NALOXONE – Treatment of opioid induced over-sedation, respiratory depression, pruritis and nausea

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

To reverse opioid related side effects including respiratory depression, over sedation, pruritus and nausea, without reversal of analgesia

2. PATIENT

- Woman who:
  - is not responsive, or difficult to rouse after an opiate dose (Sedation Score 3)
  - is persistently drowsy after an opiate dose (Sedation Score 2) and has a respiratory rate (RR) ≤ 5 breaths per minute after opiate dosage.
  - has pruritus after opioid dosage.
  - has post-operative nausea and vomiting (PONV), after an opioid dose, where a conventional antiemetic has failed.

3. STAFF

- Medical, midwifery and nursing staff

4. EQUIPMENT

- Blue tray
- Syringes - 1mL and 10mL
- 18g blunt tip drawing up needle
- 25g needle - for subcutaneous (SC) use
- 23g needle - for intramuscular (IM) use

5. CLINICAL PRACTICE

Nursing management of respiratory depression and/or over sedation from opiates

- Stop all opioid infusions or remove patient-controlled analgesia (PCA button) from woman
- Do not administer any further opioids
- Place woman in appropriate position to maintain airway (e.g. recovery position or sitting up for those with epidural blockade)
- Administer oxygen at 10L/minute via a Hudson Mask
- Take a full set of observations including oxygen (O^2) saturations and respirations
- Call a Clinical Review if sedation score 2 or RR 6-10 per minute
- Remain with the woman and administer naloxone as a standing order (Appendix 1)
- Call a Rapid Response if sedation score 3 (difficult to rouse)
- Retrieve emergency trolley and drug kit
- Call a Code Blue if sedation score 3 (unresponsive) or RR ≤ 5 per minute

Observations for intravenous (IV), IM or SC Naloxone

- Monitor the woman's sedation and respiratory status and encourage her to take deep breaths every 1-2 minutes until she is more alert and RR ≥ 10 breaths per minute.
- Monitor and record observations and pain score at a frequency that is appropriate to the clinical condition

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Observations for IV infusion of Naloxone

- Monitor woman who is receiving continuous naloxone infusion in high acuity area (e.g. intensive care unit (ICU), high dependency unit (HDU)
- Monitor for symptoms of persistent opioid toxicity - recording observations including RR, sedation levels and O^2 saturations at a frequency that is appropriate to the clinical situation until woman is more alert and RR ≥ 10 breaths per minute.
- Monitor pain score hourly or as appropriate for level of pain until stable.
- Perform continuous cardiac monitoring for adverse cardiovascular effects – ventricular tachycardia, fibrillation, acute pulmonary oedema, hypotension, hypertension, ventricular arrhythmias.
- Monitor symptoms of rapid reversal of opioid effects – nausea, vomiting, sweating, tachycardia, tremor and tachypnoea.
- Monitor for symptoms of opioid withdrawal – severe pain, agitation, dilated pupils, rapid RR, increased pulse and blood pressure.

6. DOCUMENTATION

- Medical Record
- eMEDS
- Clinical Emergency Response System (CERS) online documentation
- NSW Health State Pain Charts

7. EDUCATIONAL NOTES

Precautions

- Administration of naloxone to narcotic dependant patients may precipitate severe withdrawal symptoms i.e. pain, agitation and aggression
- If naloxone does not produce the desired effect, other differential diagnoses must be considered. (e.g. hypoglycaemia).
- Patients on long acting opioids and patients who are administered intraoperative neuraxial morphine are more likely to be at risk of persistent respiratory depression.
- The half-life of naloxone is shorter than most opioid drugs so repeat doses may be required.

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Patient Controlled Analgesia (PCA) - Intravenous or subcutaneous
- Epidural Analgesia Programmed Intermittent Epidural Bolus (PIEB) and Patient Controlled Epidural Analgesia (PCEA) – Delivery Suite
- Epidural Analgesia - Continuous Infusion Adult (Non-maternity)
- Neuraxial (Intrathecal or Epidural) Opioid – Single Dose Morphine only
- Pain Protocol (Ketamine) – Recovery Room Only
- Morphine Sulphate – Subcutaneous (Non-Maternity)
- Morphine Subcutaneous - Maternity
- Patient Controlled Analgesia (PCA) Remifentanil - in Labour
- Naloxone Administration for Opioid induced Respiratory Depression. POWH CLIN044
- Pain Assessment and Measurement Guidelines POWH CLIN108
- Clinical Emergency Response System (CERS) – Management of the Deteriorating patient

9. RISK RATING

- Medium

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10. NATIONAL STANDARD

- Standard 4 – Medication Safety

11. REFERENCES

1. Brunton LL, Hilal-Dandan R, Knollmann BC eds. (2017) Goodman and Gilman's The Pharmacological Basis of Therapeutics. (13th ed.). New York: McGraw-Hill. ISBN 978-125958473. 1440pp.
2. MIMs online accessed 2/19 https://www.mimsonline.com.au/Search/Search.aspx
3. Therapeutic guidelines access 2020 https://www.tg.org.au/
4. Naloxone Administration for Opioid induced Respiratory Depression. POWH CLIN044

REVISION & APPROVAL HISTORY
Reviewed and endorsed Therapeutics & Drug Utilisation Committee 17/4/20
Approved Quality & Patient Care Committee 16/3/17
Reviewed and endorsed Therapeutics & Drug Utilisation Committee 16/2/17
Approved Quality & Patient Safety Committee 19/11/15
Reviewed and endorsed Therapeutics & Drug Utilisation Committee 13/10/15
Approved Quality & Patient Safety Committee 18/8/11
Reviewed and endorsed Therapeutics & Drug Utilisation Committee 14/6/11
Approved Clinical Performance & Quality Committee August 2007

FOR REVIEW : MAY 2023

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Appendix 1

Prescribing Naloxone

<table>
<tr><th colspan="8">NALOXONE</th></tr>
<tr><th>Purpose</th><th>Route</th><th>Dosage</th><th>Concentration</th><th>Frequency</th><th>Flush</th><th>MAX. Dose</th><th>Notes</th></tr>
<tr><td>Standing order for sedation score 3 or sedation score 2 + respiratory rate ≤ 5</td><td>IV</td><td>100mcg</td><td>100mcg/mL (Dilute 400mcg in 4mL sodium chloride 0.9%)</td><td>Every 2-3 minutes</td><td>10ml Sodium Chloride 0.9%</td><td>400mcg</td><td rowspan="2">STANDING ORDER
To be signed by Medical Officer within 24 hours</td></tr>
<tr><td>Standing order for sedation score 3 or sedation score 2 + respiratory rate ≤ 5</td><td>SC/IMI</td><td>400mcg</td><td>400mcg/mL (Draw up complete ampule)</td><td>Single Dose Only</td><td>N/A</td><td>400mcg</td></tr>
<tr><td>Persistent sedation or respiratory depression</td><td>IV Inf.</td><td>400mcg-800mcg/hour Or (100-200mL/hour)</td><td>4mcg/1mL (Dilute 2000mcg (2mg) in 500mL Sodium Chloride 0.9%)</td><td>Titrate to patient response</td><td>N/A</td><td>N/A</td><td>To be prescribed by MO before commencement</td></tr>
<tr><td>Pruritus and Nausea</td><td>IV/SC</td><td>40mcg</td><td>40mcg/1mL (Dilute 400mcg in 10mls sodium chloride 0.9%)</td><td>Every 10-20 minutes</td><td>10ml Sodium Chloride 0.9%</td><td>3 Doses initially

THEN regimen may be repeated 2 hours after last dose</td><td>To be prescribed by MO before commencement</td></tr>
<tr><td>Pruritus and Nausea (if received neuraxial opioid may need more)</td><td>IV/SC</td><td>100mcg</td><td>100mcg/1mL (Dilute 400mcg in 4mL sodium chloride 0.9%)</td><td>Every 30 minutes</td><td>10ml Sodium Chloride 0.9%</td><td>3 Doses</td><td>To be prescribed by MO before commencement</td></tr>
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