

<b>Title:</b>	<b>Administration of Remifentanil Patient Controlled Analgesia in Labour</b>		
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12/02/2007	0.1	Dr. D. McAtamney	Initial protocol
08/06/2010	0.2	Dr. D. McAtamney	Revised protocol
08/06/2010	0.2	Dr. D. McAtamney	Circulated amongst all key stakeholders, Excellence and Clinical Governance Committee and Supervisors of Midwives
31/08/2010	0.3	Dr. D. McAtamney	All comments received and all relevant comments included in the protocol
6/09/2010	0.4	Dr. D. McAtamney	Policy reviewed and minor changes included by Dr. E. Koutsoumpi
12/10/2010	0.5	Dr. D. McAtamney	Further changes incorporated
18/04/2011	0.6	Dr. D. McAtamney	Further changes made by Dr. McAtamney
30/10/2012	0.6	Dr. D. McAtamney	Reviewed by Dr. McAtamney no changes to content
15/04/2015	1.1	Dr. D. McAtamney	Policy reviewed and minor changes included by Dr. C.J.Montgomery
16/12/2016	1.2	Dr. D. McAtamney	Policy reviewed and changes included by Dr. C. White and Dr. A. White

## **1.0 INTRODUCTION / PURPOSE OF POLICY**

### **1.1 Background**

Remifentanyl is a short acting opioid that is continuously and rapidly metabolized in the blood. The drug therefore provides intense and short acting pain relief. It has been identified as safe and effective analgesia for labour.

Remifentanyl can be administered as Patient Controlled Analgesia (PCA) and can be offered as another choice of analgesia for labour.

### **1.2 Purpose**

This document outlines guidance on the circumstances and procedures to be followed when Remifentanyl PCA is chosen as a method of pain relief in labour.

### **1.3 Objectives**

- To explain indications, contraindications and side effects of the technique
- To define standards of monitoring required
- To educate and support staff involved
- To outline actions to be taken in the event of a Remifentanyl associated complication

## **2.0 SCOPE OF THE POLICY**

All Anaesthetists, Obstetricians and Midwifery staff involved in the care of women in labour.

## **3.0 ROLES / RESPONSIBILITIES**

All staff involved in caring for women who use Remifentanyl PCA during labour must adhere to this policy.

## **4.0 KEY POLICY PRINCIPLES**

Remifentanyl PCA may provide effective analgesia for mothers who choose not to have an epidural, or in whom epidural analgesia may be contraindicated or unachievable.

#### **4.1 Criteria for use**

- The mother must be more than 37 weeks gestation and in established labour \*
- Mothers may have Remifentanil PCA, even if they have received IM/SC diamorphine, as long as 4 hours has elapsed since administration and provided they are responsive to command on the AVPU scale \*
- Remifentanil is currently not licensed for use via PCA and therefore it must be prescribed by an Anaesthetist. Women must be informed of this and verbally agree to its' use
- The mother must be monitored continuously while the Remifentanil PCA is being used. In particular, SpO<sub>2</sub> monitoring must be established prior to starting the PCA and maintained continuously while Remifentanil PCA is in situ
- A Remifentanil observation chart must be completed while the PCA is being used
- The mother must receive continuous one to one midwifery care and should not be left unattended
- Entonox and/or TENS may be used in addition to the Remifentanil PCA
- Remifentanil PCA can be used during delivery and for the repair of tears or episiotomies

\* This is a clinical decision made on a case by case basis by the attending Midwife  
and Anaesthetist

#### **4.2 Relative contraindications**

- Allergy to opioid drug
- Severe pre-eclampsia – an epidural may be more appropriate provided contraindications have been excluded
- Multiple pregnancy
- Severe IUGR
- Abnormal CTG
- Excessively high or low BMI
- Patients with significant medical co-morbidities

Please note that each case may be discussed on an individual basis with the duty Anaesthetist.

### **4.3 Side effects**

#### **Common**

- Dizziness
- Sedation
- Itch
- Nausea
- Mild memory impairment during use
- Shivering on cessation
- Respiratory depression

#### **Uncommon**

- Apnoeas without hypoxia – for this reason the continuous presence of a midwife in the room is mandatory

#### **Rare**

- Cardiorespiratory arrest

### **4.4 Patient preparation**

- The patient should be issued with and have read the Remifentanil PCA information card (Appendix 1) and be given the opportunity to ask questions
- The patient must be made aware that Remifentanil is not licensed for use in pregnancy
- The patient must be informed regarding the Remifentanil PCA and (verbal) consent must be obtained. The information will be given via discussion with staff in labour ward (Midwife/Obstetrician/Anaesthetist).
- The patient must be shown how to use the PCA. In particular she should be told to press the button when she first feels the contraction. She must be informed that she is the only one allowed to press the button
- The patient should also be informed of the possible side effects and possible need for supplemental oxygen
- A dedicated intravenous cannula should be sited, ideally in the dorsum of the hand or forearm

### **4.5 Remifentanil PCA preparation**

#### **4.5.1 Equipment required**

- 2x2mg vials Remifentanil (checked by 2 registered midwives and documentation completed in controlled drug register)
- 100 ml bag sodium chloride 0.9%
- Drug additive label

- Smiths Medical Patient Controlled Pump – this is a dedicated Remifentanil PCA pump pre-programmed to deliver a 40 microgram Remifentanil bolus with a 2 minute lock-out period
- Dedicated CADD High Volume Administration Set with a stop flow valve
- Remifentanil initiation sheet and observation chart

#### **4.5.2 Preparing the Remifentanil solution**

- The Remifentanil solution used is 40 micrograms/ml
- Withdraw 4 ml from the 100 ml bag of 0.9% sodium chloride and use to dissolve the 2 x 2 mg vials of Remifentanil
- Return the 4 ml (containing 4 mg reconstituted Remifentanil) to the bag of 0.9% sodium chloride to give 4 mg Remifentanil in 100 ml 0.9% sodium chloride
- Label the bag. Remifentanil is stable at room temperature for 24 hours
- Attach the bag to the CADD High Volume Administration Set
- Connect the bag and administration set to the Smiths PCA pump

#### **4.6 Starting the Remifentanil PCA**

- It is the responsibility of the Anaesthetist to ensure that the Smiths PCA pump is correctly set, the giving set is primed and that the casing to the pump is locked
- The PCA is connected to the dedicated cannulae by the anaesthetist
- The anaesthetist must complete the Remifentanil PCA Initiation Sheet (Appendix 2), use 24hr clock for recording times, and prescribe the PCA, PRN oxygen, anti-emetic and a rescue dose of naloxone on the medicine kardex
- The Anaesthetist must stay in the room for the initial use of the PCA; this allows an assessment of the patient's response

#### **4.7 Observations (Appendix 2)**

- Continuous oxygen saturation monitoring throughout (Baseline value obtained before start of PCA)
- Respiratory rate, oxygen saturation, pain and sedation score should be recorded every 30 minutes on the Remifentanil PCA observation sheet in addition to standard intra-partum observations. These are recorded prior to starting the PCA
- CTG monitoring is not required unless otherwise indicated

## 4.8 Safety points

- The patient should never be left unattended
- Always use a dedicated intravenous cannula (NO other drugs via the PCA cannula and NO use of a Y connector)
- Always flush the cannula after the PCA is disconnected with 5 ml sodium chloride 0.9%
- Only the mother in labour can use the PCA button (NOT the midwife or relatives)
- Equipment required to administer high flow oxygen must be in the room
- A vial of naloxone 400 micrograms must be in the room
- Resuscitation equipment must be readily available
- Remifentanil is a controlled drug and must be disposed in line with CD Policy. The remaining volume PCA should be recorded and signed by two Midwives in the CD Register

### **Call the Anaesthetist: (Call Obstetric staff if Anaesthetist not immediately available):**

- Respiratory rate < 8 breaths/min or SpO<sub>2</sub> < 92%
- Not Responsive to verbal stimulus (sedation score 4 or 5)
- Any concerns regarding patient's observations
- Any concerns regarding the Remifentanil PCA equipment

## 5.0 IMPLEMENTATION OF POLICY

### 5.1 Dissemination

Following ratification by the Standards and Guidelines Committee and approval by the Policy Committee this guideline will be published on the Belfast Trust Intranet Site and staff will be informed. The policy and guidelines section is regularly accessed by staff

## 6.0 MONITORING

This guideline contains the current evidenced based thinking on this topic, however data and statistics are routinely collected and correlated and should the need arise the guideline will be updated.

## 7.0 EVIDENCE BASE / REFERENCES

Remifentanil PCA in labour is a recognised method of pain relief in Delivery Suite and used in other maternity hospitals/departments although the drug is not licensed for use in maternity

1. Volikas I et al Maternal and neonatal side-effects of Remifentanil patient controlled analgesia in labour. *British Journal of Anaesthesia* 2005; **95(4)**: 504-509.

2. Blair J et al Patient controlled analgesia for labour: a comparison of Remifentanyl with Pethidine. *Anaesthesia* 2005; **60**: 22-27.
3. Guidelines issued by the OAA (Obstetric anaesthetists Association) [www.oaanaes.ac.uk](http://www.oaanaes.ac.uk)

## 8.0 CONSULTATION PROCESS

This policy will be widely circulated amongst Excellence and Clinical Governance, Supervisors of Midwives and all key workers.

## 9.0 APPENDICES / ATTACHMENTS

Appendix 1 - Remifentanyl PCA for Labour Pain Relief – Patient Information Card

Appendix 2 - Observation chart

## 10.0 EQUALITY STATEMENT

In line with duties under the equality legislation (Section 75 of the Northern Ireland Act 1998), Targeting Social Need Initiative, Disability discrimination and the Human Rights Act 1998, an initial screening exercise to ascertain if this policy should be subject to a full impact assessment has been carried out. The outcome of the Equality screening for this policy is:

Major impact

Minor impact

No impact.

## SIGNATORIES

(Policy – Guidance should be signed off by the author of the policy and the identified responsible director).



\_\_\_\_\_  
Author

Date: \_\_\_\_ October 2017 \_\_\_\_



\_\_\_\_\_  
Director

Date: \_\_\_\_ October 2017 \_\_\_\_

## **APPENDIX 1**

### **Remifentanil PCA for Labour Pain Relief**

#### **What is Remifentanil PCA?**

Remifentanil is a strong morphine-like painkiller which provides very effective pain relief during labour and is one of the options which you can discuss with your midwife. It is fast acting, has a short period of action and is broken down by the body very quickly again. This makes it a very suitable medication to reduce the pain during contractions in labour.

#### **When can I ask for Remifentanil PCA?**

If you decide on Remifentanil PCA it can be requested any time after you have been allocated a dedicated midwife and a room in delivery suite and you are in established labour.

#### **How is Remifentanil PCA given?**

In order to use Remifentanil you will need to have a small IV Cannula inserted into a vein usually in the back of your hand or arm. This is then connected to a pump which is controlled using a hand-held button. When you feel that a contraction is about to start, you press the button which causes the pump to deliver a small set dose of the Remifentanil and starts to have an effect almost immediately.

#### **Routine observations while using Remifentanil PCA**

Remifentanil PCA is only offered to labouring women that are on delivery suite. As part of our routine observations you will have:

- Continuous measuring of the oxygen levels in your blood using a sensor on your finger
- Regular assessment of your level of sedation/drowsiness
- Regular assessment of your level of pain
- A dedicated midwife who will be in the room with you at all times

#### Advantages of using Remifentanyl

- You are in control of your pain relief
- Relatively quick to set up and start. It requires an IV Cannula to be inserted and it starts to have an effect with the first press of the button.
- You can continue to use Remifentanyl right up to delivery and even afterwards for pain relief should you need stitches.
- Once stopped, the drug is broken down very quickly and is safe for use in women who plan to breast feed their new-born baby.
- You may use Entonox (Gas and Air) at any stage while using Remifentanyl PCA.

#### Unwanted side effects of Remifentanyl

- Slowed rate of breathing +/- Low levels of Oxygen in the blood +/- Need for extra oxygen
- Drowsiness, dizziness, nausea, vomiting and itch
- Effects on your memory of labour
- It is crucial that **only** you press the button when you require a dose of Remifentanyl

#### Will using Remifentanyl PCA have any effect on my baby?

- Remifentanyl has been used safely for labour pain relief in Northern Ireland for many years.
- Like a lot of drugs it remains unlicensed for use in pregnancy.
- A small amount of the drug is passed through to the baby. Meaning babies may be slow to breathe at first.
- There are no additional effects on the baby that are not already encountered with other morphine like painkillers used for labour pain relief i.e. Diamorphine, Pethidine and Codeine.

#### Further Information and Questions

If you would like any further information or have any questions regarding Remifentanyl PCA for pain relief in labour, please ask your midwife. Your midwife and our anaesthetic doctors will be very happy to address any questions you may have or discuss Remifentanyl PCA or any of our other pain relief options with you.

## APPENDIX 2

### RJMS Remifentanyl PCA for Labour Analgesia Initiation Sheet

Name: \_\_\_\_\_ Mallampatti \_\_\_\_\_  
DOB: \_\_\_\_\_ Mouth Opening \_\_\_\_\_  
Hospital No: \_\_\_\_\_ Neck Movement \_\_\_\_\_  
(Or Affix Addressograph) TM Movement \_\_\_\_\_

4mg Remifentanyl (2 x 2mg Vials) reconstituted in 100mls N.Saline given as 40micrograms/ml in 1ml  
Bolus + 2min lockout

#### EXCLUSIONS:

- Parturient <37weeks or a Multiple Pregnancy
- History of adverse reactions to opioids or OSA
- PET or severe IUGR
- Abnormal CTG
- Diamorphine administered <4hrs ago

#### CONSENT / TOPICS DISCUSSED WITH THE PATIENT:

- Remains an unlicensed drug for use in pregnancy
- Reduced respiratory rate +/- Desaturations +/- Need for supplemental oxygen
- Drowsiness, dizziness, nausea, vomiting and itch
- Amnesia and effects on memory of labour
- Only patient to press PCA button

#### SAFETY FEATURES:

- Dedicated IV line (20G Pink or 22G Blue)
- Continuous pulse oximetry attached before commencing Remifentanyl
- Remifentanyl observation chart commenced before starting Remifentanyl
- Remifentanyl, Naloxone and supplemental oxygen 2L/min NS PRN prescribed on kardex

Date + Time Remifentanyl Commenced \_\_\_\_\_

Anaesthetist's Name \_\_\_\_\_ Grade \_\_\_\_\_ Signature \_\_\_\_\_

Date + Time Remifentanyl Stopped \_\_\_\_\_

IV Cannula Flushed with 5mls N.Saline after stopping + Disconnecting Remifentanyl

Person flushing line \_\_\_\_\_ Grade \_\_\_\_\_ Signature \_\_\_\_\_

PATIENT LABEL

# REMIFENTANIL PCA OBSERVATION CHART

<b>Maternal Observations</b>	Baseline observations must be recorded prior to commencing Remifentanil PCA Observations must be recorded every 30 minutes while Remifentanil PCA in situ																			
<b>Time</b>																				
<b>Respiratory Rate</b>																				
<b>Oxygen saturation (SpO<sub>2</sub>)</b>																				
<b>Sedation Score</b>																				
<b>Pain Score</b>																				

Total volume of Remifentanil 40 microgram/ml given \_\_\_\_\_ ml    Volume discarded \_\_\_\_\_ ml    Signature 1:

Signature 2:

<p>If respiratory rate &lt; 8/min or SpO<sub>2</sub> &lt; 96% give oxygen</p> <p>If patient unrousable (sedation score = 5)</p> <ul style="list-style-type: none"> <li>- give OXYGEN</li> <li>- give NALOXONE 400 micrograms IV</li> <li>- remove the PCA handset</li> <li>- call the Anaesthetist</li> </ul>	<p><b>Sedation Score</b></p> <ol style="list-style-type: none"> <li>1 Fully awake</li> <li>2 Drowsy</li> <li>3 Eyes closed but rousable by voice</li> <li>4 Eyes closed but rousable by physical stimulus</li> <li>5 Eyes closed and not rousable</li> </ol>	<p><b>Pain Score</b></p> <ol style="list-style-type: none"> <li>0 No pain</li> <li>1 Mild pain</li> <li>2 Fair pain</li> <li>3 Moderate pain</li> <li>4 Severe pain</li> <li>5 Extreme pain</li> </ol>
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**Patient must receive continuous one-to-one midwifery care and must not be left unattended  
NO additional opioids without asking anaesthetist**