LearnInfection
a learning platform for infection trainees

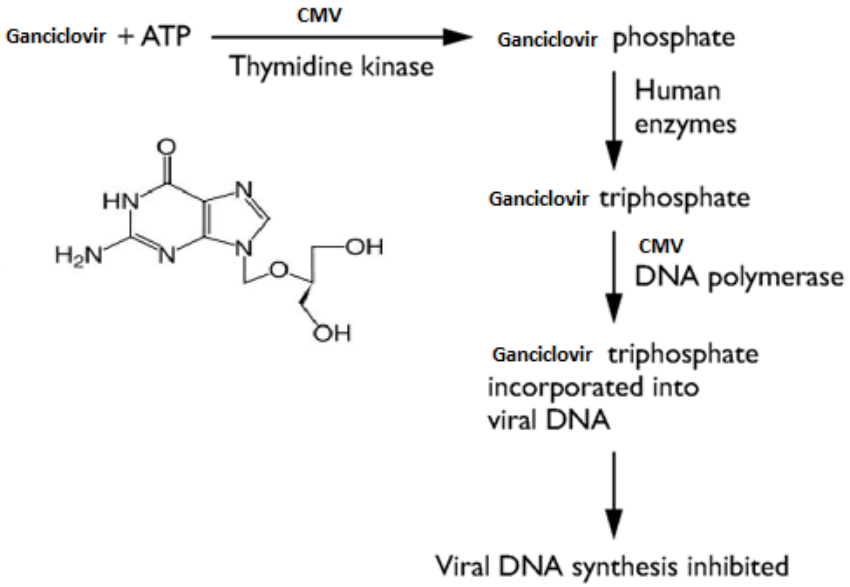
Ganciclovir

Indications: Treatment and prevention of infections with human herpes family viruses, primarily **cytomegalovirus (CMV)** infection.
Also drug of choice for symptomatic herpes B infection.

Mechanism of action: ganciclovir (GCV) is a **nucleoside analogue** of the purine guanosine.

- After drug uptake by cells, GCV is converted to **monophosphate form** by viral enzyme thymidine kinase
- Converted to its **triphosphate form** by various cellular enzymes
- Triphosphate form **competitively inhibits incorporation of deoxyguanosine triphosphate** into elongating DNA, leading to defective DNA synthesis

- GCV **inhibits viral DNA polymerase** more effectively than host cellular polymerase. Inhibition of host enzymes is the mechanism whereby drug adverse effects occur



Dose: **IV preparation only**. (oral valganciclovir available).
Treatment of CMV disease such as retinitis / colitis
Prophylaxis and prevention of CMV disease recurrence in immunosuppressed patients such as solid organ and HSCT transplant patients; or HIV related.

Adverse effects: (please see BNF)
Bone marrow suppression – significant risk (usually reversible on discontinuation of drug)
Renal toxicity
Neurotoxicity

Use in Pregnancy/ Breast feeding
Teratogenicity in animal studies
Avoid unless benefit outweighs risk

Use in renal impairment
Dose adjustment
Increased risk of toxicity