red blood cells	Antibodies present in the serum
A	A antigen	Anti-B
B	B antigen	Anti-A
AB	A antigen and B antigen	None
O	None	Anti-A and Anti-B

- Determination of blood group depends on immunological reactions between antigen and antibody.
- Antigens are also called agglutinogens because of their capacity to cause agglutination of RBCs.

RH SYSTEM

- The Rhesus system (Rh) is the second most important blood group system in humans. The most significant and immunogenic Rhesus antigen is the RhD antigen
- Depends on the presence and absence of another antigen on the surface of RBC called Rhesus(RH).
- The term Rh positive (Rh+) indicates the presence of the Rh surface antigen.
- The absence of this antigen is indicated as Rh negative(Rh-).

- The ABO and Rh blood grouping system is based on agglutination reaction. When red blood cells carrying one or both the antigens are exposed to the corresponding antibodies they interact with each other to form visible agglutination or clumping.

Material Required

Anti A

Anti B

Anti RhD

Cavity slide

Disposable Mixing Stick

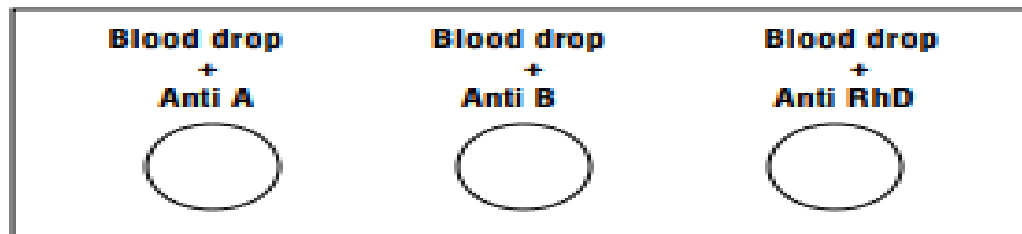
Blood Lancet

70% Alcohol/ Spirit

Cotton










PROCEDURE

- Clean the fingertip to be pierced with spirit or 70% alcohol (usually ring or middle finger).
- With the help of the sterile lancet, pierce the fingertip and place one drop of blood in each of the cavities.
- Add one drop of antiserum into each cavity as shown below:





LABOESCUELA

No.	Anti-A	Anti-B	Anti-D
1			
2			
3			

Note:- the Agglutination of blood occur when presence of same antigene and antibody

INTERPRITATION

- If agglutination is observed when blood is mixed with Anti A reagent, then the individual is said to have blood group “A”.
- If agglutination is observed when blood is mixed with Anti B reagent, then the individual is said to have blood group “B”.
- If agglutination is observed when blood is mixed with Anti A and Anti B reagent, then the individual is said to have blood group “AB”.
- If no agglutination is observed when blood is mixed with Anti A and Anti B reagent, then the individual is said to have blood group “O”.

Thank You

The text "Thank You" is written in a highly decorative, black calligraphic script. The letters are thick and feature elegant flourishes, particularly on the 'T', 'Y', and 'o'. The text is accented with clusters of small, four-pointed gold stars and dots. One cluster is positioned at the bottom left of the 'T', and another is at the top right of the 'o'. The entire phrase is set against a plain white background.

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