Drug Guideline  naloxone hydrochloride (Narcan)

Summary:  
Naloxone hydrochloride (Narcan) is a rapid onset opioid antagonist, which reverses the effects of opioid induced respiratory depression and sedation.

Approved by:  ICU Medical Director
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Replaces Existing Drug Guideline:  naloxone (Narcan) 2004

1.  Introduction:

Patient safety

The Aims / Expected Outcome of this drug guideline:

Naloxone hydrochloride will be administered safely and appropriately without any adverse side effects

Related Standards or Legislation

- NSQHS Standard 1 Governance
- National Standard 4 Medication Safety

Related Policies
- LH_PD2013_C03.01 Drug Administration
- LH_PD2010_C03.00 Drug Prescribing
- LH_PD2008_C03.12 Administration of IV Medication

2.  Policy Statement

- All care provided within Liverpool Hospital will be in accordance with infection control, manual handling and minimisation and management of aggression guidelines.
- Medications are to be prescribed and signed by a medical officer/authorised nurse practitioner (NP) unless required during an emergency.
- All drugs administered during an emergency (under the direction of a medical officer/authorised nurse practitioner) are to be documented during the event, then prescribed and signed following the event.
- Medications are to be given at the time prescribed (as close to the time as is possible when multiple drugs require ‘same time’ administration and, when the nurse is caring for more than one patient, recognition is given to a possible short delay to administration – antibiotics and other lifesaving drugs are to be prioritised) and are to be signed by the administering nurse.
• Parenteral medication prescriptions and the drug are to be checked with a second registered or endorsed enrolled nurse prior to administration. The “rights of drug administration” must be followed: right: patient, drug, dose, route, administration, time, reason for the drug, documentation, education and evaluation/outcome.
• Adverse drug reactions are to be documented and reported to a medical officer.
• Medication errors are to be reported using the hospital electronic reporting system: IIMS.
• Guidelines are for adult patients unless otherwise stated

3. Guideline

**Actions**
- Naloxone hydrochloride is a competitive antagonist at opioid receptor sites.
- Naloxone is thought to act as a competitive antagonist at mu, kappa and sigma opioid receptors in the central nervous system (CNS), although the precise mechanism of action has not been fully determined.
- It reverses or prevents the effects of opioids, including respiratory depression, sedation and hypotension.
- It has an onset of action within one to two minutes following IV administration, the duration is variable. Repeat doses of naloxone may be required depending on the amount, type and route of administration of the opioid being antagonised.

**Indications**
- Reversing the effects of opioid excess or overdose.
- It can be used for the diagnosis of suspected acute opioid overdosage.

**Contraindications**
- Known hypersensitivity.

**Precautions**
- In patients with opioid dependence, parenteral administration of naloxone may produce withdrawal symptoms.
- Titration of naloxone is important to avoid acute withdrawal. Sudden or complete reversal can result in medical complications—myocardial infarction in the elderly or patients with coronary artery disease, or an agitated delirium in patients who are opioid-dependent.

**Adverse effects**
- Underlying pain may be exposed, causing severe distress.
- Nausea, vomiting & sweating.
- Tachycardia, hypertension or hypotension.
- Pulmonary oedema, dyspnoea.
- Arrhythmias.
- Rapid reversal of opioid overdose may lead to combative or agitated patient behaviour (acute withdrawal syndrome).

**Presentation**
Naloxone 400 micrograms in 1ml ampoule.

**Administrations Guidelines**

**Opiate Overdose**:
- Dilute 400micrograms nalaxone in 10ml 0.9% sodium chloride to give a **final concentration of 40 micrograms /ml**.
- Administer 40-200microgram naloxone hydrochloride IV bolus every 2-3 minutes up to a maximum of 2mg, until the patient’s breathing and the level of consciousness has improved (if in extremis can use a higher starting bolus such
as 200 micrograms). If IV route is not available, naloxone may be administered as IM injection. Dose is always titrated to individual patients condition and rate of reversal.

Post-operative respiratory/neurological depression\textsuperscript{1,2}:
- Administer 100 -200mcg naloxone IV bolus every 2-3 minutes until the patient is breathing and the level of consciousness has improved. Rapid reversal may unmask pain.

Long acting opioids e.g. Slow Release formulations\textsuperscript{1,2}:
- For long-acting opioids (methadone) or slow-release formulations, a naloxone infusion is usually required after the initial or subsequent bolus. The infusion should be titrated to effect, but the usual hourly infusion rate is half to two-thirds of the total initial effective bolus dose.
- Dilute 800microgram naloxone hydrochloride with sterile 0.9% sodium chloride to a total of 50ml = 800microgram /50ml = final concentration of 16microgram/ml
- Use a syringe driver for accurate delivery.
- Commence at 25microgram/hr (1.5 ml/hr), titrating to clinical effect.

Clinical Considerations
- The duration of action of some opioids exceeds that of naloxone. Patients responding to naloxone should be carefully monitored, to ensure that the opioid effect has been reversed.
- Monitor blood pressure, heart rate, respiratory rate and level of consciousness.
- Pain relief may need to be recommenced carefully.
- Ensure opioid patches are removed prior to administration of naloxone.
- Cessation of naloxone infusion should be based on clinical effects, with a gradual reduction in dose.

4. Performance Measures
All incidents are documented using the hospital electronic reporting system: IIMS and managed appropriately by the NUM and staff as directed.

5. References / Links

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