PIPADOR REVISION

MRCOG Part 1 Revision Notes

Haematology Results

DATA INTERPRETATION • LECTURE 441

VISUAL EXAMINATION REVISION NOTES

2026 Edition

441

MRCOG PART 1 REVISION NOTES | DATA INTERPRETATION

Haematology Results

Interpreting FBC, iron studies and coagulation in pregnancy — definitions, reference ranges and worked cases

Hb < 110 / 105	Ferritin < 30	Platelets	Fibrinogen ↑
Anaemia (1st / 2nd–3rd trimester)	Iron deficiency	Mild fall normal	4–6 g/L at term

■ KEY FACTS: Learning objectives

- Define the key haematology indices (Hb, MCV, ferritin, WCC, platelets, PT, APTT, fibrinogen, Kleihauer) and their normal ranges in pregnancy.
- Interpret anaemia, thrombocytopenia and coagulation results in pregnancy.
- Apply a structured approach to clinical haematology scenarios.

441.1 Key definitions and reference values

Test	What it measures	Non-pregnant	Pregnancy / notes
Haemoglobin (Hb)	Oxygen-carrying protein concentration	120–150 g/L	Anaemia: < 110 (1st tri), < 105 (2nd/3rd), < 100 g/L postpartum (BSH)
MCV	Average red cell size	80–100 fL	• ↓ iron deficiency/thalassaemia • ↑ B_{12}/folate • Slight ↑ normal in pregnancy
Ferritin	Iron stores	15–150 µg/L	< 30 µg/L = iron deficiency in pregnancy; ↑ falsely with inflammation
White cell count	Leucocytes	4–11 × 10^9/L	Up to ≈ 15 in pregnancy; ≈ 25 in labour/postpartum (neutrophilia)
Platelets	Thrombocytes	150–400 × 10^9/L	Fall ≈ 10% (dilution); gestational thrombocytopenia usually > 70–80
PT / APTT	Extrinsic / intrinsic clotting	PT 11–14 s; APTT 25–35 s	Slightly SHORTER in pregnancy
Fibrinogen	Clotting factor I	2–4 g/L	4–6 g/L at term; < 2 g/L in PPH predicts severe bleeding
D-dimer	Fibrin breakdown	< 0.5 mg/L	Rises progressively — not useful to exclude VTE in pregnancy
Kleihauer / flow cytometry	Fetal cells in maternal blood (FMH)	—	Guides extra anti-D after > 20 weeks

■ IN PLAIN ENGLISH: Haematology in pregnancy

Pregnancy **dilutes the blood** (plasma volume rises more than red cell mass), so Hb and platelets fall slightly, while the clotting system is **switched up** (fibrinogen and factors rise) to prepare for birth.

441.2 Anaemia

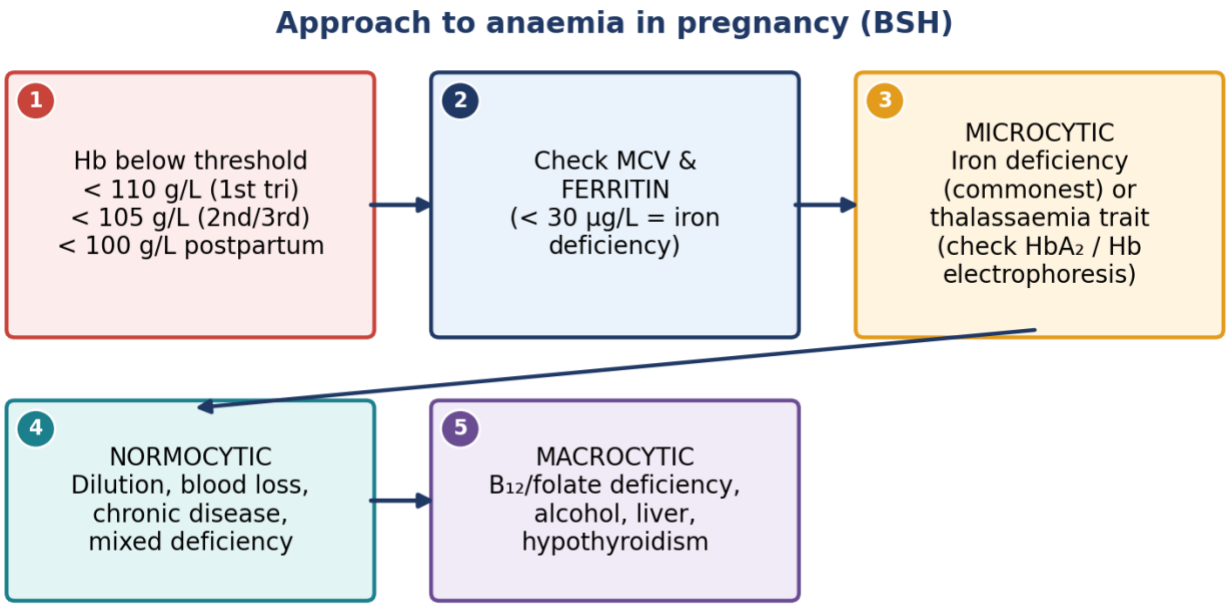


Figure 441.1 — Approach to anaemia in pregnancy

441.3 Thrombocytopenia and coagulation

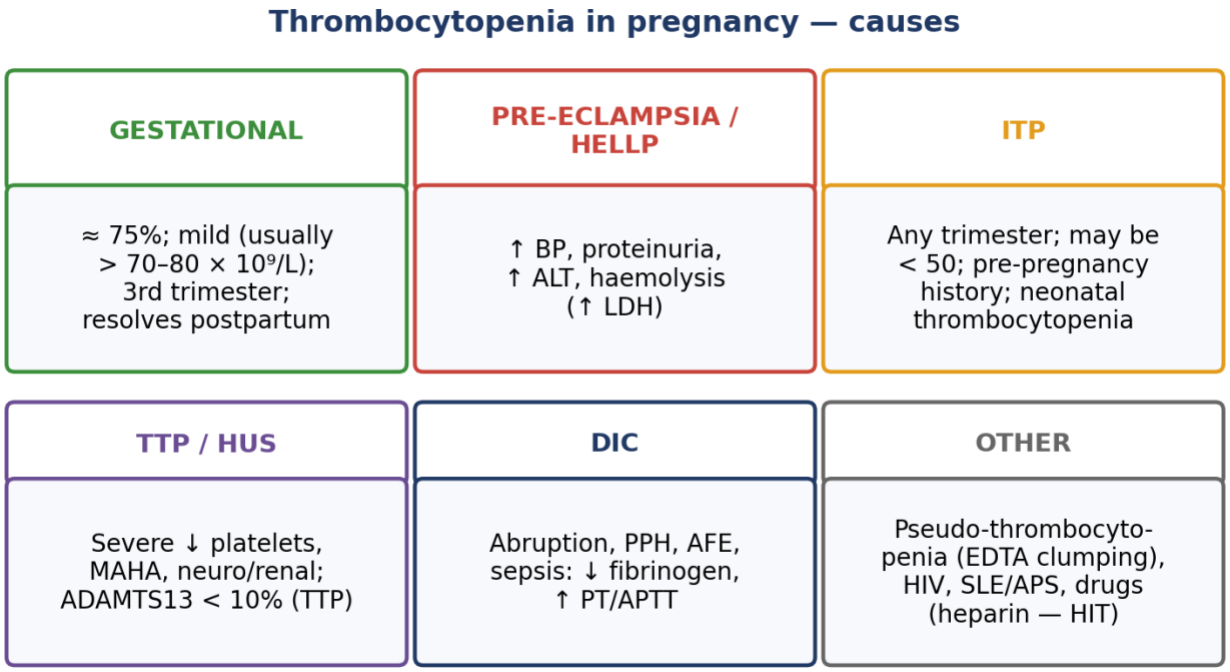


Figure 441.2 — Causes of thrombocytopenia in pregnancy

Pattern	Interpretation
↓ Platelets, ↓ fibrinogen, ↑ PT/APTT, ↑ D-dimer	DIC (abruption, AFE, sepsis, massive PPH)
↓ Platelets, ↑ ALT, ↑ LDH, schistocytes	HELLP
Isolated ↑ APTT, not corrected by mixing	Lupus anticoagulant (APS) — paradoxically prothrombotic
Isolated ↑ APTT, corrected by mixing	Factor deficiency (e.g. haemophilia carrier, von Willebrand)

Pattern	Interpretation
↑ PT only	Warfarin, vitamin K deficiency, liver disease (AFLP)

441.4 Worked cases

■ WORKED EXAMPLE

Case 1 — 28 wk: Hb 92 g/L, MCV 72 fL, ferritin 8 µg/L → **iron-deficiency anaemia** → oral iron (e.g. 1 tablet daily/alternate days), recheck Hb in 2–3 weeks (expect ↑ ≈ 10 g/L); IV iron if intolerant or late gestation.

Case 2 — booking: Hb 108, MCV 64, ferritin 60 → **microcytosis with normal ferritin** → haemoglobinopathy screen: HbA_2 5% → **β-thalassaemia trait** → test partner urgently.

Case 3 — 37 wk, BP 160/110, platelets 68, ALT 180, LDH 900 → **HELLP**.

Case 4 — abruption: platelets 60, fibrinogen 1.1 g/L, PT 19 s → **DIC** → resuscitate, deliver, cryoprecipitate/FFP/platelets.

■ COMMON PITFALLS

Using non-pregnant Hb thresholds; forgetting ferritin can be normal/high with infection.

Diagnosing thrombocytopenia from a clumped sample (repeat in citrate).

Using D-dimer to exclude VTE in pregnancy.

441.5 Must-know summary

■ EXAM TIP

- Anaemia: Hb < 110 (T1), < 105 (T2/3), < 100 g/L postpartum; ferritin < 30 = iron deficiency.
- Microcytic + normal ferritin → think thalassaemia trait (HbA_2 > 3.5%).
- Gestational thrombocytopenia usually > 70–80 × 10^9/L; low platelets + ↑ BP/ALT → HELLP.
- Fibrinogen ↑ in pregnancy — < 2 g/L in PPH is serious; D-dimer not useful.

■ MNEMONIC / MEMORY AID

Anaemia thresholds — '110, 105, 100' (1st trimester, later pregnancy, postpartum).