

SOP

Blood Grouping Procedure

Department of Pathology

Faculty of Medicine

UWUSL

Standard Operating Procedure (SOP) on Blood Grouping Procedure

Title

Blood Grouping Procedure (ABO and Rh Typing)

Issued By

Faculty of Medicine, Uva Wellassa University Sri Lanka

(1) Purpose

To provide a standardized method for performing blood grouping using ABO and Rh typing in laboratory practical sessions, ensuring accurate identification of blood groups.

(2) Scope

Applicable to all medical students and laboratory staff involved in hematology and pathology practical sessions.

(3) Responsibilities

(3.1) Students

- Handle blood samples carefully
- Follow correct blood grouping procedures
- Record results accurately
- Maintain laboratory safety

(3.2) Academic Staff

- Guide students during the procedure
- Ensure proper interpretation of results
- Supervise adherence to SOP

(3.3) Laboratory Supervisor

- Ensure availability of reagents and materials
- Maintain laboratory equipment
- Ensure proper disposal of biohazard materials

(4) Safety Considerations

- Treat all blood samples as potentially infectious
- Wear gloves and laboratory coats
- Avoid direct contact with blood
- Dispose of contaminated materials properly
- Wash hands after completing the procedure

(5) Materials Required

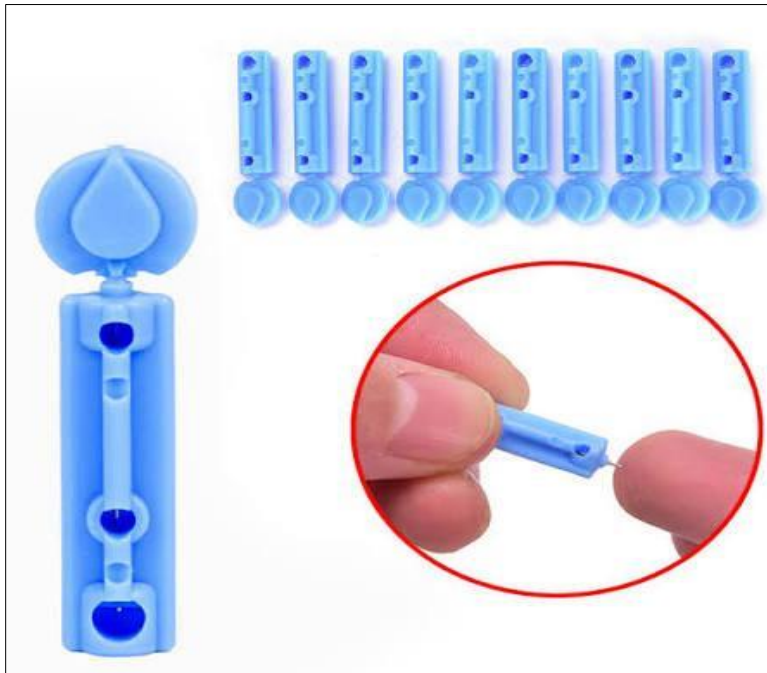
- Blood sample
- Sterile glass test tubes



- Anti-A serum
- Anti-B serum
- Anti-D serum



- Sterile lancet (if capillary blood is used)



- Cotton wool
- Normal saline
- Gloves



(6) Principles of Blood Grouping

- Blood grouping is based on antigen-antibody agglutination reaction
- Red blood cells contain specific antigens on their surface
- Anti-A serum reacts with A antigen
- Anti-B serum reacts with B antigen
- Anti-D serum detects Rh factor
- Agglutination indicates the presence of the corresponding antigen

(7) Procedure

(7.1) Preparation

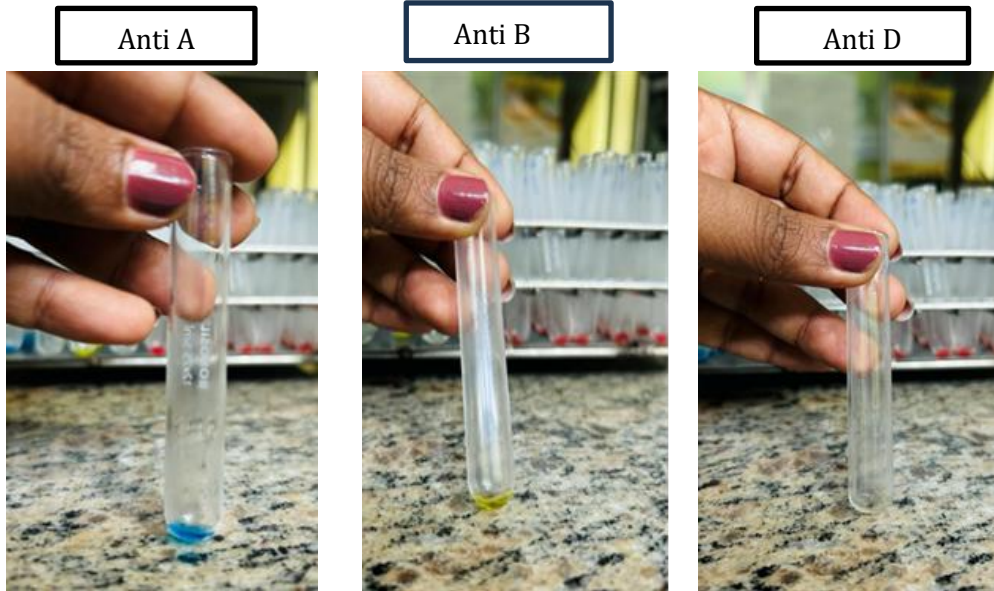
- Wear gloves and prepare materials



- Label the corresponding tube
- Clean the working area properly

(7.2) Placement of Antisera

- Place one drop of A, B, D antisera to the corresponding tubes.



(7.3) Addition of Blood Sample

- Make a 5% red cell suspension using the patient red cells and isotonic saline



- Add a small drop of the patient red cell suspension to each tube.



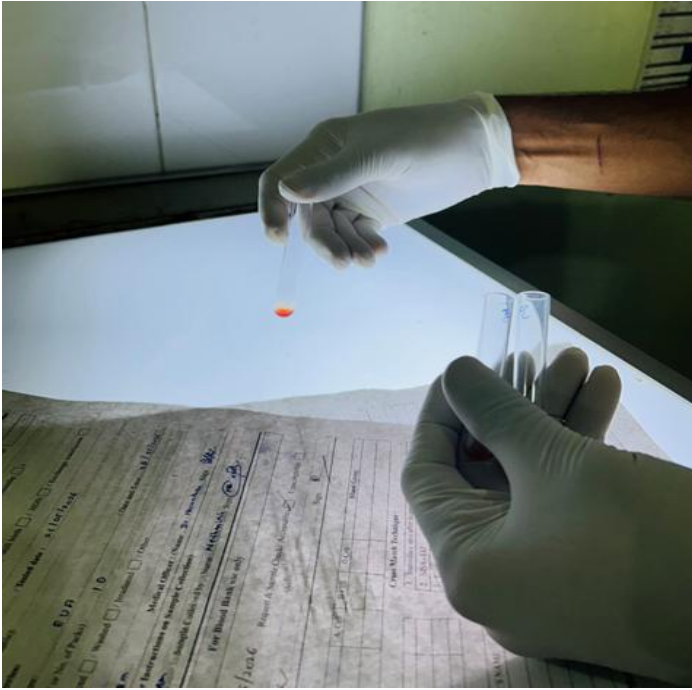
(7.4) Incubation Period and Agglutination Check

- Centrifuge tubes at 1000 rpm for 1-2 minutes or 2000-3000 rpm for 20sec to 1 min, gently resuspend the red cell button and observe for agglutination.
- Any agglutination reaction observed is regarded as a positive reaction.

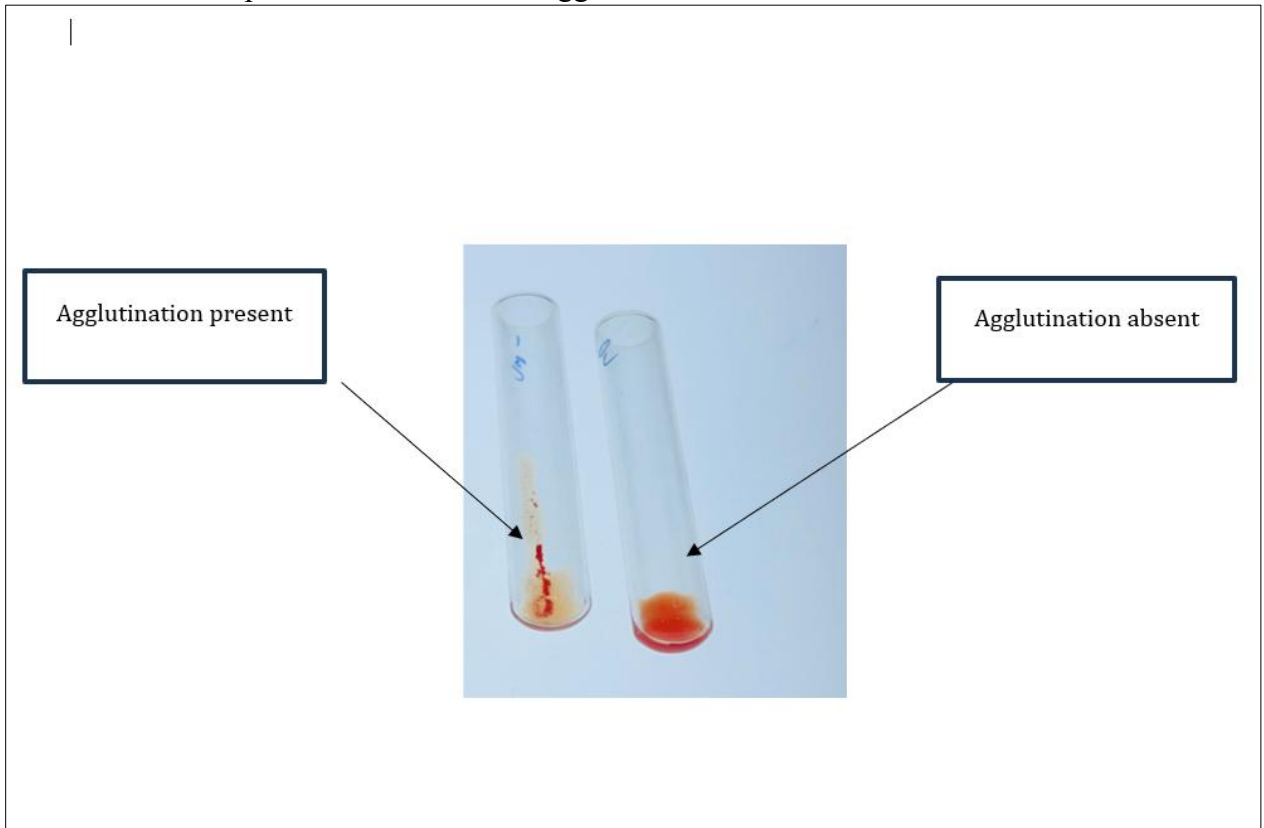


(7.5) Observation

- Observe for agglutination under adequate lighting







































- Record the presence or absence of agglutination



(8) Interpretation of Results

- Anti-A positive only → Group A
- Anti-B positive only → Group B
- Anti-A and Anti-B positive → Group AB
- No agglutination with Anti-A or Anti-B → Group O
- Anti-D positive → Rh Positive
- Anti-D negative → Rh Negative

Blood Type - ABO TYPING				
BLOOD TYPE	ANTI-A	ANTI-B	ANTI-D	CONTROL
O-POSITIVE				
O-NEGATIVE				
A-POSITIVE				
A-NEGATIVE				
B-POSITIVE				
B-NEGATIVE				
AB-POSITIVE				
AB-NEGATIVE				
INVALID				

(9) Recording Observations

- Record agglutination reactions clearly
- Identify ABO and Rh blood group
- Enter findings in laboratory records accurately

(10) Post-Procedure

- Dispose of used materials safely
- Clean the working area
- Remove gloves and wash hands
- Store reagents properly after use

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