MONOGRAPH

CLONIDINE

Scope (Staff):	Medical, Pharmacy, Nursing, Anaesthetic Technicians
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

⚠ HIGH RISK MEDICINE ⚠

QUICKLINKS

Dosage/Dosage Adjustments	Administration	Compatibility	Monitoring

DRUG CLASS

Clonidine is a centrally acting alpha-2 adrenoreceptor agonist[1]

Clonidine is a High Risk Medicine.

INDICATIONS AND RESTRICTIONS

- Hypertension[1]
- Attention deficit hyperactivity disorder (ADHD), tic disorders[2]
- Pre-operative/procedural sedation/critical care sedation[2]
- Analgesia (also used in epidurals as an adjunctive agent)[1]
- Management of opioid and benzodiazepine withdrawal[1]

CONTRAINDICATIONS

- Hypersensitivity to clonidine or any component of the formulation[3]
- Severe bradyarrhythmia due to sick sinus syndrome or second or third degree AV block[3]

PRECAUTIONS

- Consider using a lower dose of clonidine if combining with other sedating medication[1]
- Do not abruptly discontinue clonidine as rapid increases in blood pressure and symptoms of sympathetic overactivity may occur (e.g. increased heart rate, tremors, agitation, anxiety, insomnia, sweating, palpitations).[4] Reduce the dose over at least 2 to 4 days to avoid rebound hypertension.[5]
- Clonidine causes central nervous system (CNS) depression, which may impair physical or mental abilities.[4] This may be enhanced if concomitant CNS depressant medication is used.[4]

FORMULATIONS

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

- Clonidine 100 microgram tablet
- Clonidine 150 microgram/mL ampoule
- Clonidine 10 microgram/mL suspension (Auspman)

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

Neonates: Refer to Neonatal Medication Protocols

- The doses below are within the standard reference range for each indication however, the dose of clonidine may be titrated depending on the patient's clinical needs and response.
- All doses of clonidine should be prescribed in micrograms with "microg" being the only acceptable abbreviation for this unit of measure e.g. x*x microgram* or *xx microg*.
- *See 'monitoring' below for further essential information*

Hypertension

Oral

- Children 1-18 years: initially 1 to 3 micrograms/kg/dose three times a day. Start at the lower end of the range and gradually increase dose according to response to a maximum of 8 micrograms/kg/dose three times daily (maximum 300 micrograms/dose).[2]
- Total daily dose may be given in 2 doses if tolerated.[2]

Intravenous

- Children 2-18 years: 1 to 6 micrograms/kg/dose (maximum 300 micrograms/dose) as a single dose by slow intravenous injection over 10-15 minutes.[6]

Acute Severe Hypertension (Hypertensive Crisis)

Oral

- Infants 1-12 months: 1 to 2 micrograms/kg/dose.[14]
- Children 1-18 years: 2 micrograms/kg/dose (maximum 100 micrograms/dose).[7]

Repeat dose hourly as necessary to a maximum of eight doses in 24 hours.[7]

Attention deficit hyperactivity disorder (ADHD) and tic disorders

Oral

- Children 6-18 years: initially 25 to 50 micrograms at bedtime; increase daily dose by 25 to 50 micrograms every 3 days according to response to a maximum of 300 micrograms daily in 2-3 divided doses.[2]

Pre-operative / Procedural Sedation

Oral

- Children 1-18 years: 2 to 4 micrograms/kg/dose (maximum 300 micrograms/dose) 60 minutes prior to procedure.[2]

  Consider using the lower end of the range if combining with other sedatives.[2]

Moderate to severe acute pain

To be initiated by or on discussion with the Acute Pain Service (APS).

Where opioid and adjuvant analgesia alone are insufficient or addition of clonidine may optimise analgesia (e.g. post-operative pain, trauma, disease or treatment related pain, neuropathic pain).

Clonidine is also used to have an opioid sparing effect and provide additional therapeutic benefits such as anxiolysis or sedation.

Oral[8,13]

- Children 1 month to 18 years: 0.5 to 2 micrograms/kg/dose up to 6 hourly (larger dose may be given at night to promote sleep). For doses greater than 2 microgram/kg/dose discuss with APS. Maximum single dose depends on many factors and can be discussed with APS.

  Consider using the lower end of the range if combining with other sedatives[2]*.*

Intravenous injection[8,13]

Intravenous route may be required if enteral route is not an option or if rapid pre-procedural sedation is required.

- Children 1 month to 18 years: 1 microgram/kg/dose (recommended maximum of 50 micrograms/dose) up to three times daily.

  Consider starting with a lower dose if combining with other sedatives[2]*. IV route rarely used for analgesia-APS use only.*

Epidural

Clonidine as an adjunct in epidural.

Please see the following link and refer to PCH Acute Pain Service (APS) / Department of Anaesthesia for further information: Epidural Infusion Management Guideline

Management of opioid and benzodiazepine withdrawal[9, 10, 13]

Withdrawal Assessment Tool (WAT-1) (MR859.80) *and discussion with APS may guide prescribing for this indication. Further information regarding withdrawal can be found in the Withdrawal Syndrome Management guidelines.*

Oral or intravenous

- Infants 1-12 months: 0.5 to 2 micrograms/kg/dose 6 hourly.
- Children 1-18 years: 1 to 2 micrograms/kg/dose (maximum 200 micrograms/dose[10]) 6 hourly.

Clonidine may be added to facilitate weaning of analgesia and sedation if the patient is not already receiving clonidine. Dose may be titrated up to 5 microgram/kg/dose (maximum 200 micrograms/dose) 6 hourly if necessary. Some patients may require different doses and/or frequency of administration depending on previous usage of opioid / benzodiazepine. Discussion with APS is advised in this circumstance.

Renal impairment:

- Start with a low dose and adjust according to response.[1] No specific GFR based dose adjustment. Bradycardia, hypotension and sedation are more likely to occur in renal impairment.[4]

Hepatic impairment:

- Fifty per cent of a dose is metabolised in the liver[5]. In hepatic impairment the half-life may be prolonged. Monitor the dosage regimen.[3]

RECONSTITUTION & ADMINISTRATION

Oral

- May be taken without regard to food[5]
- Tablets may be crushed and dissolved in water[11]
- For pre-operative / procedural sedation it is recommended that the oral dose is given 30 to 60 minutes before anticipated procedures

Intravenous

- On a general ward intravenous clonidine may be administered by a Registered Nurse or an IV competent Enrolled Nurse (who has completed both the PCH Enrolled Nurse Intravenous Medication Administration and the PCH Enrolled Nursed Schedule 4R and Schedule 8 Medication Administration Competencies), only in the presence of specific monitoring as documented below.
- A Medical Officer must be in attendance for administration of the first dose of intravenous clonidine during an episode of care when administered outside of the Neonatal Intensive Care Unit (NICU), Paediatric Critical Care (PCC), Theatre and Emergency Department.

- For pre-operative / procedural sedation it is recommended that the intravenous dose is given 15 minutes before anticipated procedures.
- Intravenous injection: reconstitution is not required; dilute dose to maximum concentration of 30 microgram/mL with sodium chloride 0.9% and give as a slow intravenous injection over 10-15 minutes.[6, 12]
- Transient hypertension may precede hypotension if the intravenous injection is administered too rapidly.[12]

Regional (Epidural/Nerve Block)

As per Epidural Infusion Management

COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

Compatible fluids:

Sodium chloride 0.9%[12]

Only commonly used drugs are listed below. This is not a complete list of incompatible drugs. Compatibilities of IV drugs must be checked when two or more drugs are given concurrently.

INCOMPATIBLE drugs:

Midazolam[5]

MONITORING

Consider additional monitoring if patient is prescribed concurrent sedating agents.

Oral:

- Heart rate (HR) and blood pressure (BP) should be monitored at initiation of therapy, with any dose increase and periodically during therapy.[4]
- Consider ECG monitoring in patients with a history of heart disease or concurrent use of medications affecting cardiac conduction.[4]

Intravenous:

- Intravenous clonidine may be administered by a registered nurse on a general ward, only in the presence of the specific monitoring as documented below.
- A medical officer must be present for the first dose of intravenous clonidine and be immediately available on the ward for 30 minutes after administration.
- For a 'PRN' intravenous dose the patient should be monitored at baseline and every 5 minutes post first dose for 20 to 30 minutes then hourly thereafter for four hours post dose.
- For the FIRST regular intermittent intravenous dose the patient should be monitored at baseline and every 5 minutes post dose for 20 minutes then hourly thereafter for four hours post dose. If HR, BP, oxygen saturation and sedation score are stable after the first dose and

there is no change in clinical state of the patient, consider returning to usual frequency of observations for subsequent doses of clonidine.

Monitoring parameters for intravenous clonidine	
Paediatric Acute Recognition and Response Observation Tool (PARROT) Charts	***Additional monitoring when Clonidine is used for pain (in addition to Observation and Response Chart observations):*** ***Pain Assessment and Management Record (*Note: some areas do not use Observation and Response charts or Pain Assessment and Management Record (MR871.00). In this case area specific records are acceptable)***
• Heart rate • Respiratory rate • Oxygen saturation • Blood pressure	• Pain Intensity Score (when awake) • Sedation Score (UMSS) • Functional Activity Score (each shift)

The prescriber will determine the need for oxygen therapy and will prescribe as appropriate

Epidural:

- For all patients with epidural see the following link for monitoring: Epidural Infusion Management Guideline

Pre-operative sedation / analgesia:

- Monitor: HR, respiratory rate, oxygen saturation, BP as per Oral Conscious Sedation Guideline

Withdrawal of clonidine:

- On general wards, during withdrawal of clonidine, the patient should have their BP monitored and documented every 6 hours until 24 hours after the last dose of clonidine.
- If the mean BP increases by more than 50% over 24 hours contact the doctor and slow down the weaning of clonidine.

Management of opioid and benzodiazepine withdrawal:

- Monitor as per WAT-1 (MR859.80)

ADVERSE EFFECTS

Common: Dizziness, drowsiness, sedation, fatigue, sleep disturbance, headache, depression, nausea, vomiting, constipation, dry mouth, salivary gland pain, orthostatic hypotension, erectile dysfunction[1]

Infrequent: Bradycardia, itching, rash, fluid retention (transient), disturbed mental state, nightmare[1]

Rare: Gynaecomastia, AV block, urinary retention, dry eyes, Raynaud's phenomenon, thinning of hair, transient alterations of liver function[1]

STORAGE

Tablet, ampoule – store below 25°C[3]

Suspension – store between 2 - 8°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 **clonidine**. Any variations to the doses recommended should be clarified with the prescriber prior to administration

Related CAHS internal policies, procedures and guidelines

Epidural Infusion Management Guideline

Medication Administration Policy

Medication Preparation Checking and Administration Procedure

Oral Conscious Sedation Guideline

Paediatric Acute Recognition and Response Observation Tool (PARROT) Charts

Withdrawal Syndrome Management Guideline

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