

PATIENT CONTROLLED ANALGESIA (PCA) REMIFENTANIL – IN LABOUR

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- To provide alternative pain relief in labour where an epidural is unsuitable.

2. PATIENT

- Pregnant woman in labour in whom an epidural is contraindicated, unachievable or unwanted

3. STAFF

- Acute Pain Service (APS):
 - Anaesthetic medical officers(MO)
 - Clinical Nurse Consultant (CNC)
- Medical, midwifery and nursing staff
- Pharmacists

4. EQUIPMENT

- Intravenous (IV) cannula
- Infusion pump (dedicated PCA)
- PCA administration set
- PCA lockbox
- PCA key
- Nasal prongs/masks
- Wall oxygen
- Adult pulse oximetry
- Cardiotocograph (CTG) machine
- Sphygmomanometer

5. CLINICAL PRACTICE

PCA Prescription

- Prescribe PCA, by anaesthetic MO, on the NSW Health Patient Controlled Analgesia (PCA) Adult chart (NH606622)

PCA Administration and Management

- Ensure woman is an appropriate candidate for remifentanil PCA and contact APRS if clarification is needed. Contact details for APRS are as follows:
 - CNC pager 44937 Tuesday – Thursday 0800-1700 hours
 - Anaesthetic MO pager 45253/4 Monday – Friday 0800-1700 hours
 - Anaesthetic MO pager 44084 'after hours'
- Ensure 1:1 midwifery care while woman is receiving a remifentanil PCA. A midwife must remain in the room at all times whilst a woman is receiving PCA remifentanil
- Advise Access and Demand Manager (ADM) or After Hours Nurse Manager (AHNM) to ensure adequate staffing levels on Delivery Suite
- Educate woman about remifentanil pain management via discussion with anaesthetic MO, and providing information leaflet. (Appendix 1)
- Seek verbal consent from woman by anaesthetic MO, as remifentanil is prescribed off licence
- Ensure the woman is familiar with the principles of PCA and is able to activate the pump. The woman receiving PCA is the only person who may press the PCA

**PATIENT CONTROLLED ANALGESIA (PCA) REMIFENTANIL – IN LABOUR
cont'd**

- Check the medication and pump settings, by two health professionals, before connecting the PCA to the woman
- Administer oxygen therapy via a mask/nasal prongs for the duration of the PCA therapy
- Check the PCA pump settings at the commencement of each shift, on transfer of woman to another ward, or when the medication bag is changed.
- Ensure naloxone is prescribed by anaesthetic MO on the PCA chart and ensure naloxone is available. Indications and administration guidelines are on the PCA chart
- Do NOT administer other opioids or sedatives unless ordered by an anaesthetic MO.
- Administer nitrous oxide (max dose: 50:50) if desired, in addition to PCA, after review with an anaesthetic MO.
- Notify the neonatal team for attendance at birth

PCA Program and Dosing

STANDARD REMIFENTANIL CONCENTRATIONS AND PCA BOLUS DOSES

DRUG & PRESCRIPTION	CONCENTRATION	PCA BOLUS DOSE	DURATION OF BOLUS DELIVERY	LOCK OUT PERIOD
Remifentanil 2mg (2000mcg) in 100mL of sodium chloride 0.9%.	20mcg/mL	20mcg = 1mL	15 Seconds	2 Minutes
IF ADDITIONAL PAIN RELIEF IS REQUIRED THE BOLUS DOSE MAY BE INCREASED AFTER REVIEW BY AN ANAESTHETIST MEDICAL OFFICER				
Remifentanil 2mg (2000mcg) in 100mL of sodium chloride 0.9%.	20mcg/mL	30mcg = 1.5mL	15 Seconds	2 Minutes
Remifentanil 2mg (2000mcg) in 100mL of sodium chloride 0.9%.	20mcg/mL	40mcg = 2mL	15 Seconds	2 Minutes

PCA solution preparation

- Prepare solution, pump setup, programming and connection to the woman under the supervision of the anaesthetic MO
- Check the medication with two health professionals and document on the PCA chart.
- Re-check the prescription by the same two health professionals and complete additive label attaching it to the infusion bag
- Label the infusion line
- Place PCA infusion bag in the lock box prior to connecting to the woman

PCA Pump set up and programming

- Deliver remifentanil PCA through a dedicated PCA pump with a lock box and a unique use IV line.
- Ensure programming and set up is performed by an anaesthetic MO or a midwife who has been instructed in care of a woman with remifentanil PCA

LOCAL OPERATING PROCEDURE - CLINICAL

Approved Safety & Quality Committee May 2021
Review May 2023

PATIENT CONTROLLED ANALGESIA (PCA) REMIFENTANIL – IN LABOUR cont'd

- Connect maintenance fluids at 60mL per hour to the back check valve of the PCA administration set.
- Switch pump on.
- Instruct the woman to initiate a dose as soon as the contraction starts to maximize the effect.
- Ensure key is in-situ in order to open the lock box and start infusion pump
- Press 'yes' to start a new infusion
- Select therapy (IV PCA - Delivery Suite)
- Select qualifier (Bolus Only) by scrolling to the option and pressing the select button.
- Select prime tubing.
- Lock infusion pump and lock box
- Connect the PCA line directly to the IV cannula. DO NOT use a 3-way tap.
- Press start and hand woman the button.
- Re-open and close the cover any time the pump is stopped or paused

Monitoring

- Record PCA observations on the NSW Health Patient Controlled Analgesia (PCA) adult form (NH606622).
- Apply continuous CTG monitoring, pulse oximetry and oxygen via nasal prong/mask (at 2-4/L min) for duration of PCA.
- Record respiratory rate and sedation scores every 15 minutes for the duration of the PCA.
- Record other vital signs and pain score every 15 minutes for 1 hour, then every 30 minutes for 4 hours then hourly if observations are stable.

6. DOCUMENTATION

- NSW Health Patient Controlled Analgesia (PCA) Adult form (NH606622)
- Medical record
- Partogram

7. EDUCATIONAL NOTES

- A woman receiving a PCA should only be managed in wards/areas where the midwives and other health professionals have received appropriate education.
- A woman must not be left unsupervised at any time when using remifentanil PCA. All reported mortality with remifentanil PCA use have occurred when the woman has been left unsupervised for a short period of time
- Remifentanil PCA is not suitable for a woman who:
 - Is allergic to remifentanil
 - Has severe respiratory disease
 - Is unable to comprehend or understand the concept of PCA.
- Remifentanil is stable for 24 hours at room temperature after reconstitution.
- Remifentanil is NOT compatible with oxytocin and therefore requires a dedicated IV line if the woman's labour is being induced or augmented.

8. RELATED POLICIES/PROCEDURES/CLINICAL PRACTICE LOPS

- Prevention Infection and Control Policy - PD2017-013
- Medication Handling in NSW Public Health Facilities - PD2013_043
- High Risk Medicines Management Policy - PD2015_029
- User-applied Labelling of Injectable Medicines, fluids and lines - PD2016_058
- Naloxone – Treatment of opioid induced over-sedation, respiratory depression, pruritus and nausea

**PATIENT CONTROLLED ANALGESIA (PCA) REMIFENTANIL – IN LABOUR
cont'd**

- Patient with Acute Condition for Escalation (PACE): Management of the Deteriorating ADULT and MATERNITY Inpatient - SESLHDDPR/283
- Accreditation for staff to give drugs in specific units
- Patient Controlled Analgesia (PCA) – Intravenous or Subcutaneous
- Neonatal Resuscitation at Delivery

9. RISK RATING

- High

10. NATIONAL STANDARD

- Comprehensive Care

11. REFERENCES

1. NSW Ministry of Health. PD2013_043. Medication Handling in NSW Public Health Facilities. November 2013
2. Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine. 2010, Acute Pain Management: Scientific Evidence. Third Edition. Approved by NHMRC
3. Obstetric Anaesthetists' Association. Remifentanil, 2012. www.oaa-anaes.ac.uk/content.asp?ContentID=333
4. Remifentanil for labour analgesia: time to draw breath? Anaesthesia 2013, 68, pp.231-235.
5. Remifentanil PCA for labour: Wollongong Hospital, July 2012
6. Remifentanil PCA Protocol, St George Hospital, Department of Anaesthesia Clinical Handbook 2006 pp.63-65

REVISION & APPROVAL HISTORY

Reviewed and endorsed Therapeutic & Drug Utilisation Committee 28/4/21
Approved Quality & Patient Care Committee 20/9/18
Reviewed and endorsed Maternity LOPs August 2018
Approved Quality & patient Safety Committee 21/5/15
Changed title from *Remifentanil Patient Controlled Analgesia (PCA) – In Labour* October 2015
Reviewed and endorsed Maternity Services LOPs 12/5/15 – previously titled *Remi-Fentanil PCA for Labour*
Approved Quality & Patient Safety Committee 21/3/13
Reviewed and endorsed Therapeutic & Drug Utilisation Committee February 2013
Approved Quality Council 21/11/05

FOR REVIEW : MAY 2023

APPENDIX 1

Remifentanil Patient Information

What is remifentanil PCA?

Remifentanil is a very short-acting pain relieving drug rather like morphine. Its pain relieving effect comes on very rapidly. It also wears off very quickly afterwards. A small dose of remifentanil is given into a cannula (drip) in your arm, which you will control by pushing a button on an electronic pump.

Who can use remifentanil?

Any woman in labour can request to use remifentanil PCA. However, it is advisable a woman with an allergy to morphine, pethidine or other related drugs does not use remifentanil. Remifentanil may be useful also in certain situations when a woman cannot have an epidural. Having tried remifentanil does not limit your choice of pain relief in labour.

How is it given?

To use remifentanil, you will need to have a cannula ("drip") placed in a vein on the back of your hand or in your arm. The cannula is connected to an electronic pump, which delivers a small dose of the drug once you press the hand-held button. Pain relief is usually effective within 20-30 seconds. It wears off again within a few minutes. You are in control and you get the drug when you need it. There is a safety feature built into the pump so that you can only get a safe amount of the drug. You can use the pump at any time in your labour right up to your delivery if you wish. The effects will still wear off very quickly when you stop using the pump after your baby has been born.

Are there any unwanted effects of remifentanil?

Some women can get sleepy between contractions, however, this will wear off very quickly after you stop using the pain relief. Your midwife will measure your oxygen level using a sensor (like a peg) on your finger, as well as your level of pain relief and drowsiness. Otherwise all observations and treatment is the same as for any other woman in labour. Remifentanil has been shown to be safe for babies, although some babies may also be sleepy for a short time after birth. A paediatrician will be present at the time of your baby's birth as a precaution.

When can I ask for remifentanil?

You can request remifentanil at any time in your labour. Your midwife and an anaesthetist will organise to get the pump set up for your use.