PIPADOR REVISION

MRCOG Part 1 Revision Notes

Antivirals

PHARMACOLOGY • LECTURE 377

VISUAL EXAMINATION REVISION NOTES

2026 Edition

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MRCOG PART 1 REVISION NOTES | PHARMACOLOGY

Antivirals

Mechanisms of antiviral drugs, adverse effects, safety and strategies in pregnancy

Aciclovir	Oseltamivir	Tenofovir	Ribavirin
Safe throughout pregnancy	Within 48 h — pregnant = high risk	HBV & HIV	Teratogenic

■ **KEY FACTS: Learning objectives**

- Describe the mechanisms of action of the main antiviral drugs.
- Describe adverse effects and use in pregnancy and breastfeeding.
- Describe antiviral strategies in O&G (HSV, VZV, CMV, influenza, HBV, HIV, COVID-19).

377.1 Mechanisms

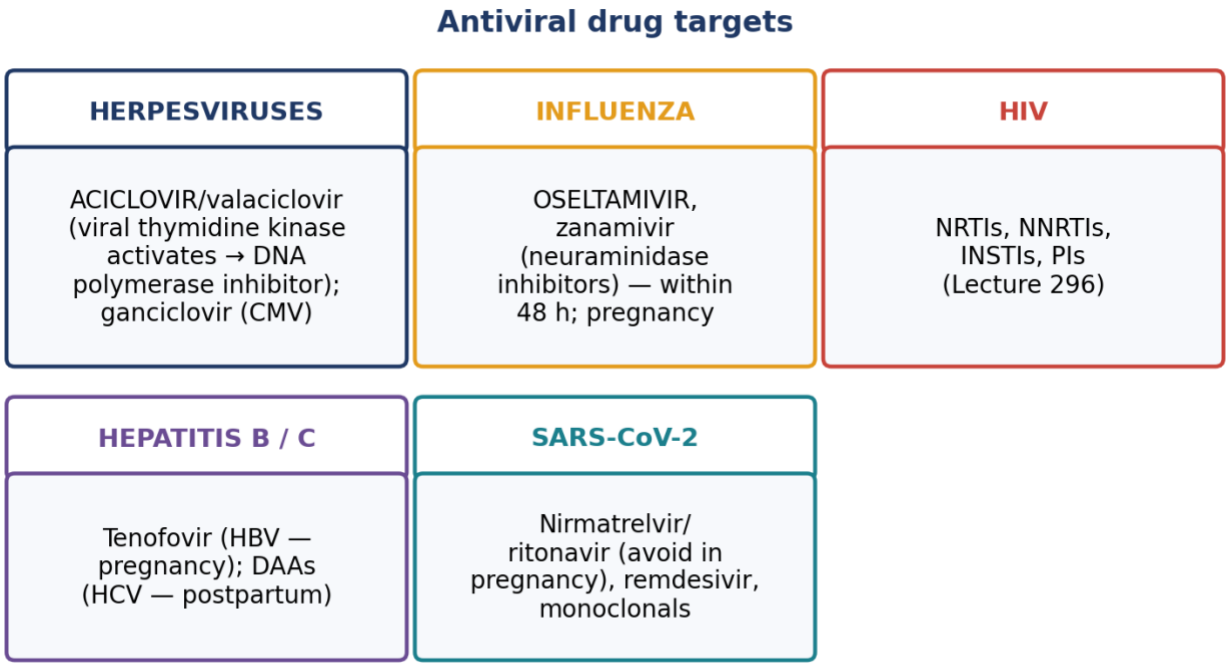


Figure 377.1 — Antiviral targets

- **Aciclovir** is a guanosine analogue activated by **viral thymidine kinase** (selective for infected cells), then host kinases → triphosphate inhibits viral DNA polymerase (chain termination)
  - Valaciclovir is the oral prodrug with better bioavailability
  - Resistance through TK mutations.
- **Ganciclovir/valganciclovir** (CMV — UL97 kinase) — myelosuppression; teratogenic/carcinogenic in animals.
- **Neuraminidase inhibitors** stop release of new influenza virions.
- Adverse effects: aciclovir — nephrotoxicity (crystalluria) at high IV doses (hydrate), neurotoxicity in renal impairment.

377.2 Use in pregnancy

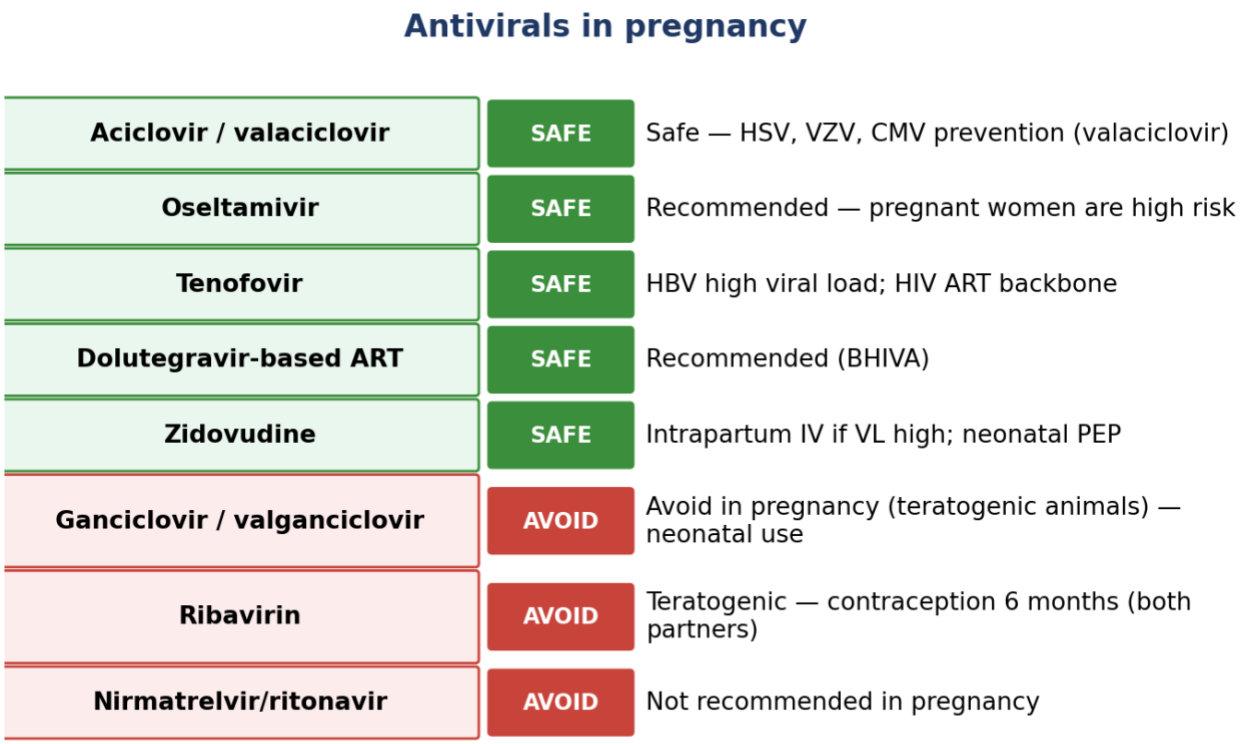


Figure 377.2 — Antivirals in pregnancy

Indication	Strategy
Genital herpes	Aciclovir episode treatment; suppression from 36 weeks
Chickenpox	• Oral aciclovir within 24 h (≥ 20 wk) • IV for complications • PEP (aciclovir days 7–14) after exposure in non-immune
Influenza	• **Oseltamivir** treatment (and prophylaxis after exposure) — do not wait for test results in severe illness • Vaccinate
CMV	• Valaciclovir 8 g/day after early primary infection (specialist) • Neonatal valganciclovir
Hepatitis B	Tenofovir from ≈ 28–32 wk if high viral load
HIV	• Lifelong ART (dolutegravir-based) • Intrapartum zidovudine if detectable VL • Neonatal PEP
COVID-19	• Supportive care, steroids if hypoxic • Specific antivirals per current national guidance

377.3 Must-know summary

■ EXAM TIP

- Aciclovir needs viral thymidine kinase → selective DNA polymerase inhibition; safe in pregnancy.
- Oseltamivir for influenza in pregnancy (high risk) within 48 h.
- Tenofovir for HBV high viral load; ART for HIV.
- Avoid ribavirin and ganciclovir/valganciclovir in pregnancy.

■ MNEMONIC / MEMORY AID

Aciclovir — 'Activated by the virus, Attacks viral DNA polymerase'.