Aim: Determination of blood group

REFERENCE: 1. Haematology, Practical Human Anatomy And Physiology, S.R. Kale et al., Nirali Prakashan, Eight Edition, 2002, pp. 33-34

Background: The blood group detection is called 'Typing of Blood'. The blood of different people has been classified into different groups depending on the nature of the agglutinogen present in them. There are more than ten different blood grouping systems, but the ABO is accepted universally.

Significance: Intravenous administration of blood to help replenish excess blood loss due to haemorrhage otherwise known as blood transfusion. Prior to giving a transfusion, it is necessary to determine the blood group of the recipient and the blood group of the donor so that the blood will be appropriately matched. Blood transfusion is essential in the following conditions:

1. Haemorrhage either acute or chronic

2. Shock- to increase blood volume

3. Bllod diseases where the haemoglobin is below 40% - aplastic anaemia, haemorrhagic, haemophilia.

4. In carbon monoxide poisoning.

APPARATUS REQUIRED: Spirit, cotton, needle, antisera (α, β, δ), glass slide, compound microscope

METHOD: The blood group detection which is the typing of blood is carried out using the Slide Technique.

PROCEDURE:

1. The fingertip of the subject is sterilised with spirit, and a bold prick is made to have a free flow of blood.

2. A drop or more blood is removed. This is then diluted with approximately 60% of saline.

3. Two drops of this suspension are placed on a microscope slide.

4. A drop of anti-A agglutinin serum is mixed with one of the drops of suspension, while a drop of anti-B serum is mixed with the second drop of cell suspension.

5. After allowing several minutes for the agglutination process to take place, the slide is observed under a microscope to determine whether or not the cells have clumped. If they have clumped, one knows that an immune reaction has resulted between the serum and cells.

Red blood cells	**Sera**	
(Groups)	**Anti-A**	**Anti-B**
O	-	-
A	+	-
B	-	+
AB	+	+

The above illustrates the reaction with each of the four different blood types.

1. Group O red blood cells have no agglutinogens and do not react with either of the sera.

2. Group A red blood cells have agglutinogens; therefore, agglutinates with anti-A agglutinins.

3. Group B red cells have B agglutinogens and, therefore, agglutinates with anti-B agglutinins.

4. Group AB red cells have both A and B agglutinogens and, therefore, agglutinate with both types of serum