



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

Department:	Laboratory and Blood Bank (Haematology)		
Document:	Internal Policy and Procedure		
Title:	Erythrocyte Sedimentation Rate		
Applies To:	All Haematology Staff		
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1. PURPOSE:

- 1.1 It is a measure of the rate at which red cells fall down when anticoagulant blood is allowed to stand vertically and undisturbed, leaving a clear layer of plasma.

2. DEFINITONS:

- 2.1 ESR: Erythrocyte sedimentation rate.

3. POLICY:

- 3.1 The correct method for measuring the erythrocyte sedimentation rate (ESR).
3.2 Blood collected into an anticoagulant is placed in a long graduated tube held in a vertical position. The red cells settle to the bottom leaving a layer of plasma above. The height of the column of plasma after 1 hour indicates the Sedimentation rate of the erythrocytes (red cells).

4. PROCEDURE:

- 4.1 The red cells sedimentation occurs in three phase:
4.1.1 Cells tend to aggregate and form rouleaux and only fall slightly.
4.1.2 The cells packed and fall in increase speed.
4.1.3 Cells complete their settlement at low speed.
The speed of rouleaux formation is increased by the increase of fibrinogen and globulin concentration in the plasma, also the ESR dependent on the number of red cells or PCV value, thus in anemic patients an increased ESR is recorded because of low PCV a decrease in ESR is present in polycythemic patients and reading of 0 mm/hr is not unusual.
- 4.2 Fill the test tube containing 0.2ml of sodium citrate up to the graduation mark with blood.
4.3 Mix immediately by gently capsizing three to four times.
4.4 Insert the pipette through the pierce able stopper. The blood will automatically rise to zero
4.5 It is absolutely essential that the pipette makes firm contact with the Bottom of the tube.
4.6 Wait 1 hour (set the timer to ring), then note the height of the column of plasma in mm graduations starting from the 0 mark at the top of the tube.
4.7 RESULTS : The result is expressed as follows: ESR...mm/hr
4.8 NORMAL RANGE :
- 4.8.1 Male
4.8.1.1 17 – 50 years: < 10 mm
4.8.1.2 > 50 years: < 14 mm.
4.8.2 Female
4.8.2.1 17 – 50 years: < 12 mm.
4.8.2.2 > 50 years : < 20 mm.

4.9 INTERPRETATION:

An increase in ESR value indicate an acute or more chronic phase, increase in the concentration of plasma proteins, particularly those of larger molecular size such as fibrinogen. In acute phase proteins synthesis in the liver increases in response to any tissue inflammation or other tissue injury such as surgery trauma, immunological injury, infection, malignancy, pregnancy.

5. MATERIALS AND EQUIPMENT:

5.1 Long graduated tube

6. RESPONSIBILITIES:

6.1 Assigned laboratory technician.


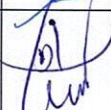
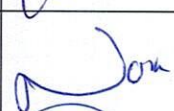
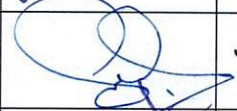


7. APPENDICES:

N/A

8. REFERENCES:

- 8.1 A Manual Laboratory & Diagnostic Tests (Lippincott Williams & Wilkins)
- 8.2 Medical Encyclopedia (Medlin Plus)
- 8.3 Clinical Laboratory Methods/ John D. Bauer – MD- Mosby
- 8.4 Practical Hematology (Sir John V. Dacie)

9. APPROVALS:

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