Naloxone for opioid-induced respiratory depression

Background
The identification and management of symptoms of severe opioid toxicity is complex in patients on long term opioids in a palliative care setting. Opioid induced respiratory depression is rare in our group of patients, but may occur due to the following:

- The patient receives the correct prescribed dose but either:
  - The dose is too high for them to tolerate (e.g. in opioid naïve patients) or
  - There is a change in the metabolism or clearance of the opioid due to a change in clinical status (e.g. renal impairment, co-prescription of an interacting drug)
- The patient receives an incorrect dose of opioid, either deliberately or accidentally.

Only when the opioid toxicity is severe and life threatening should naloxone be considered. In less severe cases supportive measures may be all that is needed to ensure patient safety and symptom control.

Diagnosis of opioid-induced respiratory depression
Respiratory depression is synonymous with hypoventilation, which occurs naturally at the end of life. In patients with palliative care needs who are identified to have respiratory depression, the patient’s clinical history should be taken into account and there should be an assessment as to whether the respiratory changes observed are a natural part of the dying process. Naloxone will reverse the effects of the opioid so the patient may develop pain, and this should be considered. If death is expected and imminent, naloxone should not be administered unless there is clearly an acute change that is both potentially reversible and in the best interests of the patient to do so.

Significant respiratory depression can be present despite a respiratory rate ≥8/min, but this is less common. Respiratory depression occurs if there is sufficient reduction in a patient’s level of consciousness that they are unable to maintain their airway and breathe efficiently.

Assessment Procedure
Please follow flow chart overleaf. Any decision to administer naloxone should be discussed with a Consultant. The intention to administer naloxone depends on two key factors: respiratory rate and level of consciousness.

Preparation and administration of naloxone
(1) Naloxone should be prescribed by a Doctor prior to administration. Remote prescription is acceptable if there is an urgent need and it is deemed clinically appropriate.
(2) Dilute a 400mcg/ml ampoule of naloxone to a total volume of 10ml in normal saline and label the syringe with the contents.
(3) Administer 20mcg (0.5ml prepared solution) intravenously or subcutaneously every two minutes until the patient’s respiratory rate rises above 10 breaths per minute.
(4) Continue to monitor the patient using the attached monitoring sheet. Should the patient’s respiratory rate again fall below 8 breaths per minute, repeat the bolus dose as needed.
Opioid induced respiratory depression suspected

Check: Which opioid, dose and when received.
Consider all opioids administered in last 24 hours

Check: respiratory rate, oxygen saturations and level of consciousness

Contact a doctor urgently (contact on-call doctor if out of hours)

**IS DEATH EXPECTED AND IMMINENT?**

- **IF** respiratory rate ≤8
  - **AND**
    - The patient is unrousable or cyanosed
  - **AND**
    - not in the terminal phase

**GIVENALOXONE**
20mcg bolus dose SC/IV every 2 minutes until RR >10/min
Treat any hypoxia with O₂
Consider removal of fentanyl or buprenorphine patch, or removal of syringe driver
Discuss plan for the next scheduled dose of regular opioid
Monitor patient as per KW GL159 monitoring sheet (and guidance overleaf)

- **IF** patient is rousable and not cyanosed
  - **(with any respiratory rate)**

  Treat any hypoxia with O₂
  Consider removal of fentanyl or buprenorphine patch, or removal of syringe driver
  Discuss plan for the next scheduled dose of regular opioid

**YES**
Naloxone should not be administered. Use supportive measures:

**NO**

IS DEATH EXPECTED AND IMMINENT?
Ongoing treatment

- Monitoring is required for a minimum of 12 hours if a long acting opioid has been given, and a minimum of 6 hours if a short acting opioid has been given. This should be as per the monitoring sheet GL159. Naloxone has a short half-life (measured in minutes) so a single dose use would be very unusual and repeated dosing should be expected.
- A longer period of monitoring is required in patients prescribed transdermal patches.
- Consider whether transfer to hospital for naloxone infusion or more intensive monitoring is necessary. This is particularly relevant for patients on methadone, fentanyl or buprenorphine as the effects will take longer to reverse.
- The Consultant on-call should be contacted and informed.
- The Director of Clinical Services should be informed the next working day.

References

(3) *Scottish Palliative Care Guidelines*. NHS Lothian (2009) 52-53