Midazolam Intravenous for Adults

Who can administer

Administration RESTRICTED - see Appendix 1

Important information

- **Flumazenil injection must be available** at all times when administering midazolam by the intravenous route
- **Midazolam should only be administered by experienced physicians** in a setting fully equipped for the monitoring and support of respiratory and cardiovascular function
- Not to be used for conscious sedation in patients with severe respiratory failure or acute respiratory depression
- **Acute respiratory depression, respiratory arrest and cardiac arrest may occur** especially when used for sedation in non-critical care settings
- The need for a **continuous infusion should be reassessed daily** to reduce the risk of accumulation and prolonged recovery (**particularly in patients with renal and hepatic impairment**)
- For Y-site compatibility see below

Available preparations

Hypnovel 10mg per 2mL ampoule

Hypnovel 10mg per 5mL ampoule

Reconstitution

Already in solution

Draw up using a 5 micron filter needle

Infusion fluids

Sodium chloride 0.9% or Glucose 5%

Methods of intravenous administration

Slow intravenous injection

- Consider using the **10mg per 5mL** strength to allow for more accurate dose measurement and titration

- Administer required dose at a rate of 2mg per minute

Continuous intravenous infusion (critical care areas only). Administer using an electronically controlled infusion device

- Use 12ml of **10mg/2mL** strength, and add 48ml infusion fluid to produce a **60mg in 60mL (1mg/1mL)** infusion

Dose in adults

Conscious sedation for procedures

- **Adults less than 60 years**: Initial dose: 2 to 2.5mg, given five to ten minutes before the beginning of the procedure. Further doses of 1mg may be given, as necessary, to a total dose of 3.5 to 7.5mg
- **Adults 60 years or more, debilitated or chronically ill**: Initial dose: 0.5 to 1mg, given five to ten minutes before the beginning of the procedure. Further doses of 0.5 to 1mg may be given, as necessary to a total dose of 3.5mg
- Consider using the **10mg per 5mL strength** to allow for easier dose measurement and titration

Anaesthesia

- Used as per theatre guidelines

Sedation in intensive care units

- In hypovolemic, vasoconstricted, or hypothermic patients, both the loading and maintenance doses **should be reduced**
- Escalate in increments of 1 to 2.5mg every two minutes
- Infusion maintenance doses vary but are in the range of 2.1 to 14mg/hr for a 70kg patient (30 to 200 microgram/kg/hour)
- Abrupt discontinuation after prolonged intravenous administration may lead to withdrawal symptoms
- Consider reducing slowly when stopping drug

Renal impairment

- In patients with renal impairment (CrCl < 30ml/min), midazolam may be accompanied by more pronounced and prolonged sedation, including clinically relevant respiratory and cardiovascular depression
- Such patients should be dosed carefully and dose titrated for the desired effect

Hepatic impairment

- In patients with hepatic impairment, the clinical effects of midazolam may be prolonged
- The required dose of midazolam may have to be reduced

Adults over 60 years of age:

- Use lower doses for all indications except ICU sedation

Monitoring

- Monitor respiratory and cardiovascular parameters
- Monitor blood pressure - hypotension is more common in patients also on opioids [ref 1]

Special caution should be excercised in the following patients

- Adults **over 60 years** of age
- Chronically ill or debilitated patients
- Chronic **respiratory** insufficiency - respiratory arrest is more common with high doses/rapid administration
- Chronic **renal failure**, impaired **hepatic** or **cardiac** function

Further information

- The elimination half life may be prolonged up to six times in critically ill patients

Storage

Store below 25^{0}C

References

Hypnovel 10mg/2mL SPC September 2023

Hypnovel 10mg/5mL SPC September 2023

1. Uptodate, accessed online 30/01/2025

2. Injectable medicines guide, downloaded 30/01/2025

Therapeutic classification

Benzodiazepine