



MONOGRAPH

Nitrofurantoin Monograph - Paediatric

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
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DRUG CLASS

Nitrofuran antibacterial.⁽¹⁾

INDICATIONS AND RESTRICTIONS

- Nitrofurantoin is used in the treatment and prophylaxis of lower urinary tract infections resistant to other first line agents.⁽²⁾
- Nitrofurantoin is not suitable for use in the treatment of complicated urinary tract infections or pyelonephritis due to inadequate systemic concentrations.⁽²⁾

Oral: Unrestricted (green) antibiotic

This is not a restricted agent. Follow standard ChAMP guidelines where appropriate.

CONTRAINDICATIONS

- Hypersensitivity to, or a history of cholestatic jaundice or hepatic dysfunction associated with nitrofurantoin or any component of the formulation.^(1, 2)
- Nitrofurantoin is contraindicated in patients with oliguria or anuria due to the increased risk of toxicity.⁽¹⁾
- Nitrofurantoin is contraindicated in neonates due to the risk of haemolytic anaemia as the red blood cells lack sufficient quantities of reduced glutathione.^(1, 3)

PRECAUTIONS

- Nitrofurantoin is generally contraindicated if eGFR <45 mL/minute/1.73 m². However, it may be used for 3–7 days for selected patients whose eGFR is 30–45 mL/minute/1.73 m² and who have a multidrug-resistant UTI.^(2, 4)
- Nitrofurantoin should be avoided in patients with glucose-6-phosphate dehydrogenase deficiency (G6PD), enolase or glutathione peroxidase deficiency due to the risk of haemolytic anaemia.^(1, 2)
- Nitrofurantoin may discolour urine to a dark yellow or brown colour.^(2, 4)

FORMULATIONS

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

- 50mg capsules
- 100mg capsules
- 10mg/mL suspension (Auspman[®])

Imprest location: [Formulary One](#)

DOSAGE & DOSAGE ADJUSTMENTS**Neonates:**

- Nitrofurantoin is contraindicated in neonates due to the risk of haemolytic anaemia. Contact an infectious diseases or clinical microbiology consultant for advice on alternative options.⁽¹⁾

Oral (≥4 weeks) - Uncomplicated lower urinary tract infection:

- Treatment: 0.75mg to 1.75mg/kg/dose (to a maximum of 100mg) given four times daily.^(2, 4, 5)
- Prophylaxis: 1-2mg/kg/dose (to a maximum of 100mg) given once daily at bedtime.^(2, 4, 5)

Antibiotic urinary prophylaxis is not routinely recommended for children following their first episode of a urinary tract infection (UTI). It may be considered for children with severe or recurrent UTIs or with vesicoureteric reflux grades III to V.⁽⁶⁾

Renal impairment:[eGFR calculator](#)

- eGFR <45mL/minute: avoid use if alternative agents are available.⁽⁴⁾
- eGFR ≥30 to <45mL/minute: Use with caution for 3 to 7 days in the treatment of an uncomplicated urinary tract infection due to multi-drug resistant bacteria.^(1, 4)
- eGFR <30mL/minute: contraindicated. Urinary concentrations may be inadequate and higher plasma concentrations may increase the risk of adverse effects.^(2, 4)

Hepatic impairment:

- No dosage adjustments are required in hepatic impairment, but nitrofurantoin should be used with caution as use is associated with hepatotoxicity.^(1, 3, 7)

ADMINISTRATION

- Oral doses should be given with food or milk to reduce nausea and improve absorption.^(1, 2, 7)

MONITORING

During long term treatment monitor:

- Pulmonary function; if respiratory symptoms occur perform a chest X-ray and consider pulmonary function tests. X-ray changes (pulmonary infiltration with consolidation or pleural effusion) and electrocardiogram (ECG) changes (which may be associated with pulmonary reactions) may occur on long term treatment.^(1, 2, 4, 7)
- Renal function as peripheral neuropathy is more likely with impaired renal function.^(1, 2)
- For development of paraesthesia as early cessation can prevent severe neuropathy.⁽²⁾
- Liver function tests monthly for the first three months, then three-monthly thereafter whilst on extended prophylactic therapy.^(1, 2, 4)

ADVERSE EFFECTS

Common: nausea and vomiting, anorexia, diarrhoea, abdominal pain, allergic skin reactions, headache.⁽²⁾

Infrequent: drowsiness, vertigo, dizziness⁽²⁾

Rare: pulmonary toxicity (reversible allergic pneumonitis, often within the first week or chronic – interstitial pulmonary fibrosis generally after approximately 6 months), peripheral polyneuropathy (usually presents as peripheral paraesthesia and sensory loss in the lower limbs), hepatotoxicity, skin reactions (Stevens-Johnson syndrome, exfoliative dermatitis), lupus-like syndrome, anaphylaxis, drug fever, eosinophilia and arthralgia.⁽²⁾

STORAGE

- Capsules: store below 30°C⁽⁸⁾
- Suspension: Store below 25°C

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

Related CAHS internal policies, procedures and guidelines

[Antimicrobial Stewardship Policy](#)


[ChAMP Empiric Guidelines and Monographs](#)

[KEMH Neonatal Medication Protocols](#)

References

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Compassion

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