GUIDELINE FOR ADMINISTRATION OF FENTANYL FOR PAIN RELIEF IN LABOUR

INTRODUCTION

Intravenous (IV) Fentanyl is a good option for pain management during labour and should be administered in a safe and competent manner. IV Fentanyl administration is a shared competency and may be administered by a physician or a registered nurse certified in this procedure. Appropriate education and inservicing regarding the administration of Fentanyl is a facility-specific responsibility.

> Intravenous Fentanyl may only be administered by an RN who has current Cardio-Pulmonary Resuscitation and Neonatal Resuscitation certificates.
>
> Women requiring IV Fentanyl during active labour, as defined by cervical change and contraction pattern, must have a vaginal examination performed and the results documented 30 minutes or less before administration of the drug.
>
> A physician's order is required before the administration of Intravenous Fentanyl.

This is a clinical guideline only. All policies must be approved by the appropriate processes within each facility (i.e.: Maternal/Child or Perinatal Committee, Medical Advisory Committee etc.)

PRECAUTIONS

Preterm labour
Obese women (BMI > 45)
Patients who have recently received other opioids, such as meperidine (Demerol). Lower Fentanyl doses may be required.
Delivery anticipated within ½ hour.
Parturient women on high doses of antipsychotics (e.g. haldol, respiradol or seroquil)
Cross-reactions may also occur in patients with a previous allergy or hypersensitivity reaction to other narcotics; Caution is advised.

CONTRAINIDICATIONS

Hypersensitivity to Fentanyl.
Not recommended with concurrent use of monoamine oxidase inhibitors (MAOI) or MAOI use within the last two weeks
Fetal Acidosis/Non-reassuring Fetal Heart Tracing
Maternal respiratory rate less than 8 breaths per minute or with an oxygen saturation of less than 94%. Women at risk for respiratory complications may be those with COPD, asthma, CF etc.
Liver or kidney disease

GUIDELINES FOR THE USE OF INTRAVENOUS FENTANYL

CONSENT

As with all narcotics, the patient must be fully educated about potential maternal and neonatal side effects of IV Fentanyl, its onset and peak times, its effect on the progression of labour and the potential effects of narcotics on the establishment of breastfeeding. Informed (verbal) consent must be obtained and documented.

ADMINISTRATION

IV direct **administered slowly over 1-2 minutes.**

Although Fentanyl has been administered by subcutaneous or intramuscular routes, **it is recommended that Fentanyl be given by direct IV only** as it has a short half-life and multiple doses may be required.

It is recommended that Fentanyl NOT be administered by continuous infusion as this method requires more medication, has more side effects and is no more effective than intermittent direct IV administration.

All women receiving fentanyl will require close monitoring of respiratory rate and continuous oxygen saturation monitoring.

Neither initial nor subsequent doses should be administered to women who have a respiratory rate of less than 8 breaths per minute or an Oxygen saturation of less than 94%.

Facilities should consider offering Patient Controlled Analgesia (PCA) administered Fentanyl. There are special PCA pumps that are required. This type of administration would allow for further individualization of pain control for patients.

Dilution instructions:
100 micrograms (2 mL of 50 micrograms/mL solution) into 8 mL of normal saline to obtain 10 mL of fluid, which results in a final concentration of 10 micrograms/mL.

DOSAGE

Initial dose: **0.5-1 microgram/kg** given IV direct over 1-2 minutes.
Maximum initial dose should not exceed 100 micrograms even if the patient's weight exceeds 100 kg.
Wait 5 - 10 minutes for effect.
If further doses are needed, give 0.5-1.0 micrograms/kg q 5-10 min until adequate analgesia or maximum doses are reached.
Further doses of 0.5 micrograms/kg may be administered Q 30 minutes as required.
Maximum hourly dose: 2 micrograms/kg

If adequate pain relief is not achieved and further pharmacologic measures are indicated and delivery is not imminent, anesthesia should be consulted to discuss other pharmacological labour analgesia options with the patient.

MONITORING

RESPIRATORY RATE SHOULD BE MONITORED PRIOR TO AND FOLLOWING EVERY DOSE – **All women receiving IV Fentanyl should have their O2 Saturation CONTINUOUSLY monitored.**
Subsequent doses should only be administered if the patient's pain is not adequately controlled. Narcotics administered during active labour will never completely remove pain. If the patient is pain free, they would also be obtunded.
Onset of action after IV administration of Fentanyl is 3-5 minutes; duration of action is 30-60 minutes. Women should be observed closely for signs of adverse reaction and possible respiratory distress. Naloxone should be close at hand for emergency administration.
Oxygen saturations and respirations should be continuously monitored 30-45 minutes after the last dose of Fentanyl.

NURSING ACTIONS

Ensure there are no contraindication/allergies to IV Fentanyl.
Review medication reference information necessary to administer IV Fentanyl safely, including its action, purpose, side effects, normal dose, peak onset time, medication administration time and nursing implications
Explain to the woman the limitations of Fentanyl and the possible maternal and neonatal side effects. Obtain (verbal) consent and document in the patient's chart.
Perform a vaginal examination within 30 minutes of administration to assess the progress of labour and conduct fetal health surveillance according to facility policy.
Ensure Naloxone is readily available in the labour and delivery room.
Administer Fentanyl slowly into the line over a minimum of 1-2 minutes
Document administration of Fentanyl in the patient's chart.
Observe closely for signs of adverse reactions and possible respiratory distress.
Note location of naloxone in case emergency administration is required.

MANAGEMENT OF ADVERSE REACTIONS

The RN should always be prepared to respond immediately and appropriately to an allergic or adverse reaction following the administration of intravenous Fentanyl.

Possible adverse reactions related to IV Fentanyl administration include, allergic/hypersensitivity reaction, air embolism, anaphylactic shock and respiratory depression (maternal and neonatal).

In the event of an adverse reaction the nurse should:

- Immediately stop the injection.
- Administer oxygen, assess oxygen saturations and initiate cardio-pulmonary resuscitation if required.
- **CALL FOR HELP – ALERT THE PHYSICIAN/ANAESTHETIST.**
- Prepare to administer Naloxone as described below in the event of respiratory depression.
- **DOCUMENT** accurately the reaction in the patient nursing notes.
- Ensure the woman and her family are notified of the reaction and implications for future use of the drug are discussed.

Naloxone (Narcan™)

Since Fentanyl is a potent, short-acting opiod that may depress maternal and neonatal respiration, Naloxone (Narcan™), should be readily available for administration to the mother or neonate.

Naloxone - Dose and administration:

Adults: IV direct give doses of 0.4mg initially up to a total of 2mg given over at least one minute

Do not hesitate to use larger doses of naloxone if the patient is obtunded (i.e.: up to 2mg)

If repeated doses are required an intravenous infusion should be considered and oxygen saturation should be closely monitored.

Neonate: 0.1 mg/kg/dose IV//IM/Sub Q

Dilution instructions: Dilute 0.4 mg = 1 mL in 9 mL NaCl 0.9% solution

Final concentration: 0.4 mg/10 mL

Patient Monitoring after IV Naloxone Administration:

Titrate dose until respiratory rate is greater than 8. Consult Anaesthesia.
Naloxone onset of action is within 1-2 minutes and duration of action is 45 minutes.

As the duration of action of naloxone is shorter than that of Fentanyl, neonates who receive naloxone **must** be observed for a **minimum of TWO hours** post-administration for signs of respiratory depression.

Naloxone should NOT be given to infants prophylactically when their mother has been administered Fentanyl, but should be reserved for infants who are depressed following delivery and who require stimulation/resuscitation.

Neonates who **DO NOT** require naloxone at birth, but whose mothers receive Fentanyl within four hours of delivery, **must** be observed for at **least TWO hours** post delivery in labour and delivery.

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