PIPADOR REVISION

MRCOG Part 1 Revision Notes

Microbiology Results

DATA INTERPRETATION • LECTURE 443

VISUAL EXAMINATION REVISION NOTES

2026 Edition

443

MRCOG PART 1 REVISION NOTES | DATA INTERPRETATION

Microbiology Results

Interpreting cultures, swabs, NAATs and serology in pregnancy — definitions and worked cases

≥ 10^5 CFU/mL	IgM / IgG	Avidity	NAAT
Significant bacteriuria	Recent vs past	Low = recent	Detects DNA/RNA

■ KEY FACTS: Learning objectives

- Define culture, colony-forming units, sensitivity testing, serology (IgM, IgG, avidity, seroconversion) and NAAT/PCR.
- Interpret urine cultures, swabs, blood cultures and infection serology in pregnancy.
- Apply a structured approach to microbiology results with worked cases.

443.1 Key definitions

Term	Definition
Culture	Growing organisms from a sample to identify them
CFU/mL	Colony-forming units per mL — quantity of bacteria in urine
Sensitivity (susceptibility) testing	Which antibiotics the organism is sensitive (S) or resistant (R) to
Gram stain	Rapid microscopy classifying bacteria as Gram-positive (purple) or Gram-negative (pink)
NAAT / PCR	Nucleic acid amplification test — detects organism DNA/RNA (chlamydia, gonorrhoea, viruses)
IgM	Early antibody — suggests recent/current infection (can persist or be false-positive)
IgG	Later antibody — past infection or immunity
IgG avidity	• Strength of IgG binding — LOW avidity = infection in the last ~3 months • HIGH = older infection
Seroconversion	Change from IgG-negative to IgG-positive on paired samples — proves recent infection
Contaminant	Organism from skin/collection rather than true infection (e.g. coagulase-negative staphylococci in one blood culture bottle)

■ IN PLAIN ENGLISH: Microbiology results

Cultures and NAATs find the germ itself; **serology** finds the body's antibody response. IgM says 'recent', IgG says 'past or immune' — but IgM can be misleading, so avidity or old stored blood help date the infection.

443.2 Serology

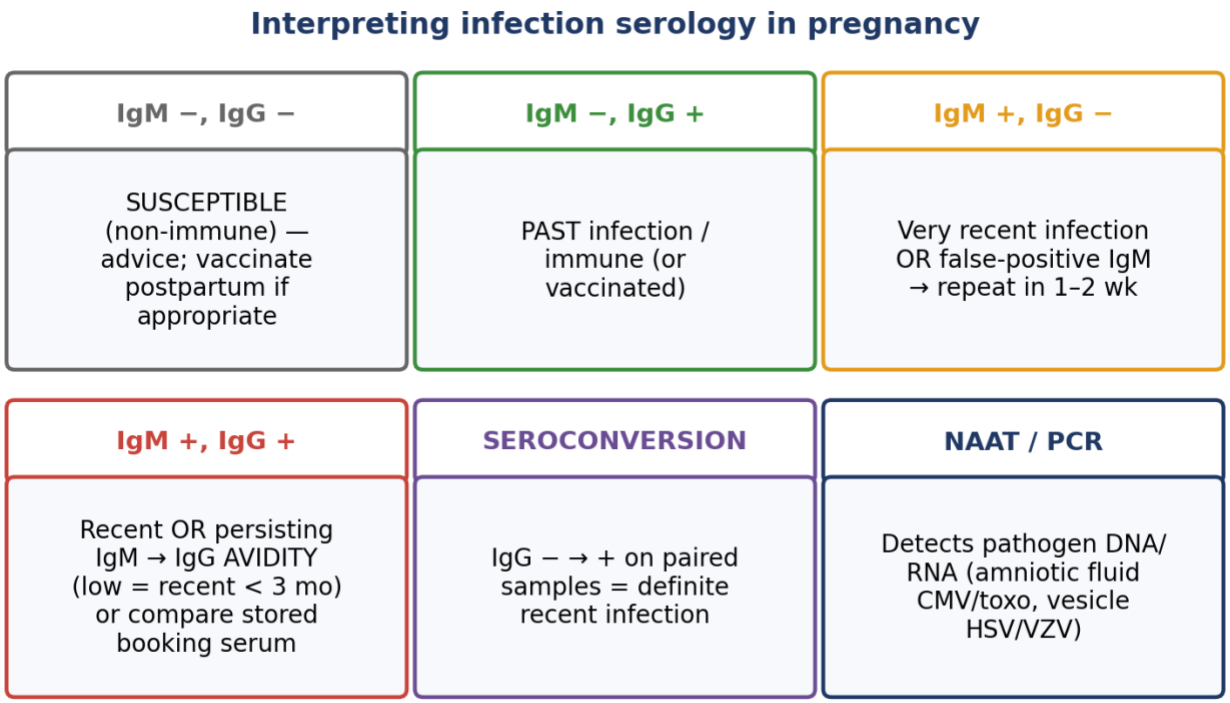


Figure 443.1 — Interpreting infection serology

443.3 Urine and swabs

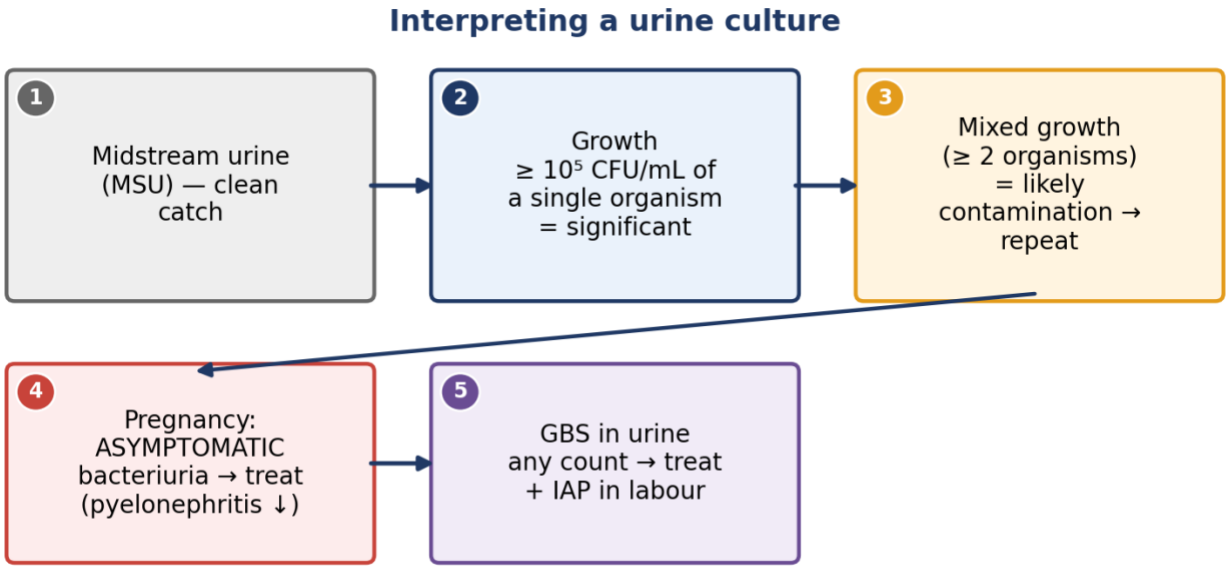


Figure 443.2 — Interpreting a urine culture

Sample	Interpretation
High vaginal swab — clue cells, pH > 4.5	Bacterial vaginosis
HVS — yeasts/pseudohyphae	Candida (treat if symptomatic)
HVS/LVS + rectal — GBS	GBS carriage → IAP in labour
Endocervical/vulvovaginal NAAT	Chlamydia, gonorrhoea (culture for gonorrhoea sensitivities)
Blood culture — Gram-positive cocci in chains	Streptococcus (GAS — urgent)

Sample	Interpretation
Blood culture — Gram-negative rods	E. coli, Klebsiella (urinary/genital source)

443.4 Worked cases

■ WORKED EXAMPLE

Case 1 — booking MSU: E. coli > 10^5 CFU/mL, asymptomatic → **asymptomatic bacteriuria** → treat per sensitivities (e.g. nitrofurantoin), test of cure.

Case 2 — 14 wk, rash contact: CMV IgM +, IgG + → **IgG avidity LOW** → primary infection in last 3 months → fetal medicine referral; consider amniocentesis (PCR) ≥ 6 weeks after infection and ≥ 20 weeks.

Case 3 — chickenpox contact at 20 wk, VZV IgG negative → **non-immune** → aciclovir post-exposure prophylaxis (days 7–14).

Case 4 — postpartum fever: blood cultures grow **Group A Streptococcus** → sepsis bundle, benzylpenicillin + clindamycin, inform UKHSA.

■ COMMON PITFALLS

Treating a single positive IgM as proof of recent infection.

Mixed growth on MSU treated as UTI (repeat).

One bottle of coagulase-negative staph treated as true bacteraemia.

443.5 Must-know summary

■ EXAM TIP

- MSU ≥ 10^5 CFU/mL single organism = significant; treat asymptomatic bacteriuria in pregnancy.
- IgM = recent (or false +); IgG = past/immune; low avidity = infection < 3 months; seroconversion confirms.
- NAAT for chlamydia/gonorrhoea/viruses; blood cultures before antibiotics in sepsis.
- Compare with booking (stored) serum.

■ MNEMONIC / MEMORY AID

'IgM = iMmediate (recent); IgG = Gone (past)'.