

# FENTANYL

## DESCRIPTION AND INDICATION FOR USE

Fentanyl is a synthetic opioid analgesic with a faster onset and shorter duration of action compared with morphine. Fentanyl is approximately 80 times more potent than morphine and rarely causes histamine release; therefore haemodynamic side effects are less common. Fentanyl is used in the Special Care Nursery for analgesia and sedation of short duration prior to elective intubation.

## DOSE

**IV:** 2 – 5 microgram/kg/dose

## RECONSTITUTION/DILUTION

**Ampoule = 100 microgram in 2 mL (50 microgram/mL)** (NB: STORED IN DD SAFE IN 5 SOUTH)

### IV:

1. Withdraw 0.2 mL (10 microgram) of 50 microgram/mL solution
2. Add to 0.8 mL of 0.9% sodium chloride in a second 1 mL syringe (concentration = **10 microgram/mL**)
3. Discard excess volume to obtain ordered dose OR withdraw dose required using another 1 mL syringe

**May be given via IM route (same dose) but only if no intravenous access available. NOT for SC use**

## ROUTE AND METHOD OF ADMINISTRATION

**IV:** Administer dose SLOWLY over at least 30 seconds the flush SLOWLY with 0.9% sodium chloride

## COMPATIBILITY INFORMATION

*Please contact your ward pharmacist for information on drugs or fluids not appearing in the table below. Medications that are not routinely used in the Special Care Nursery have not been included in this table and may be incompatible.*

	Compatible	Incompatible
<b>Fluids</b>	Dextrose 5%, Dextrose 10%, Sodium Chloride 0.9%	
<b>Drugs</b>	Adrenaline, Atropine, Heparin, Metronidazole, Midazolam, Morphine	Phenytoin

## SIDE EFFECTS

- Bradycardia, hypotension, seizures, apnoea, respiratory depression and chest wall rigidity with *rapid* infusion
- Muscle rigidity (may be associated with chest wall rigidity and/or apnoea, laryngospasm or bronchospasm)

NB: when used with other agents in the pre-intubation regimen, fentanyl side effects such as bradycardia and chest wall rigidity are lessened

## SPECIAL PRECAUTIONS

- Non-ventilated patients
- Use with caution in hypotensive patients, particularly if hypovolaemic
- Use with caution in patients with poor renal and/or hepatic function

(Special Care Nursery – Ballarat Health Services – MAY 2010)

Adapted from RWH, Neonatal Intensive & Special Care Nurseries –IV Drug Protocol FENTANYL.doc  
& Southern Health – Newborn Services – IV Drug Protocol FENTANYL – IV PUSH and ELECTIVE INTUBATION OF INFANTS.docs

## DRUG INTERACTIONS

*Central Nervous System Depressants (eg: morphine, midazolam, diazepam, phenobarbitone):*

Enhanced effects of both medications and additive risk of side effects eg: respiratory depression

## NURSING RESPONSIBILITIES

- Observations/Monitoring:
  - Continuous cardio-respiratory monitoring
  - Monitor blood pressure
  - Transcutaneous O<sub>2</sub>/CO<sub>2</sub> or oximetry if indicated and requested by Paediatrician/Paediatric Registrar
- Intubation and ventilation equipment must be prepared at the bedside prior to administering fentanyl
- Protect from light during storage
- **Naloxone** is an opioid antagonist and may be used to rapidly reverse fentanyl toxicity  
Dose: **100 microgram/kg IV stat**

## PHARMACOKINETIC PARAMETERS FOLLOWING SINGLE DOSE ADMINISTRATION

	Intravenous	Intramuscular
○ Peak analgesic effect:	1 – 2 minutes	7 – 15 minutes
○ Duration of action*	30 – 60 minutes	1 – 2 hours

\* May be prolonged in premature infants

## ELECTIVE INTUBATION MEDICATION SEQUENCE

Refer to DOSAGE & DILUTION DIRECTIONS FOR NEONATAL ENDOTRACHEAL TUBE INTUBATION MEDICATIONS document.

## REFERENCES

1. Kumar P, Denson SE, Mancuso TJ. Clinical Report Premedication for Nonemergency Endotracheal Intubation in the Neonate. *Pediatrics*. 2010;125:608-615

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