GUIDELINE

Narcotic Dependence: Treatment of Iatrogenically Acquired Narcotic Dependence

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH, NETS WA

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

Aim

Prolonged administration of opioids and/or benzodiazepines may induce drug tolerance and physiological dependency. This outlines the management of Iatrogenically Acquired Narcotic Dependence.

Risk

Abrupt discontinuation or rapid weaning of these drugs may result in iatrogenic acquired withdrawal syndrome (IWS)

Background

- Opioids via continuous infusion for as little as 5 days can result in IWS
- Signs of withdrawal may not be immediate and may take up to 48 hours to manifest

Withdrawal Assessment

- Narcotic withdrawal can be objectively assessed using the NAS observation chart and should be used in conjunction with this protocol. Refer to Neonatal Abstinence Syndrome (NAS) guideline
- Initiate NAS chart assessments in all neonates perceived at risk e.g.
  - Received intravenous opioid for 5 days or more
  - Neonates exhibiting potential symptoms following weaning or cessation

- Score every 4 hours if scores < 8, score every 2 hours if scores > 8. Severe symptoms (total score > 8 on 3 consecutive occasions or > 12 on two occasions) should be reported to the medical staff for further management.

Management of Infant at Risk of Iatrogenic NAS

General Considerations

- If NAS scores are high, the infant **must be reviewed** to exclude other causes
- If NAS scores are low, a more rapid weaning schedule should be considered
- Polypharmacy: If on multiple agents, aim to wean agents on alternate days
    - For example wean morphine on day 1; clonidine on day 2; morphine day 3

Category 1: Opiates or Benzodiazepine Administered for Less than 5 Days

- Reduce rate as clinically indicated and tolerated
- If intubated please refer to post-operative pain guideline for weaning
- Initiate NAS observation chart **only** if withdrawal symptoms are observed
- If ongoing analgesia is required, then consider opiate rotation weekly

Category 2: Narcotics Administered for 5 to 14 Days

- If ongoing analgesia is required, then consider opiate rotation weekly
- Initiate withdrawal observation chart for all infants in this category
    - Reduce rate by 10-20% every 24-48 hours provided NAS < 8 most of the day
    - 3 consecutive NAS > 8 for 3 consecutive scores for medical review and consider step back to higher dose
- Monitor for signs of withdrawal for at least 48 hours post cessation of medication
- Consider conversion to oral formulation when on enteral feeds
- Consider adjunct if weaning is difficult (clonidine, benzodiazepine)

Category 3: Narcotics Administered for Greater than 14 Days

- If ongoing analgesia is required, then consider opiate rotation weekly
- Initiate withdrawal observation chart for all infants in this category
    - Reduce rate by 5-10% every 24-48 hours provided NAS < 8 over most of the period

  - If NAS > 8 for 3 consecutive scores for medical review and consider step back to higher dose
- Monitor for signs of withdrawal for at least 48 hours post cessation of medication
- Consider conversion to oral formulation when on enteral feeds
- Consider adjunct if weaning is difficult (clonidine, benzodiazepine)

Opiate Rotation

- Opiate rotation may reduce tachyphylaxis to one type of opiate to allow earlier weaning
  - It is appropriate to rotate every 1-2 weeks between fentanyl and morphine
  - Hydromorphone rotation requires APS involvement
  - Once conversion is complete consider reducing the dose as per weaning guide in Post Operative Analgesia

Opiate Duration	< 5 days	5-14 days	> 14 days
Risk of withdrawal	Low	Medium	High
NAS < 8 for majority of preceding 24 hours	Reduce dose by 20-50% 12 hourly	Reduce dose by 10-20% every 24-48 hours	Reduce dose by 5-10% every 24-48 hours
3 consecutive NAS > 8	Medical review Consider top up dose and return to previous stable dose	Medical review Consider top up dose and return to previous stable dose	Medical review Consider top up dose and return to previous stable dose

Conversion Chart for Opiates (refer to Appendix 1)

- Common opiates used are morphine, fentanyl and hydromorphone
- Neonates may have slightly different metabolism thus using online calculators may overestimate or underestimate the conversion doses
- For conversions between intravenous opiates:
  1. Convert total daily dose of opiate
  2. Follow conversion diagram (Appendix 1)

- For conversion from intravenous opiate to oral morphine:
    1. Convert total daily dose of opiate
    2. Follow conversion diagram to IV morphine
    3. Follow conversion diagram to PO morphine
    4. Divide total morphine dose into 4 to 6 daily doses

Conversion for Benzodiazepine

- There is little evidence available to assist in conversion of IV to PO benzodiazepines
- Discuss with unit pharmacist to assist with conversion

Adjunct Therapies

α2-Adrenergic Receptor Agonist

Clonidine

- It may significantly reduce the symptoms of IWS with minimal adverse effects when used either as adjunctive therapy or monotherapy
- It may reduce the overall duration of pharmacotherapy in NAS treatment
- Clonidine may be administered via intravenous infusion or orally and the dosage is in micrograms per kg, refer to Neonatal Medication Protocol: Clonidine.

Dexmedetomidine

- Relatively selective, centrally acting agent
- May have sedative and some analgesic properties without effect on respiratory drive
- Useful for intubated patients

Benzodiazepines

- Use of benzodiazepines may reduce the dose of opiate required in ventilated patients
- Oral diazepam or clonazepam may reduce symptoms of IWS
- Has sedative, hypnotic, antiepileptic and muscle relaxant effects

Related CAHS internal policies, procedures and guidelines

Neonatal Abstinence Syndrome (NAS)

References and related external legislation, policies, and guidelines

1. ANAND KJS. ET AL. (2010). Tolerance and withdrawal from prolonger opioid use in critically ill children. Pediatrics. 125(5), 1208-25.
2. Galinkin J, Lee Koh J, Committee on Drugs, Section on Anaesthesiology and Pain Medicine. Recognition and Management of Iatrogenically Induced Opiod Dependence and Withdrawal in Children. Pediatrics 2014, 133 (1) 152-155; DOI: 10.1542/peds.2013-3398
3. Lewis T, Erfe BL, Ezell T, Gauda E. Pharmacoepidemiology of opiate use in the neonatal ICU: Increasing cumulative doses and iatrogenic opiate withdrawal. J Opioid Manag. 2015 Jul-Aug;11(4):305-12. doi: 10.5055/jom.2015.0279
4. https://www.sickkids.ca/clinical-practice-guidelines/clinical-practice-guidelines/export/CLINH303/Main%20Document.pdf Prevention and Treatment of Opioid and Benzodiazepine Withdrawal. Accessed 3/08/2017.
5. http://www.slhd.nsw.gov.au/RPA/neonatal%5Ccontent/pdf/Medications_Neomed/Morphine_ORAL_NeonMedv1.0_Full_20170529.pdf. Accessed 29/09/2017.
6. Hunseler C, Balling G, Rohlig C,. Continuous infusion of clonidine in ventilated newborns and infants: a randomized controlled trial. Pediatr Crit Care Med. 2014;15:511-522. doi:10.1097/PCC.0000000000000151
7. Streetz VN., Gildon BL., Thompson DF. Role of Clonidine in Neonatal Abstinence Syndrome A Systematic ReviewAnnals of Pharmacotherapy 2016: 50 (4): 301-310 https://doi.org/10.1177/1060028015626438
8. Harris, J., Ramelet, A.-S., van Dijk, M., Pokorna, P., Wielenga, J., Tume, L., Ista, E. (2016). Clinical recommendations for pain, sedation, withdrawal and delirium assessment in critically ill infants and children: an ESPNIC position statement for healthcare professionals. *Intensive Care Medicine*, *42*, 972–986. http://doi.org/10.1007/s00134-016-4344-1

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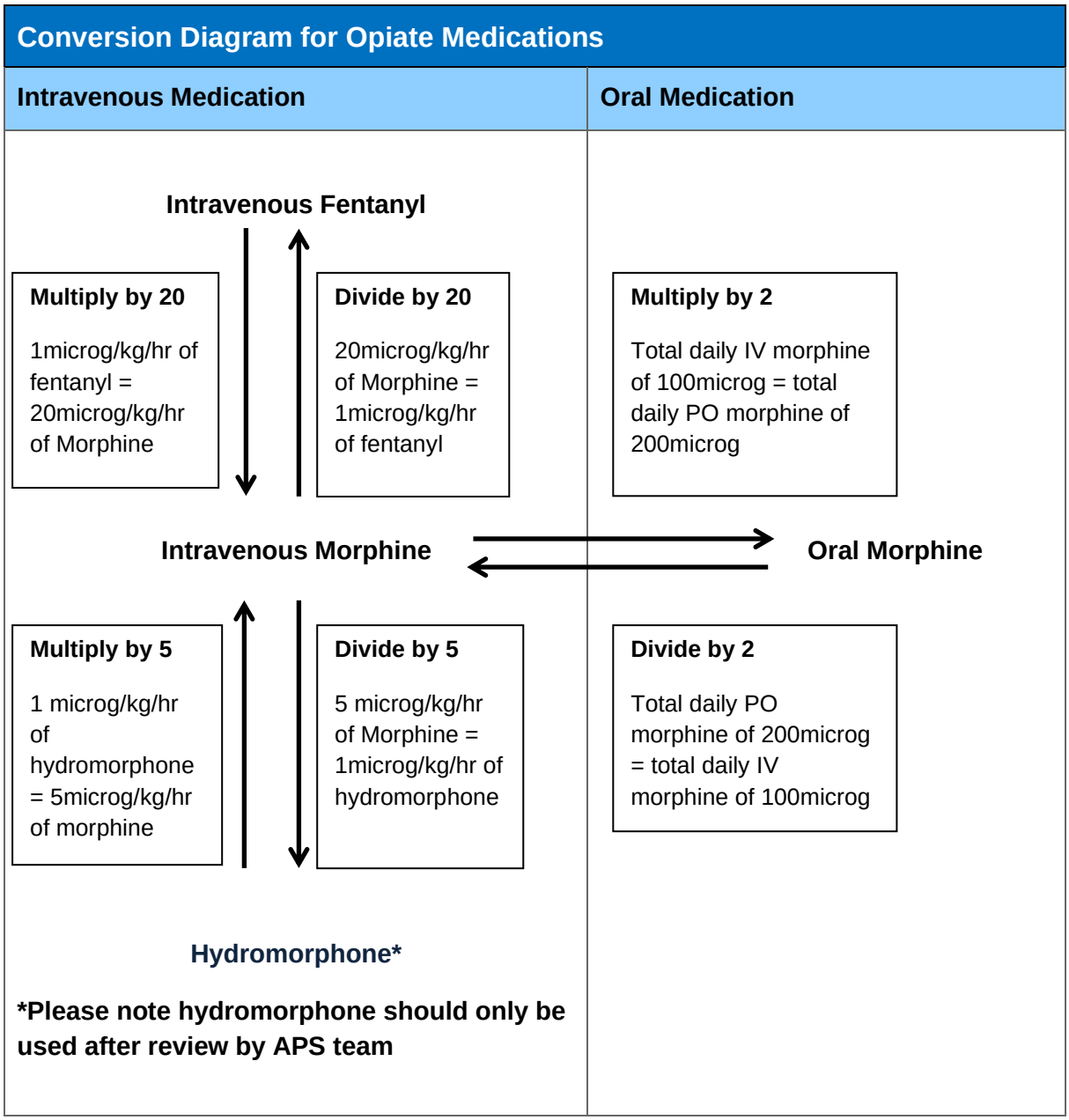
Appendix 1: Conversion Diagram for Opiate Medications



Example:

A 24-hour total dose of IV morphine equals 1mg, oral morphine equivalent will be 2mg. (daily oral dose is twice the daily IV dose)

IV fentanyl continuous infusion at 1microgram/kg/hr in a 3kg patient

= 24microgram/kg/day = 72microgram in 24 hours.

1 microgram of fentanyl is equivalent to 20 microgram of IV morphine

Equivalent IV morphine 24-hour dose = 1440 microgram of IV morphine

Convert to oral morphine (Oral dose is twice the dose of IV morphine)

= 2880 microgram of oral morphine in 24 hours

= 720 microgram PO q6hourly, oral morphine.