MONOGRAPH

Rasburicase

Scope (Staff):	Medical, Pharmacy, Nursing
Scope (Area):	All Clinical Areas

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this DISCLAIMER

QUICKLINKS

Dosage/Dosage Adjustments | Administration | Compatibility | Monitoring

DRUG CLASS

Recombinant urate-oxidase enzyme.[1, 2]

INDICATIONS AND RESTRICTIONS

- Rasburicase can only be prescribed by oncologists or haematologists for the treatment or prevention of acute renal failure from hyperuricaemia in patients with haematological malignancies associated with high tumour burden where rapid lysis of malignant cells is likely, upon initiation of chemotherapy.

CONTRAINDICATIONS

- Hypersensitivity to rasburicase or any component of the formulation.
- Glucose-6-phosphate dehydrogenase (G6PD) deficiency[3, 4]
- Haemolytic anaemia or other cellular metabolic disorders known to cause haemolytic anaemia[3, 4]

PRECAUTIONS

Anaphylactic reactions may occur. Resuscitation facilities must be readily available

- Hydration: patients at risk of tumour lysis syndrome should receive appropriate IV hydration as part of uric acid management. Alkalinization (with sodium bicarbonate) concurrently with rasburicase is not recommended.[5]
- Previous treatment with rasburicase – increase risk of hypersensitivity reactions with subsequent courses.[3] Efficacy may be reduced with subsequent courses of therapy.[4, 5]
- Severe hypersensitivity reactions, including anaphylaxis.[4] Anaphylaxis may occur with initial dose but it is more common with repeated courses of rasburicase.[5]
- Uric acid degradation: enzymatic degradation of uric acid in blood samples will occur if left at room temperature and interferes with serum uric acid measurement; specific guidelines for collection of plasma uric acid samples must be followed. Blood samples should be collected in tubes containing heparin and immediately immersed in an ice water bath.[2, 3, 5] Plasma samples should undergo assay within 4 hours of collection.[2, 5]
- Methemoglobinemia has been reported. Appropriate treatment (e.g. transfusion, methylene blue) should be initiated and rasburicase immediately and permanently discontinued.[5]

FORMULATIONS

Listed below are products available at PCH. Other formulations may be available, check with pharmacy if required:

- 1.5 mg vial

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

≥ 4 weeks – 18 years, IV: 0.15 – 0.2 mg/kg (max dose 7.5 mg) once daily.[3, 5, 6] Round dose to the nearest vial size (1.5 mg) where possible. Very high risk patients may require up to twice daily dosing at consultant's discretion.[5]

Very limited data available for use in infants less than 4 weeks of age.[7] Rasburicase can be used at consultant's discretion.

Duration of treatment depends on clinical assessment and uric acid levels.[3]

Do not use concurrently with allopurinol; Rasburicase can be started immediately if switching from allopurinol; no wash out period is necessary.[3, 8]

Renal impairment:

- No dose adjustment provided in manufacturer's labelling[1, 4, 5]

Hepatic impairment:

- No dose adjustment provided in manufacturer's labelling[1, 4, 5]

Treatment related toxicity:

- Immediately and permanently discontinue in patient developing serious hypersensitivity reaction and hemolysis[4]

RECONSTITUTION & ADMINISTRATION

- Reconstitute the 1.5 mg vial with 1 mL of supplied diluent.[2] Filter the supplied diluent prior to adding to the rasburicase vial for reconstitution.[2] Mix by swirling very gently. **Do not shake or vortex**.[2, 4, 9] The concentration is 1.5 mg/mL.[9]
- The solution is clear.[9] Discard if discoloured or contain particulate matter.[4]
- Dilute the total dose to 50 mL with sodium chloride 0.9% and infuse over 30 minutes.[4, 9] Do not administer as a bolus infusion.[2]
- Do not use an inline filter.[9]
- Do not infuse with any other medications.[2] If use of a separate line is not possible, the line should be flushed with at least 15 mL of sodium chloride 0.9% prior to and following rasburicase infusion.[2]

COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

Compatible fluids: Sodium chloride 0.9%[9]

Incompatible fluids: Glucose solution[9]

Compatible and INCOMPATIBLE drugs:

Rasburicase is not routinely administered with other medications. Consult two or more drugs references *(Compatibilities of IV drugs)* or pharmacy when there is a requirement for medications to be given concurrently.

MONITORING

- Plasma uric acid levels (4 hours after rasburicase administration, then every 6-8 hours until tumour lysis syndrome resolution)[4, 7]
    - Sample must be transported on ice[10]
    - Sample must reach laboratory within 30 minutes of collection. DO NOT send via the pneumatic tube system[10]
- Complete blood count[4]
- Accurate fluid balance (including urine output)[11]
- G6PD deficiency screening (in patients at high risk for deficiency)[4, 12]
- Hypersensitivity reactions, including anaphylaxis[3, 4, 12]
- Hydration status[5]

ADVERSE EFFECTS

Common: fever, vomiting, nausea, diarrhoea, headache, hypersensitivity reactions (including rash, urticaria, bronchospasm, rhinitis, hypotension), peripheral oedema[2, 3]

Infrequent: haemolysis, seizures, rash, abdominal pain, hypo- or hyperphosphatemia, hypervolemia, constipation, mucositis, hyperbilirubinemia, alanine aminotransferase increased, antibody development including neutralising antibodies, sepsis, pharyngolaryngeal pain, hypersensitivity[2, 3]

Rare: Methemoglobinemia, involuntary muscle contractions, anaphylaxis, haemolysis, ischemic heart disease, infection, pulmonary haemorrhage, respiratory failure, muscle spasm, seizure[2, 3]

STORAGE

Vial: Store at 2 to 8 °C. Do not freeze[9]

Reconstituted solution: stable for 24 hours at 2 to 8 °C.[9]

Infusion solution: stable for 24 hours at 2 to 8 °C.[9]

INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. Clinical Pharmacology), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

Please note: The information contained in this guideline is to assist with the preparation and administration of **rasburicase**. Any variations to the doses recommended should be clarified with the prescriber prior to administration

Related CAHS internal policies, procedures and guidelines

Cytotoxic Biotherapy Agents Administration

Cytotoxic Biotherapy Agents Extravasation

Cytotoxic Biotherapy Agents Safety

Chemotherapy Induced Nausea and Vomiting Management

References

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