



MONOGRAPH

MESNA

Scope (Staff):	Medical, Pharmacy, Nursing
Scope (Area):	Perth Children's Hospital (PCH)

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
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DRUG CLASS

Thiols, Bladder protectant,¹⁻³

Mesna contains free sulfhydryl (thiol) groups that bind to and inactivates acrolein, the urotoxic metabolites of IFOSFamide and CYCLOPHOSPHamide.^{1, 3-5}

CONTRAINDICATIONS

- Hypersensitivity to Mesna, other thiol containing agents, or any component of the formulation.¹

INDICATIONS AND RESTRICTIONS

- Mesna is indicated for the prevention and reduction of haemorrhagic cystitis and haematuria due to IFOSFamide and CYCLOPHOSPHamide (oxazaphosphorines).^{1, 3-6}
- For the treatment of malignancy, Oncologists or Haematologists can only prescribe Mesna as per the treatment protocol.

PRECAUTIONS

- The risk of hypersensitivity reactions is increased in patients with autoimmune diseases.^{1, 4, 6} Resuscitation facilities must be readily available.
- Hypersensitivity can result in severe systemic effects, including Stevens-Johnson syndrome (SJS) or toxic epidermal necrolysis (TEN).^{1, 4, 6}

- Allergic contact dermatitis has been reported in healthcare workers handling Mesna.²
- Mesna may result in a false positive test for urinary ketones and ascorbic acid.

FORMULATIONS

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

- Clear glass ampoules for injection: Mesna 1 g /10 mL (100 mg/mL).¹

*Note that the intravenous formulation available in Australia does not contain benzyl alcohol.¹

Imprest location: [Formulary One](#)

DOSAGE & DOSAGE ADJUSTMENTS

For use in Oncology and Haematology, dose as per the treatment protocol in the OIMS (Oncology Information Management System).

Mesna dose is calculated according to CYCLOPHOSPHamide or IFOSFamide dosage and the duration of the cytotoxic infusion.

- Mesna dosage is usually administered at 20% of the respective oxazaphosphorine dose, at each of the times 0 (= administration of the cytostatic agent), 4 hours and 8 hours.¹
- The total dose of Mesna is 60% of the oxazaphosphorine dose and is repeated on each occasion that the cytotoxic agents are used.¹

Renal impairment:

- No dosage adjustments are required.⁶ [eGFR calculator](#)

Hepatic impairment:

- No dosage adjustments are required.⁶

Treatment related toxicity:

- Dose adjustment as per treatment protocol.⁵

ADMINISTRATION

- Mesna is compatible with IFOSFamide and CYCLOPHOSPHamide and may be included in the same bag as per treatment protocols.^{1, 2, 5}
- Mesna is recommended to be compounded in an aseptic drug safety cabinet by Pharmacy Compounding Services (PCS).
 - The prescribed dose is to be drawn up and added to an appropriate volume of a compatible fluid to a final concentration of 20 mg/mL or less.^{3, 5, 6}
- **For intravenous administration:** Infuse the diluted solution over 15 to 30 minutes.^{1, 2, 4-7}
- **For continuous infusion:** Dilute to 1000 mL with a compatible fluid.^{1, 2, 4-7} Use an infusion pump.

- **Oral:** The injection solution may be given orally. The oral dose is equivalent to TWICE the intravenous dose.^{3,4,7}
 - Dose may be diluted 1:1 to 1:10 in water, carbonated cola drinks, fruit juices (grape, apple, tomato, and orange) or plain or chocolate milk prior to administration to mask flavour. The most palatable is chilled grape juice. (Note: Due to the sulphur odour (rotten eggs) of the Mesna injection, more dilute solutions may be better tolerated).^{3,5-7}
 - If vomiting occurs within two hours of taking oral Mesna, repeat the dose or give intravenously.⁴

COMPATIBILITY (LIST IS NOT EXHAUSTIVE)

Compatible fluids:

Glucose 5%, sodium chloride 0.9%, glucose in sodium chloride solutions, Hartmann's^{1,2}

Compatible and INCOMPATIBLE drugs:

Antineoplastic therapies are 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

Urinalysis should be regularly monitored for haematuria with each urine output or every 4 hours if catheterised (which may precede haemorrhagic cystitis). Maintain urine output of >100 mL/hour in addition to Mesna therapy^{2,4,7}

Mesna may give false positive ketones reading on urinalysis.^{1,2,5,6}

For additional monitoring requirements, refer to the [IFOSFamide monograph](#) and CYCLOPHOSPHamide monograph.

ADVERSE EFFECTS

Common: nausea, vomiting, constipation, leukopenia, fatigue, facial oedema, headache, itch, unpleasant taste, fever^{1,3-6}

Infrequent: anorexia, thrombocytopenia, anaemia, neutropenia, pain, alopecia, dyspnoea, chest pain, hypokalaemia, diarrhoea, dizziness, headache, haematuria, injection site reaction, oedema, somnolence, anxiety, confusion, insomnia, cough, increased sweating^{1,3-6}

Rare: dyspepsia, hypotension, pallor, dehydration, pneumonia, tachycardia, flushing, hypersensitivity reactions^{1,3-6}

STORAGE

Ampoule: Store below 30°C.^{1,2}

Diluted solution: Store between 2 and 8°C.^{1,2}

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 **Mesna**. Any variations to the doses recommended should be clarified with the prescriber prior to administration

Related CAHS internal policies, procedures and guidelines

[Extravasation of Antineoplastic \(Cytotoxic\) Agents](#)



[Antineoplastic \(Cytotoxic\) Agents Safe Handling and Administration](#)

[Anti-Cancer Therapy Induced Nausea and Vomiting Management](#)

References

1. MIMS online [full product information] [Internet]. c2024. Available from: <https://www.mimsonline-com-au.pklibresources.health.wa.gov.au/Search/Search.aspx>.
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4. Australian Medicines Handbook (AMH) [Internet]. c2024 [cited 07/02/2024]. Available from: <https://amhonline-amh-net-au.pklibresources.health.wa.gov.au/about/preface?menu=home>.
5. AHFS Drug Information® (2024) [Internet]. American Society of Health-System Pharmacists®. 2024 [cited 07/02/2024]. Available from: https://online.statref.com/document/ZOtZEPRd_jBrYZ-Y9F5SiD.
6. Clinical Pharmacology powered by Clinical Key [Internet]. c2024 [cited 07/02/2024]. Available from: <https://www-clinicalkey-com.pklibresources.health.wa.gov.au/>.
7. Parenteral and Oral Chemotherapy Administration Guidelines used by the Children's Oncology Group: Children's Oncology Group; 2022 13/02/2024. Available from: <https://www.cogmembers.org/Site/search/default.aspx?query=Administration%20guidelines>.

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