

## Who can administer

May be administered by registered competent doctor or nurse/midwife

## Important information

- Unlicensed drug
- This monograph has been prepared for guidance on the use of the L-arginine in stroke associated with **MELAS** syndrome (mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episodes)
- For other indications- see the **BIMDG guideline**

## Available preparations

L-Arginine Hydrochloride 50%w/v ampoule (5g/10ml) (Amargine)

## Reconstitution

Not required- already in solution

**Draw up using a 5 micron filter needle**

**Further dilution required prior to administration**

## Infusion fluids

Glucose 10% (preferred) or 5% <sup>(ref 1)</sup>

## Methods of intravenous administration

**Intermittent intravenous infusion (administer using an electronically controlled infusion device)**

- Add the required dose to infusion fluid - recommended maximum concentration 50mg/ml <sup>(ref 1)</sup>
- **Administer via central line (preferable)**, or a large peripheral vein due to high osmolarity <sup>(ref 1)</sup>
- **Initial dose:** administer first stat dose over 30 minutes <sup>(ref 2)</sup>, then use continuous infusion
- An in-line 0.2 micron filter **must** be used, available from Pharmacy <sup>(ref 1)</sup> (Braun filter 409 9303)

## Dose in adults

**Acute stroke associated with MELAS**

- Give 10g/m<sup>2</sup> (max 30g) by intravenous infusion over 30 minutes within 3 hours of symptom onset
- Followed immediately by 10g/m<sup>2</sup> as a continuous intravenous infusion (but see below re max daily dose)
- Repeat 10g/m<sup>2</sup> continuous infusion daily for 3 to 5 days
- **Maximum dose** 30g per day (on day one, the continuous infusion dose may need to be capped to avoid exceeding 30g)
- Example: patient BSA 1.8m<sup>2</sup>
  - Give 18g over 30 minutes, followed by **12g** over 24 hours (so as not to exceed 30g total daily dose)
  - On day 2 onwards, give 18g over 24 hours

- Use [MdCalc](#) to work out Body Surface Area in m<sup>2</sup>
- See under Further information below re oral doses

For other indications- see the [BIMDG guideline](#)

## Monitoring

- Monitor for allergic reactions and stop treatment if serious <sup>(ref 1)</sup>
- Infusion site reactions (high osmolarity) <sup>(ref 1)</sup>
- Monitor plasma pH and chloride levels <sup>(ref 1)</sup>
- Monitor blood glucose levels <sup>(ref 2)</sup>
- Monitor blood pressure <sup>(ref 1)</sup>

## Further information

- Further information on adverse reactions etc may be found on the attached SPC
- Patients may be transferred to maintenance dose orally (150 to 300mg/kg/day), in three divided doses (max 24grams/day)
- The injection solution may be administered orally , if oral tablets are not available <sup>(ref 2)</sup>

## Storage

Store ampoules below 25<sup>0</sup>C

Do not refrigerate

## References

SPC 6th August 2018

1: Injectable Medicines Guide Version 5 Medusa NHS. Downloaded 30/03/2023

2: British Inherited Metabolic Diseases Group IMDG [guidelines](#) 2nd Edition 2020

3: Recommendations for the Management of Strokelike Episodes in Patients With Mitochondrial Encephalomyopathy, Lactic Acidosis, and Strokelike Episodes JAMA 2016 Koenig et al