The Newcastle upon Tyne Hospitals NHS Foundation Trust

Neostigmine for the management of pseudo-obstruction - in critical care

1 Introduction

For patients with acute pseudo-obstruction, including paralytic ileus and post-operative ileus. The absence of physical obstructive cause must first be confirmed.

2 Guideline scope

This guideline pertains to the management of pseudo-obstruction in critically unwell patients throughout the trust. It is intended to be used by members of the critical care multidisciplinary team including doctors, nurses and pharmacists.

3 Main Body of the guideline

3.1 Dose

Continuous intravenous infusion for up to 24 hours, at a rate 0.2mg/hour, increased to 0.4mg/hour if necessary. One study has used up to 0.8mg/hours.

3.2 Administration

5mg of neostigmine in 50ml sodium chloride 0.9%. Administer peripherally or centrally.

Some atropine or glycopyrrolate should be on hand in case of incidents of bradycardia.

3.3 Pharmacology

Neostigmine is a synthetic reversible anti-cholinesterase. It reduces the breakdown of acetylcholine at muscarinic receptors, causing an increase in parasympathetic activity in the gut wall which is believed to stimulate colonic activity.

3.4 Pharmacokinetics

Onset of action: 1 minute

Peak effect: 20 minutes

Duration of action: 1-2 hours

Excretion: 50- 80% renal

Elimination half life: 15 – 113 minutes, average 52 minutes

3.5 Contraindications

- Hypersensitivity
- Intestinal or urinary obstruction

- Bowel anastomosis
- Peritonitis

3.6 Cautions

- Asthma
- Bradycardia, arrhythmias, hypotension, recent MI
- Epilepsy
- Peptic ulceration
- Parkinsonism
- Hyperthyroidism
- Recent coronary occlusion
- Vagotonia
- Pregnancy & breast feeding

3.7 Side Effects

- Perforation of colon
- Nausea, vomiting, diarrhoea
- Increased salivation
- Abdominal cramps
- Bronchoconstriction, increase bronchial secretion (may be a sign of over dosage)
- Bradycardia, heart block, arrhythmias and hypotension (may be sign of over dosage)
- Miosis, increased lacrimation
- Hyperhydrosis
- Urinary incontinence
- Cholinergic Syndrome
- Muscle Spasms
- Excessive Dreaming
- Weakness eventually leading to fasciculation and paralysis

4 Training, Implementation, Resource Implications

This guideline largely reflects current practice across the four adult critical care units in the trust.

5 Monitoring section

This guideline will act as the standard against which prescriptions for neostigmine for pseudo-obstruction can be checked.

6 References

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Written by: Nicola Rudall, Senior Lead Clinical Pharmacist, Peri-operative & Critical Care.
Updated by: Rebekah Eadie, Senior Critical Care Pharmacist & Gillian Mulherron, Lead Clinical Pharmacist for Peri-operative & Critical Care.

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