ARGININE HYDROCHLORIDE 60% CONCENTRATED INJECTION 15 g IN 25 mL

(ARGININE HYDROCHLORIDE)

1 NAME OF THE MEDICINE

Arginine hydrochloride

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Arginine Hydrochloride 60% Concentrated Injection 15 g in 25 mL contains arginine hydrochloride 600 mg/mL in water for injections to 25 mL.

3 PHARMACEUTICAL FORM

Arginine Hydrochloride 60% 15 g in 25 mL concentrated injection for infusion is a clear colourless solution.

4 CLINICAL PARTICULARS

4.1 THERAPEUTIC INDICATIONS

Arginine stimulates the release of growth hormone by the pituitary gland and may be used instead of, or in addition to, other tests such as insulin induced hypoglycaemia, for the evaluation of growth disorders; false positive and false negative results are relatively common and evaluation therefore should not be made on the basis of a single arginine test.

Arginine is used as an acidifying agent in severe metabolic alkalosis.

Arginine is used in some conditions accompanied by hyperammonaemia stemming from inborn errors of the urea cycle, particularly where there is a severe deficiency of ornithine carbamoyl transferase or carbamoyl phosphate synthetase, where respiratory alkalosis is present.

4.2 DOSE AND METHOD OF ADMINISTRATION

Arginine Hydrochloride 60% Concentrated Injection is compatible for dilution with either Sodium Chloride 0.9% or Glucose 5%. It should be diluted before use to make a concentration of arginine hydrochloride 10%. The resulting infusion solution should be given over 30 minutes.

The usual dose is:

Adults: 30 g of arginine hydrochloride.

Children: 500 mg of arginine hydrochloride per kilogram of bodyweight.

In severe metabolic alkalosis the intravenous dose (in grams) is calculated by multiplying the desired decrease in plasma bicarbonate concentration (mmol. per litre) by the patient's body weight in kilogram and then dividing by a factor of 9.6.

4.3 CONTRAINDICATIONS

Arginine Hydrochloride 60% Concentrated Injection is contraindicated in:

- patients who are highly allergic
- patients hypersensitive to arginine or who have severe acidosis
- patients with hypotension or any defects or diseases related to nitric oxide production.

4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE

Anti-histamine medication should be available during treatment, in the event of an allergic reaction.

Patient blood pressure should be monitored during use and for 24 hours following cessation of intravenous administration due to the possibility of hypotension.

Use with caution

Arginine Hydrochloride 60% Concentrated Injection should be used with caution in patients with severe liver disease and moderate renal insufficiency. Elevated plasma potassium concentrations have been reported in uraemic patients and arginine should therefore be administered with caution to patients with renal disease or anuria. Arginine Hydrochloride 60% Concentrated Injection should be administered cautiously to patients with electrolyte disturbances as its high chloride content could lead to the development of hyperchloraemic acidosis.

Use in hepatic impairment

Arginine Hydrochloride 60% Concentrated Injection should be used with caution in patients with severe liver disease.

Use in renal impairment

Arginine Hydrochloride 60% Concentrated Injection should be used with caution in patients with moderate renal insufficiency. Elevated plasma potassium concentrations have been reported in uraemic patients and arginine should therefore be administered with caution to patients with renal disease or anuria.

Use in the elderly

No data available.

Paediatric use

See Section 4.2 Dose and Method of Administration.

Effects on laboratory tests

No data available.

4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS

Arginine has been known to interact with spironolactone.

4.6 FERTILITY, PREGNANCY AND LACTATION

Effects on fertility

Long term animal studies have not been performed to evaluate the effect on fertility of intravenously administered Arginine Hydrochloride 60% Concentrated Injection.

Use in pregnancy

Arginine Hydrochloride 60% Concentrated Injection belongs to pregnancy Category B1- Drugs which have been taken by a limited number of pregnant women and women of child bearing age, without an increase in the frequency of malformation or other direct or indirect harmful effects on the human fetus having been observed.

Studies in animals have not shown evidence of increased occurrence of fetal damage.

Use in lactation

Although arginine passes through breast milk, it is not considered to affect the nursing child negatively. However, caution is advised when breast feeding.

4.7 Effects on ability to drive and use machines

The effects of this medicine on a person's ability to drive and use machines were not assessed as part of its registration.

4.8 Adverse effects (Undesirable effects)

Nausea, vomiting, flushing, headache, numbness and local venous irritation may occur if arginine solutions are infused too rapidly.

Rare adverse reactions: Hypotension, anaphylactic reactions, severe allergic reactions and severe hyperkalaemia have all been reported, but occurrences are extremely rare.

Reporting suspected adverse reactions

Reporting suspected adverse reactions after registration of the medicinal product is important. It allows continued monitoring of the benefit-risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions at www.tga.gov.au/reporting-problems.

4.9 Overdose

An overdosage may cause a transient metabolic acidosis with hyperventilation. The acidosis can generally be compensated and the base deficit will return to normal following completion of the infusion. If the condition persists, the deficit should be determined and corrected by a calculated dose of an alkalosing agent. Hypotension may develop due to stimulation of nitric oxide production.

For information on the management of overdose, contact the Poisons Information Centre on 131126 (Australia).

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Mechanism of action

Arginine is an aliphatic amino acid which is essential for infant growth. It is used as a dietary supplement.

Arginine is an isomer of the amino acid arginine, which is an essential amino acid found in the body. Arginine is an important constituent of the urea cycle, which enables the body to safely store and excrete ammonia.

Clinical trials

No data available.

5.2 PHARMACOKINETIC PROPERTIES

Arginine is considered to be a normal metabolite in animals and man.

Absorption

Arginine is generally absorbed from the intestinal tract.

Distribution

No data available.

Metabolism

Arginine is processed by the liver.

Excretion

No data available.

5.3 PRECLINICAL SAFETY DATA

Genotoxicity

Long term animal studies have not been performed to evaluate the mutagenic potential of intravenously administered Arginine Hydrochloride 60% Concentrated Injection.

Carcinogenicity

Long term animal studies have not been performed to evaluate the carcinogenic potential of intravenously administered Arginine Hydrochloride 60% Concentrated Injection.

6 PHARMACEUTICAL PARTICULARS

6.1 LIST OF EXCIPIENTS

Refer to section 2 – Qualitative and Quantitative Composition

6.2 INCOMPATIBILITIES

Incompatibilities were either not assessed or not identified as part of the registration of this medicine.

6.3 SHELF LIFE

In Australia, information on the shelf life can be found on the public summary of the Australian Register of Therapeutic Goods (ARTG)[1]. The expiry date can be found on the packaging.

[1] AUST R 22934

6.4 SPECIAL PRECAUTIONS FOR STORAGE

Store below 30°C. Do not freeze.

6.5 NATURE AND CONTENTS OF CONTAINER

Arginine Hydrochloride 60% Concentrated Injection is presented as 25 mL of solution in a 50 mL glass vial in a pack of 10 vials.

Phebra product code - INJ162

The vial stopper is not made with natural rubber latex.

6.6 SPECIAL PRECAUTIONS FOR DISPOSAL

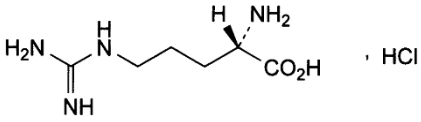
In Australia, any unused medicine or waste material should be disposed of in accordance with local requirements.

6.7 PHYSICOCHEMICAL PROPERTIES

Arginine hydrochloride is a white or almost white crystalline powder or colourless crystals, that is freely soluble in water, very slightly soluble in alcohol, and practically insoluble in ether.

The molecular weight of the compound is 210.7. The molecular formula is $C_6H_{14}N_4O_2.HCl$.

Chemical structure



CAS number

1119-34-2

7 MEDICINE SCHEDULE (POISONS STANDARD)

Unscheduled

8 SPONSOR

Phebra[2] Pty Ltd, 19 Orion Road, Lane Cove West, NSW 2066, Australia.

Telephone: 1800 720 020

9 DATE OF FIRST APPROVAL

14 Oct 1991

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10 DATE OF REVISION

27 Nov 2020

SUMMARY TABLE OF CHANGES

Section Changed	Summary of new information
NA	PI reformatted to align with new form
2 and 3	PI reformatted to align with new form
4.4	Minor editorial changes – updated the text for use in hepatic and renal impairment
4.8	Minor editorial changes – removed "http://" wording for www.tga.gov.au/reporting-problems
6.1	Minor editorial changes – updated the text to "Refer to section 2 – Qualitative and Quantitative Composition.
4.6	Minor editorial change – specified the text for fertility.
4.9	Minor editorial change – updated the text as per standard requirement for PI reformat
5.3	Minor editorial change – specified the text for genotoxicity and carcinogenicity.
6.4	Minor editorial change – updated storage conditions to add 'Do not freeze'.
6.5	Minor editorial changes – addition of safety statement for latex.