Azathioprine Intravenous for Adults

Who can administer

May be administered by registered competent doctor or nurse/midwife

Important information

- A Closed System Transfer Device (CSTD) must be used to prepare this drug- eg Equashield or Phaseal. 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)
  - c: spike adaptor (SA-IT) (to add reconstituted solution into the infusion bag)
- Phaseal instructions(Equashield is the system generally used in preference)
- See monitoring requirements - overleaf
- IV dose is equivalent to oral dose [ref 1]
- For disposal - see under further information

Available preparations

Imuran 50mg vial

Reconstitution

Water for injection

Add 5 to 15ml to each 50mg vial (use a 100ml water for injection vial (available in pharmacy) into the vial (plasco not suitable as cannot connect to Equashield)

Use a Closed System Transfer Device (CSTD)- see Important information

Infusion fluids

Sodium chloride 0.9% (preferable)

Glucose 5% [ref 2]

Methods of intravenous administration

Administer according to cytotoxic policies and guidelines

Intermittent intravenous infusion (preferred method)

- See preparation information - below (under further information)
- Using a Closed System Transfer Device (CSTD)- see Important information:, add required dose to between 20 and 200ml infusion fluid and administer over 30 to 60 minutes
- The volume for infusion is not critical, you can use any volume for any dose (ideally use at least 100ml to avoid underdosage with loss of residual volume in administration set)
- May be given over up to 8 hours if preferred

Bolus intravenous injection (only if infusion not possible as this is a very irritant solution)

- Administer required dose **over at least 1 minute**, **followed by at least 50ml** of Sodium chloride 0.9 % (ref 2)

Dose in adults

- **Intravenous azathioprine should only be used when the oral route is impractical**
- **It should be switched to the oral route as soon as possible**

Autoimmune conditions

- Give 1 to 3 mg per kg daily
- The therapeutic effect may not be evident for several weeks or months
- When therapeutic response is evident use the lowest possible maintenance dose
- Consider withdrawal if no improvement after 3 months
- **Reduce dose to one-quarter** or consider switching to alternative immunosuppressant if azathioprine or mercaptopurine is given concomitantly with **allopurinol** (serious risk of toxicity)

Maintenance post-transplant

- Give 1 to 4 mg per kg daily
- The dose is adjusted according to the clinical response and FBC
- Reduce dose to one-quarter or consider switching to alternative immunosuppressant if azathioprine or mercaptopurine is given concomitantly with **allopurinol** (serious risk of toxicity)
- Do not adjust doses without communicating with transplant team

Renal impairment

- Use dosages at the lower end of the normal range, and monitor FBC
- Reduce dose in severe renal impairment (if for transplantation - consult with transplant team)
- Consult specialist text for information on dose reduction

Hepatic impairment

- Use doses at the lower end of the normal range, and monitor FBC and LFTs (if for transplantation - consult with transplant team)

Monitoring

- **Pre-treatment screening for TPMT:** Contraindicated if absent thiopurine methyltransferase (TPMT) activity or very low thiopurine methyltransferase (TPMT) activity [(ref 3)]
- Monitor **FBC weekly** (more often with higher doses or if hepatic or renal impairment) **for 4 weeks** (SPC advises 8 weeks but evidence of practical value unsatisfactory), then at least every 3 months (ref 3)
- Advise patient to report immediately any bleeding, bruising or infection which may indicate bone marrow suppression

Further information

- **Very irritant due to alkaline nature of injection, use only if oral route not feasible, and avoid extravasation**
- **Intravenous INFUSION is the preferred IV route due to the lower pH on dilution**
- **Azathioprine may affect response to live vaccines**

Preparation details

- According to the manufacturers, azathioprine injection should be prepared for use in the aseptic unit of a pharmacy, which is equipped with a suitable vertical laminar flow cabinet designed to ensure adequate protection of both operator and product and, preferably, reserved solely for cytotoxic preparations
- In the event that such a facility is not available, the preparation may be prepared by a health professional who has expertise in the safe handling of cytotoxic agents
- A Closed System Transfer Device (CSTD) (e.g. Equashield or PhaSeal) must be used to prepare this drug. This is to prevent exposure of health-care staff to the drug. See Important information
- Avoid direct contact of prepared solution with skin or mucous membranes: if such contact occurs wash thoroughly with soap and water. If contact with eyes rinse with sodium chloride eye wash and seek medical attention
- Staff preparing this drug should wear gloves, mask, goggles and gown

Disposal information

- The solution and equipment used for administration should be disposed of as per cytotoxic waste

Storage

Store below 25^{0}C

References

SPC August 2021

1: Immunosuppressants in solid-organ transplant patients: perioperative management Q Pulse CLN-PHAR/MP-048

2:Injectable Medicines Guide Medusa accessed online 6th Dec 2021

3: BNF accessed online Dec 2021

Therapeutic classification

Drugs affecting the immune response