Bradford, Airedale, Wharfdale and Craven Palliative Care Managed Clinical Network

Guideline for the use of Naloxone in Palliative Care

Naloxone is an opioid antagonist and should **only** be used in palliative care patients for the reversal of **severe, opioid-induced respiratory depression**. Use of naloxone in patients where it is not indicated, or in larger than recommended doses, can cause a rapid reversal of the physiological effects for pain control, leading to intense pain and distress. Traditional iv doses of naloxone (eg 400 microgram stat) should only be used in immediately life-threatening situations (ie unconscious patient with minimal/no respiratory effort). In other circumstances, careful titration using lower doses of naloxone (see below) should be used to avoid a severe acute withdrawal syndrome and, in those receiving opioids for analgesia, severe pain and hyperalgesia.

Indication:

- Reversal of life-threatening respiratory depression due to opioid analgesics

Caution:

Naloxone is NOT indicated for:

- Opioid induced drowsiness and/or delirium that is not life-threatening
- Patients on opioids who are dying as a natural result of their disease progression
- Symptoms induced by non-opioids eg benzodiazepines

Because buprenorphine has very strong receptor affinity, naloxone in standard doses does not reverse the effects of buprenorphine and higher doses must be used (see specific instructions below).

Dose and Administration

(see flow chart)

Is respiratory rate >8breaths/min?

- If the patient is easily rousable and not cyanosed, adopt a policy of 'wait and see'. Continue to monitor respiratory rate and oxygen saturation. Consider omitting or reducing the next regular opioid dose, and subsequently continuing at a reduced dose.

- If the patient is difficult to rouse and cyanosed, give naloxone (as per instructions below)

Is respiratory rate <8breaths/min?

- Stop regular opioid
- Administer oxygen if hypoxic
- Dilute naloxone 400micrograms (1 ampoule) to 4ml with sodium chloride 0.9% injection in a 10ml syringe
- Administer 1ml (100 microgram) as a slow iv bolus. (If iv route is not available, see instructions below). Flush the cannula with sodium chloride 0.9%.
- Repeat 1ml (100 microgram) doses at 2 minute intervals until the respiratory rate is above 8. Flush the cannula between naloxone doses.
- If iv route is not available, give naloxone 100 micrograms (1ml) i.m. and repeat after 5 minutes if there is no improvement after the first dose. An iv line should be sited as soon as possible.

- Closely monitor respiratory rate and oxygen saturation. The duration of action of opioid may exceed that of naloxone (15-90 minutes) so further doses of naloxone may be needed.

Prolonged or recurrent opioid induced respiratory depression
If more than three bolus doses of naloxone are required, it may be necessary to start a continuous intravenous infusion of naloxone – **seek Specialist Palliative Care advice.**

- Dilute 10 x 400 microgram in 1 ml ampoules to 20ml with 0.9% saline or 5% glucose (this produces a 200 microgram/ml solution)
- Calculate the dose requirement by totalling the naloxone bolus doses which have been needed to maintain satisfactory respiration for 15 minutes or longer
- The hourly rate for the iv infusion should be 60% of the total dose calculated above
- Administer the infusion via a large peripheral vein or central venous catheter
- Adjust the infusion rate to maintain the respiratory rate above 8 (do not titrate to the level of consciousness).
- Continue to monitor the patient closely.
- Continue the infusion until the patient's condition has stabilised.
- Seek and treat the precipitating cause of the opioid toxicity.
- Review regular analgesic prescriptions.

Example:
If a patient has required 6 doses of 100 micrograms of naloxone to maintain their respiratory rate for longer than 15 minutes, the iv infusion should be started at a rate of 360 micrograms/hour (1.8mls/hr).

Reversal of buprenorphine-induced respiratory depression[3]

- Discontinue buprenorphine
- Administer oxygen
- Give iv naloxone 2mg stat over 90 seconds
- Commence naloxone iv infusion at a rate of 4mg/hr
- Continue infusion until the patient's condition is satisfactory (probably <90minutes)
- Monitor the patient frequently for the first 24hours, and restart the infusion if respiratory depression recurs

Rarely, an opioid overdose is complicated by pulmonary oedema, but this may only become clinically apparent once naloxone has improved the respiratory rate. Consider if there is unexpected breathlessness and persistent hypoxia despite oxygen.

References

1. National Patient Safety Alert NHS/PSA/W/2014/016 Risk of distress and death from inappropriate doses of naloxone in patients on long-term opioid/opiate treatment 20 November 2014.
2. NHS medicines Q&As What naloxone dose should be used in adults to urgently reverse the effects of opioids or opiates? UK Medicines Information available through NICE Evidence Search at www.evidence.nhs.uk
3. Twycross R, Wilcock A, Howard P. Palliative Care Formulary (6th Edition) 2016. Palliativedrugs.com Ltd, Nottingham.
4. Lothian Palliative Care Guidelines 2013. www.palliativecareguidelines.scot.nhs /guidelines/medicine-information-sheets/Naloxone
5. Pan Birmingham NHS Cancer Network. Guidelines for the use of naloxone in palliative care in adult patients 2012.

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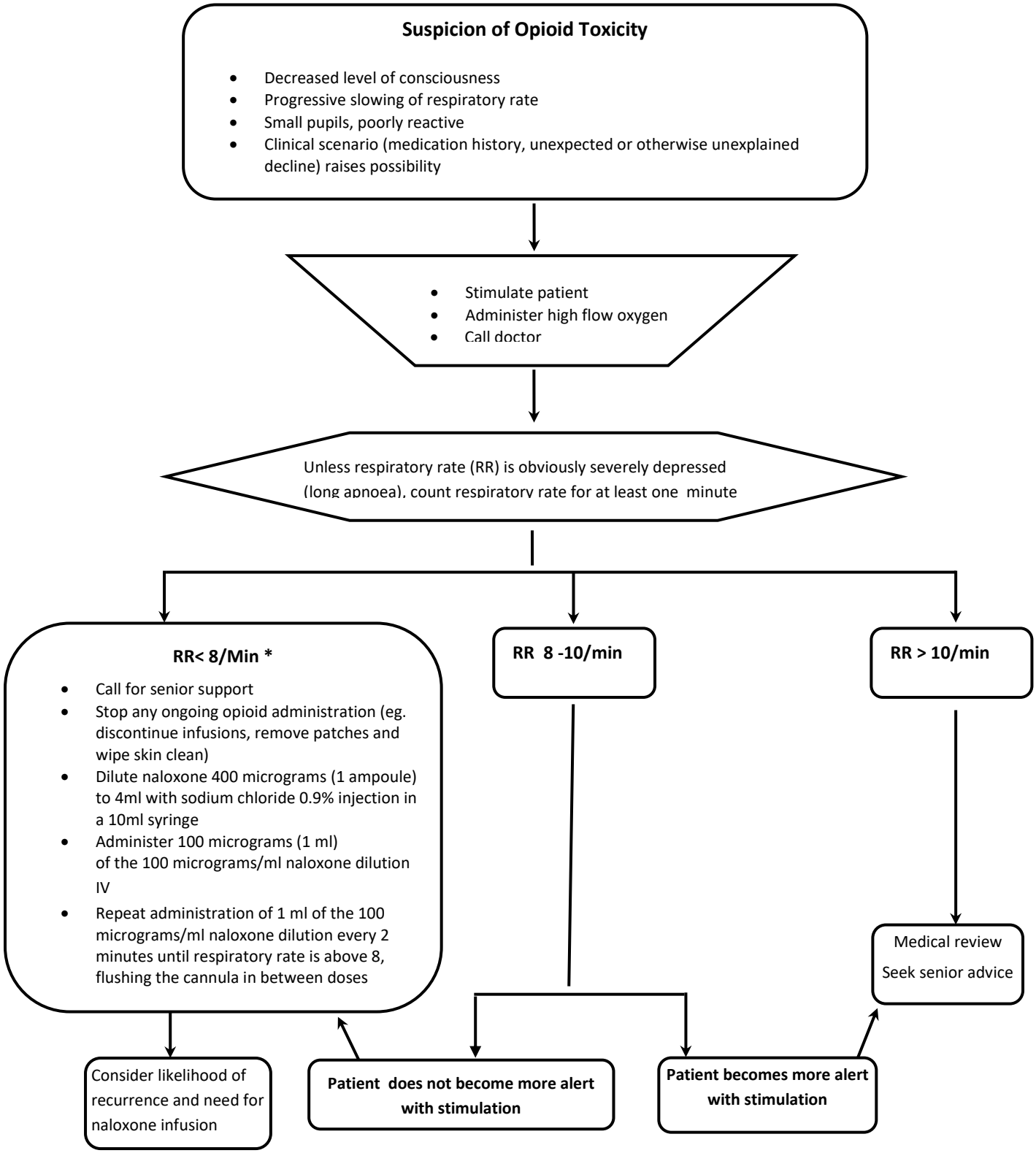
Flowchart for management of Opioid Induced Respiratory Depression in Palliative Care Patients



*Where respiratory depression is caused by buprenorphine, larger doses of naloxone will be needed (see Guideline for the Use of Naloxone in Palliative Care)

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