RASBURICASE

Indication	• Treatment and prophylaxis of acute hyperuricaemia in neonates with haematological malignancy at risk of rapid tumour lysis[1,2]

INTRAVENOUS

Presentation	• Vial: 1.5 mg (powder and 1 mL solvent)
Dosage (prophylaxis)	• 0.2 mg/kg/day IV once daily for up to 5 days[1]
Dosage (treatment)	• 0.2 mg/kg/day IV once daily for up to 5 days or duration based on clinical response[1]
Preparation	• Add the 1 mL of supplied diluent to the 1.5 mg vial[3] o Do not shake.[3] Mix by swirling gently[3] o *Concentration now equal to 1.5 mg/mL* • Draw up the prescribed dose volume and make up to 50 mL total volume with 0.9% sodium chloride[3]
Administration	• Prime the infusion line and administer via a dedicated IV line[1] • IV infusion via syringe driver pump over 30 minutes[3] o Do not filter[1,3] o On completion, disconnect syringe and infusion line (flush not required) • *If no dedicated IV line*, flush with 15 mL of 0.9% sodium chloride before and after infusion[1]

Special considerations	• Prescribe and administer under guidance from QCH Oncology[4] o For prophylaxis: a single-dose may be adequate (follow-up with close physical and laboratory monitoring)[4,5] o Administration beyond 5 days or 1 course of chemotherapy treatment is not recommended (treatment or prophylaxis)[1] o Administer at least 4 hours before starting first chemotherapy cycle in high-risk patients[6] o Follow QCH guided protocol (a maximum dose may apply)[4] • Contraindications o G6PD deficiency[1] o History of haemolytic reactions to rasburicase, or other cellular metabolic disorders known to cause haemolytic anaemia (to prevent haemolytic anaemia induced by hydrogen peroxide)[1] o History of methemoglobinemia reactions to rasburicase[1] • Antibodies may form but significance is unknown; with repeated exposure, may be an increased risk of hypersensitivity reactions[7] (not approved for multiple treatment courses) • Do not use concurrently with allopurinol[1]
Monitoring	• FBC, liver and renal function[5] at SMO discretion • Clinical signs of jaundice[1] • Pre-treatment screening for G6PD deficiency[1,5] • For onset of allergic type effects, especially skin allergic reactions, bronchospasm, hypotension including anaphylaxis[1] • Vital signs: baseline, then 10 minutely during administration
Compatibility	• Fluids o Sodium chloride 0.9%[3] • Via Y-site o No information[3]
Incompatibility	• Fluids o Glucose solutions[3] • Drugs o No information[3]
Interactions	• No information[8]
Stability	• Store at 2 to 8 °C[8]. Do not freeze[8]

Side effects	• Hypersensitivity and allergic reactions including rash, urticaria, rhinitis, bronchospasm, hypotension and anaphylaxis reported[1] • Blood pathology: hypophosphatemia[1], increased alanine aminotransferase with haematological or solid tumour malignancy treated with anti-cancer therapy[1] and rarely haemolysis[1] or methemoglobinemia[1] • Circulatory: peripheral oedema[1] • Digestive: constipation[1], diarrhea[1], vomiting[1] • Musculo-skeletal: involuntary muscle contractions[9] • Nervous: fever[9], seizures[9]
Actions	• A recombinant urate-oxidase enzyme produced by a genetically modified Saccharomyces cerevisiae strain[1] • Uric acid is the final step in the catabolic pathway of purines[1] • Catalyses oxidation of uric acid into the inactive and soluble metabolite allantoin, which is excreted by the kidney. On elimination of allantoin, a high concentration of hydrogen peroxide is produced (refer to contraindications)[1] • Results in rapid and safe resolution of hyperuricemia allowing for maintenance of kidney function[5]
Abbreviations	G6PD: Glucose-6-phosphate dehydrogenase, FBC: full blood count, IV: intravenous, QCH: Queensland Children's Hospital, SMO most senior medical officer
Keywords	rasburicase, tumour lysis syndrome, antihyperuricaemic, fasturtec, TLS, hyperuricaemia, haematological malignancy

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

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