Foscarnet Intravenous Infusion for Adults

Who can administer

May be administered by registered competent doctor or nurse/midwife

Important information

- This drug will ONLY be supplied on the direct recommendation of Microbiology/Infectious Diseases/Haematology team
- **Important:** The infusion bottle **contains an excess of drug** - eg patient 50kg, for 60mg/kg dose = 3,000mg. The infusion bottle contains 6,000mg so excess 3,000mg must be removed
- **Hydration is very important for this drug - see under dose for details**
- For **fluid restricted** patients, see SPC
- See under 'Dose' for adjustments required in **renal impairment**

Available preparations

Foscavir 6,000mg in 250ml bottle (24mg/ml)

Reconstitution

Already in solution

Dilute further prior to administration (peripheral use)

Infusion fluids

Sodium chloride 0.9% or Glucose 5%

Methods of intravenous administration

Intermittent Intravenous Infusion (administer using an electronically controlled infusion device)

Peripheral line (ref 1)

- **Gloves, protective eyewear and a mask** should be worn by those handling this drug
- **The drug solution needs to be diluted with an equal volume of infusion fluid to give a 12mg per ml solution**
- **Hydration required:** see under 'Dose' below for details
- **Doses of 6,000mg or less**
    - Dilute required dose with an equal volume of infusion fluid
    - Calculate the volume of drug solution required for the dose
    - Remove a volume of infusion fluid from a 500ml bag **to leave** an equal volume to the drug solution in the bag (because this method means that the drug will be diluted 50:50 (i.e. to produce 12mg/mL))
    - Add in the foscarnet solution
    - **Example for 70kg patient**

        - Drug solution = 6,000mg in 250mL
        - patient dose is 4,200mg = 175ml drug solution
        - remove 325ml infusion fluid from a 500ml bag (to leave 175ml in bag)
        - add the 175ml drug solution
    - Administer the required dose over at least 60 minutes **(120 minutes for doses greater than 60mg/kg)**

- **Doses of greater than 6,000 up to 12,000mg**
    - Dilute required dose with an equal volume of infusion fluid
    - Calculate the volume of drug solution required for the dose
    - Remove a volume of infusion fluid from a 1000ml bag **to leave** an equal volume to the drug solution in the bag (because this method means that the drug will be diluted 50:50 (i.e. to produce 12mg/mL))
    - Add in the foscarnet solution
    - **Example**
        - Drug solution = 6,000mg in 250mL
        - patient dose is 8,400mg = 350ml drug solution
        - remove 650ml infusion fluid from a 1000ml bag (to leave 350ml in bag)
        - add the 350ml drug solution
    - Administer the required dose over 120 minutes (60 minutes if dose is 60mg/kg or less)

- **Doses of greater 12,000mg- see Further information**

Central line

- **Calculate required dose, and withdraw excess drug from infusion bottle**
- Administer undiluted over at least 60 minutes (120 minutes for doses greater than 60mg/kg)
- Hydration also required: 500 to 1000ml

Dose in adults

Hydration

- **Renal toxicity** can be reduced by adequate hydration of the patient
- **Hydration is recommended with each infusion to reduce renal toxicity - this is in addition to the dilution of the drug as outlined above**
- Hydrate with 500 to 1000ml of Sodium chloride 0.9% at each infusion. In compliant patients, oral hydration with similar hydration regimens has been used. Clinically dehydrated patients should have their condition corrected before initiating foscarnet therapy

CMV disease induction

- Give 60mg/kg every eight hours **or** 90mg/kg every twelve hours for two to three weeks (ref BNF)

CMV disease maintenance

- Give 90mg/kg once daily
- Increase to 120mg/kg daily if tolerated and/or progressive retinitis
- If disease progression on maintenance dose, repeat induction dose
- Note: the BNF suggests that maintenance doses start at 60mg/kg, increased as tolerated. Specialist input should be sought re doses for maintenance treatment

Herpes infections unresponsive to aciclovir

- Give 40mg/kg every eight hours for two to three weeks or until lesions heal (ref BNF)

Renal dose adjustments

- Creatinine clearance is calculated using the following formula (**this gives the answer in ml/kg/min**- as per table below)
- N * (140-Age in yrs) / Serum creatinine (micromol/l) (Where N is 1.23 for male patients, 1.04 for female patients)
- This formula may not be accurate for patients at extremes of body weight- ie **obese or very underweight**

CMV INDUCTION therapy					
Creatinine clearance (ml/kg/min)	**For 60mg/kg dose**	**Interval**	**Â**	**For 90mg/kg dose**	**Interval**
Greater than 1.4	60 mg/kg	8 hours	Â	90 mg/kg	12 hours
1.4 to 1.1	45 mg/kg	8 hours	Â	70 mg/kg	12 hours
1 to 0.81	35 mg/kg	8 hours	Â	50 mg/kg	12 hours
0.8 to 0.61	40 mg/kg	12 hours	Â	80 mg/kg	24 hours
0.6 to 0.51	30 mg/kg	12 hours	Â	60 mg/kg	24 hours
0.5 to 0.41	25 mg/kg	12 hours	Â	50 mg/kg	24 hours
less than 0.4	No therapy recommendation				

CMV MAINTENANCE therapy					
Creatinine clearance (ml/kg/min)	**For 90mg/kg dose**	**Interval**	**Â**	**For 120mg/kg dose**	**Interval**
Greater than 1.4	90 mg/kg	24 hours	Â	120 mg/kg	24 hours
1.4 to 1.1	70 mg/kg	24 hours	Â	90 mg/kg	24 hours
1 to 0.81	50 mg/kg	24 hours	Â	65 mg/kg	24 hours
0.8 to 0.61	80 mg/kg	48 hours	Â	105 mg/kg	48 hours
0.6 to 0.51	60 mg/kg	48 hours	Â	80 mg/kg	48 hours
0.5 to 0.41	50 mg/kg	48 hours	Â	65 mg/kg	48 hours
less than 0.4	No therapy recommendation				

Herpes infection		
Creatinine clearance (ml/kg/min)	**For 40mg/kg dose**	**Interval**
Greater than 1.4	40 mg/kg	8 hours
1.4 to 1.1	30 mg/kg	8 hours
1 to 0.81	20 mg/kg	8 hours
0.8 to 0.61	25 mg/kg	12 hours
0.6 to 0.51	20 mg/kg	12 hours
0.5 to 0.41	15 mg/kg	12 hours
less than 0.4	Treatment not recommended	

Monitoring

- Monitor serum creatinine every second day during induction therapy, and once weekly during maintenance therapy
- Adequate hydration must be maintained in all patients
- Monitor serum calcium and magnesium levels
- Monitor/consider QT prolongation risk

Further information

- Each 250mg bottle contains 1.38g (60mmol) sodium (equivalent to 69% of the WHOÂ recommended maximum daily intake of 2g)
- **Doses of greater than 12,000mg**
  - Because the drug solution must be diluted with equal quantities of fluid, a 1000ml infusion bag is not large enough to allow this to be prepared (as 12,000mg =500mL), an alternative method must be used - as follows
  - **Calculate required dose, and withdraw excess drug from infusion bottle and discard it**
  - Administer the volume left in the infusion bottle (the required dose) over 120 minutes (60 minutes for doses of 60mg/kg or less) while at the same timeÂ **piggybackingÂ** 1000ml sodium chloride 0.9% through the same catheter/cannula as the foscarnet infusion (at the same rate as foscarnet)
  - This dilutes the injection solution to the required concentration as it is being administered
  - As the drug is supplied in glass bottles, precautions need to be taken during administration to **prevent possible air embolism** - particularly in central line administration.Â **Glass bottle precautionsÂ Â** [ref 2]

References

Tillomed 12/08/2022

1: Injectable medicines guide, downloaded form Medusa 21/11/2024

2: Glass bottle reference - see below