Pentamidine Intravenous for Adults

Who can administer

May be administered by registered competent doctor or nurse/midwife

Important information

- **Staff must wear gloves, goggles, mask and gown and must use a Closed System Transfer Device (CSTD)(e.g. Equashield or PhaSeal) to prepare this drug**. This is to prevent exposure of health-care staff to the drug.
- **Equashield instructions**
  - Preparing a vial assembly
  - Reconstituting a powder using a diluent vial
  - Adding to an infusion bag
  - Other instructional videos
- Equashield components required:
  - a: VA20 vial adaptor (VA-20/2) - one for the water for injection 100ml bottle, and one for each vial of drug required
  - b: 10ml Syringe unit (SU-10/2) - to draw up Water for injection to reconstitute drug (one syringe will do all vials required) and to draw up reconstituted solution
  - c: spike adaptor (SA-IT) (to add reconstituted solution into the infusion bag)
- **Phaseal:** see this video
- Patients must be lying down for IV therapy due to the **risk of hypotension-** see 'Monitoring'
- See under 'Dose' for adjustments required in **renal** impairment
- Monitoring requirements - see overleaf
- There are numerous important **interactions**- check BNF for details
- Unlicensed preparation

Available preparations

Pentacarinat 300mg vial

Reconstitution

For intravenous infusion

- **Reconstitute using Water for Injections from a 100mL vial** (available in pharmacy).
  - the 100ml vial should be used as the plasco ampoules are not suitable as they cannot connect to Equashield.
- Using a Closed System Transfer Device (CSTD)- **see Important information:** add 3 to 5ml Water for Injection to 300mg vial
- **Dilute further prior to administration**

For nebulisation

- In most situations, this is prepared by Pharmacy Aseptics Services Unit (PASU)
- In the event that it cannot be prepared by PASU, prepare as follows:
  - **Reconstitute using Water for Injections from a 100mL vial** (available in pharmacy).

        - the 100ml vial should be used as the plasco ampoules are not suitable as they cannot connect to Equashield.
    - Using a Closed System Transfer Device (CSTD)- **see Important information**: add 4 to 6ml Water for Injection to 300mg vial

Infusion fluids

Glucose 5% or Sodium chloride 0.9%

Methods of intravenous administration

Intermittent intravenous infusion (using an electronically controlled infusion device)

- Using a Closed System Transfer Device (CSTD)- **see Important information**: add required dose to 100 to 250ml infusion fluid
- Administer over at least 60 minutes (usually 60 to 120 minutes)

Dose in adults

Pneumocystis jirovecii pneumonia (PJP) treatment

- Give 4mg per kg once daily for 14 to 21 days (Non HIV) to 21 days (HIV) [ref 2]
- May prolong **QT interval**. Use with caution in at risk patients
- Patients must be lying down for IV therapy due to the risk of hypotension during and following administration - see 'Monitoring'

Trypanosomiasis (ref BNF)

- Can be given by deep IM injection or by intravenous infusion
- Give 4mg per kg once daily, or on alternate days to complete a total of seven or ten doses

Visceral and Cutaneous Leishmaniasis

- Usually administered by intramuscular route - see BNF

Renal impairment (PJP indication) [ref 2]

Indication	eGFR (ml/min/1.73m^2)	Dose	
All indications	10 to 50ml	Use usual dose [ref 2]	
Severe infection	less than 10ml	4mg per kg daily for seven to ten days then	4mg per kg on alternate days to complete a minimum of 14 doses (but see Further information)
Non-severe infection	less than 10ml	4mg per kg on alternate days to complete a minimum of 14 doses (but see further information below)	
Nephrotoxic effects may be additive therefore avoid other nephrotoxic drugs.			

Monitoring

- Careful **monitoring required** - severe reactions, sometimes fatal, due to hypotension, hypoglycaemia, acute pancreatitis and cardiac arrhythmias have occurred
- Monitor blood pressure closely before starting treatment, during administration and several times

thereafter, until treatment has concluded
- Daily U+E
- Daily blood glucose measurements during therapy and continuing several times after completion of therapy as required by patient's clinical condition. Hyperglycaemia and diabetes mellitis, with or without preceding hypoglycaemia have occurred up to several months after cessation of therapy
- Daily FBC and platelet count
- LFTs weekly, or every 3 to 5 days if values are elevated
- Calcium levels - weekly
- Magnesium levels - twice weekly
- ECG at regular intervals (QT interval prolongation can occur)

Further information

- Phlebitis can occur after intravenous or intramuscular administration
- **Extravasation** may cause tissue damage. If extravasation occurs, the infusion should be discontinued immediately, and restarted in another vein
- Pentamidine is **used by nebulisation for prophylaxis of PJP** at a dose of 300mg every month. It has also been used by nebulisation for treatment of PJP - consult specialist literature.
- **Staff** preparing this drug **must wear gloves, goggles, mask and gown - and a Closed System Transfer Device (CSTD)**
- **Renal impairment-** all reference sources checked suggest that the treatment course is 14 **doses** - which equates to 28 days

Storage

- Store below 25^{0}C

References

SPC Pentacarinat 13th August 2019

1:Injectable medicines guide Medusa, downloaded 20/02/2023

2: GUH Antimicrobial Guidelines

Therapeutic classification

Drug for pneumocystis pneumonia