



MONOGRAPH

Isradipine

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

Calcium-channel blocker of the dihydropyridine class ^(1, 2)

INDICATIONS AND RESTRICTIONS

****Special access scheme product****. [SAS application\(s\)](#) must be completed in accordance to the [TGA regulations](#).

- For the treatment of acute severe hypertension (without target organ dysfunction with no or mild symptoms) ⁽²⁻⁴⁾
- Treatment must be under the direction of a paediatric consultant

CONTRAINDICATIONS

- Hypersensitivity to isradipine or any component of the formulation ⁽³⁾
- Serious dihydropyridine hypersensitivity ⁽¹⁾
- Systolic blood pressure of less than 70 mmHg (severe hypotension) ^(5,6); isradipine decreases peripheral resistance which can worsen hypotension ⁽¹⁾

PRECAUTIONS

- Hepatic impairment- adult pharmacokinetic data has shown peak serum concentrations are increased by 32% and bioavailability is increased by 52%⁽³⁾

- Aortic stenosis – isradipine may reduce coronary perfusion ⁽³⁾
- Hypertrophic cardiomyopathy- reduction in afterload may worsen symptoms ⁽³⁾
- Angina- possible exacerbation during initiation of therapy, with dose increases, or during withdrawal of therapy ^(3,5)
- Severe bradycardia, acute myocardial infarction with pulmonary congestion, cardiogenic shock, ventricular dysfunction, or congestive heart failure- may exacerbate heart failure due to isradipine's negative inotropic effects ⁽¹⁾
- Gastro-oesophageal reflux disease (GORD) or hiatal hernia associated with reflux esophagitis- isradipine can relax the lower esophageal sphincter ⁽¹⁾

FORMULATIONS

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

- 2.5 mg capsule
- 1 mg/mL extemporaneous oral suspension (compounded by PCH pharmacy)

Imprest location: [Formulary One](#)

DOSAGE & DOSAGE ADJUSTMENTS

Oral ($\geq$ 4weeks old):⁽⁸⁻¹⁰⁾

Starting dose 0.05-0.1 mg/kg (max 5 mg); dose may be repeated after one hour if required (usually dosing is 2-4 times per day) ^(3, 4, 6, 7)

Titrate to effect, maximum daily dose 0.8 mg/kg/day (maximum 20 mg/day) ⁽¹⁾

Hepatic impairment:

- Use lower starting dose

Concurrent azole antifungal use

- Some evidence of an exaggerated blood pressure drop, use a starting dose of 0.05 mg/kg ⁽⁶⁾

ADMINISTRATION

- Administer isradipine without regard to food ^(3, 8)
- Oral suspension: shake well before use

MONITORING

- Blood pressure and heart rate at 30 minutes, 1 hour and 2 hours after administration ^(1, 5)
- Renal and hepatic function ⁽³⁾

ADVERSE EFFECTS⁽³⁾

Common: headache ^(1, 9)

Infrequent: angioedema, flushing, palpitations, tachycardia, chest pain, nausea, abdominal distress, diarrhoea, vomiting. weakness, dyspnoea and skin rash ^(1, 9)

Rare: atrial fibrillation, cardiac failure, constipation, hypotension, leg cramps, myocardial infarction, nervousness, syncope, transient ischaemic attacks, ventricular fibrillation, visual disturbance and xerostomia ⁽⁶⁾

STORAGE

Capsules: Store at 20°C to 25°C, protected from moisture, humidity, and light ^(3, 5, 7)

Suspension: Refrigerate, protect from light; stable for 35 days ^(1, 3, 5, 10)

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

Useful resources (including related forms)

The WA Paediatric Medicines Formulary: [Formulary One](#)

Therapeutic GoodS Administration: [Special Access Scheme](#)

References

1. Clinical Pharmacology. Isradipine Clinical Key; 2024 [Available from: <https://www-clinicalkey-com.pklibresources.health.wa.gov.au/pharmacology/monograph/331?sec=mondesc>].
2. 2004 P. National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents : The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents; (114(2 Suppl 4th Report):555-576.). Available from: http://www.ncbi.nlm.nih.gov.pklibresources.health.wa.gov.au/entrez/query.fcgi?cmd=Link&db=PubMed&dbFrom=PubMed&from_uid=15286277.
3. UpToDate. Isradipine: Pediatric drug information: Lexicomp; 2024 [Available from: https://www-uptodate-com.pklibresources.health.wa.gov.au/contents/isradipine-pediatric-drug-information?search=isradipine&topicRef=6468&source=see_link].
4. Lurbe E A-RE, Cruickshank JK, Dominiczak A, Erdine S, Hirth A, Invitti C, Litwin M, Mancina G, Pall D, Rascher W, Redon J, Schaefer F, Seeman T, Sinha M, Stabouli S, Webb NJ, Wühl E, Zanchetti A. 2016 European Society of Hypertension guidelines for the management of high blood pressure in children and adolescents. J Hypertens [Internet]. (2016 Oct;34(10):1887-920). Available from: <https://pubmed.ncbi.nlm.nih.gov/27467768/>.
5. Micromedex I. Isradipine 2024 [11/07/2024]. Available from: https://www-micromedexsolutions-com.pklibresources.health.wa.gov.au/micromedex2/librarian/CS/431C2A/ND_PR/evidencexpert/ND_P/evi dencexpert/ DUPLICATIONSHIELDSYNC/615745/ND_PG/evidencexpert/ND_B/evidencexpert/ND_AppPro duct/evidencexpert/ND_T/evidencexpert/PFActionId/evidencexpert.DoIntegratedSearch?SearchTerm=isra dipine&UserSearchTerm=isradipine&SearchFilter=filterByDrugHome&navitem=searchDrug#.
6. Flynn J KD, Baker-Smith C, Blowey D, Carroll A, Daniels, Sarah D. de Ferranti, Janis M. Dionne, Bonita Falkner, Susan K. Flinn, Samuel S. Gidding, Celeste Goodwin, Michael G. Leu, Makia E. Powers, Corinna Rea, Joshua Samuels, Madeline Simasek, Vidhu V. Thaker, Elaine M. Urbina, . Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents; (Sep 2017, 140 (3) e20171904; DOI: 10.1542/peds.2017-190). Available from: <https://pediatrics.aappublications.org/content/140/3/e20171904.long>.
7. Miyashita Y PD, Rees JM. Isradipine for treatment of acute hypertension in hospitalized children

References

- and adolescents 2010; (12(11):850-855.). Available from: http://www.ncbi.nlm.nih.gov.pk/libresources.health.wa.gov.au/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Abstract&list_uids=21054771.
8. Flynn J PD. Calcium channel blockers: pharmacology and place in therapy of pediatric hypertension. *Pediatr Nephrol* (2000) 15:302–316. 25 Mar 2021. Available from: <https://pubmed.ncbi.nlm.nih.gov/11149130/>.
9. SJ FJW. Isradipine treatment of hypertension in children: a single-center experience. 2002 21 Mar 2021; (17(9):748-753.). Available from: http://www.ncbi.nlm.nih.gov.pk/libresources.health.wa.gov.au/entrez/query.fcgi?cmd=Link&db=PubMed&dbFrom=PubMed&from_uid=12215829.
10. MacDonald J JC, Jacobson P. stability of Isradipine in Extemporaneously Compounded Oral Liquids. *Am J Hosp Pharm* 1994(51(19):2409-11.7847406).

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