

IV Ganciclovir: Dosing and Administration in Adults - induction treatment

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**Gloucestershire Hospitals NHS
Foundation Trust**

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Objective

The aim of this guideline is to assist in the dosing and administration of intravenous ganciclovir in adults for the treatment of infection.

Introduction

Ganciclovir is an antiviral used in the treatment of severe viral infections, including cytomegalovirus (CMV). It is considered a potential teratogen and carcinogen in humans, caution should be observed in its handling.

During working hours (Monday to Friday), the injection should be reconstituted in the Pharmacy Aseptic Unit (CGH-ext 3033). If treatment is required to commence out of hours, the on-call pharmacist must be contacted. The on-call pharmacist will be able to access pre-made bags of ganciclovir **500mg in 100ml infusion**. A **proportion of the infusion bag** may then be given to administer the **required dose**.

Cautions and Contraindications

See the [Summary of Product Characteristics \(SPC\)](#) and [BNF](#) for full details

Dose

For **induction treatment** of CMV infection in adults the usual dose is 5mg/kg by intravenously infusion twice daily. Following 14-21 days of this initial treatment some patients may require maintenance dosing. This should be done on the advice of a specialist only (see SPC for details).

Renal function should also be taken into account when calculating the dose (see below).

For non-obese individuals with a BMI* <30, the dose must be calculated based on the patient's actual body weight. For obese patients with a BMI* >30 please use Obese Dosing Body Weight **ODBW.

*To calculate BMI

$$\text{BMI} = \text{Weight (kg)} / (\text{Height \{metres\}})^2$$

An example would be a man who weighs 80kg and is 1.75m tall.

$$\text{BMI} = 80\text{kg} / (1.75 * 1.75) = 80 / 3.06 = 26.1$$

** To calculate ODBW

First work out Ideal body weight as follows:

Male= 50kg + (2.3kg x height in inches over 5 feet)

Female = 45.5kg + (2.3kg x height in inches over 5 feet)

Then use the following formula to calculate ODBW:

ODBW = IBW + 0.4(Actual body weight – IBW)

Dosage in renal impairment

Dose reduction in renal impairment is as follows:

Creatinine Clearance (ml/min)	Dose
>70	5mg/kg twice daily
50-69	2.5 mg/kg twice daily
25-49	2.5 mg/kg once daily
10-24	1.25 mg/kg once daily
<10ml/min	Haemodialfiltration (HDF) -1.25mg/kg/three times per week, after HDF(<u>on dialysis days only</u>) Continuous Ambulatory Peritoneal Dialysis (CAPD) - 1.25mg/kg three times a week.

The dose in continuous renal replacement therapy (i.e. Haemofiltration in Department of Critical Care - CVVH) = 1.25 mg/kg once daily. See dosing schedule above for HDF and CAPD.

1. Administration

Out of hours

Handle as a cytotoxic as per local policy. Ganciclovir is available as a pre-made infusion bag of **500mg in 100ml** (5mg/ml). Contact the on-call pharmacist via Switchboard to obtain a supply. A **proportion of the pre-made infusion bag** may then be used to give the **required dose**. Give infusion via volumetric pump, set pump so that a proportion of the bag can be given. Give dose over one hour into a large vein with adequate blood flow. The preparation has a high pH and could potentially cause venous irritation. Do not give via rapid or bolus IV. See [Medusa](#) or [SPC](#) for further details and possible adverse effects. Any drug remaining in the bag after the required dose has been administered should be discarded as per cytotoxic disposal requirements. This should include disposal into a yellow bin with a purple lid and appropriate personal protective equipment. These can be obtained by contacting either Rendcomb or Lilleybrook ward at CGH or ward 7b (renal ward) at GRH.

During working hours

Handle as a cytotoxic as per local policy. During working hours (Monday to Friday), the injection should be reconstituted in the **Pharmacy Aseptic Unit** where the exact dose required will be prepared. Please alert pharmacy manufacturing as soon as possible on ext 3033/3032. Alternatively if the pre-prepared stock is near its expiry date this stock may be used, but please check the expiry. In this instance a **proportion of the infusion bag** may then be used to give the **required dose, as described above**. Give infusion via volumetric pump, set pump so that a proportion of the bag can be given. Give dose over one hour into a large vein with adequate blood flow. Do not give via rapid or bolus IV. The preparation has a high pH and could potentially cause venous irritation. See [Medusa](#) or [SPC](#) for further possible adverse effects. Any drug remaining in the bag after the required dose has been administered should be discarded as per cytotoxic disposal requirements. This should include disposal into a yellow bin with a purple lid and appropriate personal protective equipment. These can be obtained by contacting either Rendcomb or Lilleybrook ward at CGH or ward 7b (renal ward) at GRH.

Monitoring

Patients with impaired or fluctuating renal function may require monitoring of serum levels. Levels may also be requested at the discretion of a specialist. Blood levels should be sent to the Microbiology Dept at GRH which will forward the samples for analysis in the Reference Laboratory at Southmead Hospital. It may take several days to obtain the result. Gold topped blood tubes should be used for ganciclovir levels. Further information about ganciclovir levels can be found at: <https://www.nbt.nhs.uk/severn-pathology/requesting/test-information/ganciclovir>

Recommended (target) levels

Pre-dose (trough) = 0.5 – 1mg/L

Post dose sample: taken either 1 hour after the end of iv ganciclovir administration, or 2 hours after oral valganciclovir administration

Post- dose = 7 – 9mg/L (ganciclovir)

Post dose = 5 – 7mg/L (valganciclovir)

Levels can be repeated after 4-8 days.

References

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