Remifentanil Patient Controlled Analgesia Guideline

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Introduction
Neuraxial analgesia is the gold standard for pain relief in labour and well established across the UK[1]. However, it may not always be possible or preferred. In these circumstances alternative forms of pharmacological analgesia can be considered, including remifentanil patient controlled analgesia (PCA).

This guidelines is for the use by the following staff groups
Anaesthetists
Midwives
Obstetricians
Midwife Support Workers
Anaesthetic theatre staff

Key Amendments

Date	Amendment	By
March 2015	New guideline	P Lo J Marriott
	Changed drug preparation from 2mg remifentanil in 100ml bag to 1mg remifentanil in 50ml syringe.	J Greenwood
20 June 2021	**Major re-write of guideline, which includes:** **Guideline name:** Name of guideline changed for ease of search. **Table of contents:** Added **General/Appendices:** Removal of previous appendices B (Information for the anaesthetist) and C (Guidance for midwives) – condensed into new list of 'Duties and responsibilities'. Removal of appendix E (Observations chart) – as this used to be the Worcestershire Obstetric Warning (WOW) chart. Observations will now be recorded on remifentanil PCA proforma (new appendix B) and routine observations onto Badgernet. Removal of appendix G (Troubleshooting) – incorporated into proforma.	M van Velze T Brunning J Greenwood

	Introduction: Minor changes to introduction to include recent trial information. **Objectives:** Addition of objectives for guideline. **Duties and responsibilities:** added (as explained above) **Indications:** Previously remifentanil PCA was only offered when regional analgesia was contra-indicated or has failed but can now be offered on maternal request. Conditions where an epidural is advantageous for medical or obstetric reasons eg. pre-eclampsia (PET), extreme BMI (BMI > 45), multiple pregnancy (in exceptional circumstances) etc, patients should have in depth counselling and consultant discussion is advised in these cases. **Pre-requisites:** Removal of consultant approval for each remifentanil PCA. Clarified established labour as having regular contractions AND cervical dilatation of at least 3-4cm. Addition of singleton live pregnancy and intention of vaginal birth to list of prerequisites. **Contra-indications:** Changed cut-off for previous opioid administration from five hours to four hours. Addition of intra-uterine death and evidence of foetal distress to list. **Procedure:** New proforma design (see appendix B). *Patient preparation:* • Addition of points to discuss during the consent process of a patient for remifentanil PCA. *Equipment needed:* • Addition of nasal specs for oxygen and naloxone ampule (with syringe, needle and label) in room. *Drug preparations, administration and prescription:* • Remifentanil location changed from obstetric theatre anaesthetic room controlled drug (CD) cupboard to delivery suite CD (as this is where it has been stored the last two years and an operating department practitioner (ODP) is not always required to sign out remifentanil. • Expanded on drug preparations. • Pulse oximeter should be attached prior to starting remifentanil PCA. • Starting dose changed from 20microgram to 30microgram.	

	• Dose changes now allowed after 15minutes of Remi PCA use, where it was previously 30minutes. • Prescription changed from drug chart to proforma. *General points:* • Expanded on when to consider antacids *Discontinuation of remifentanil PCA:* • Remifentanil PCA is now allowed to be continued for perineal suturing after birth, but not started de novo for this. • Clarification on the responsibility of the midwife to safely dispose of remaining drug and documentation in CD book. **Monitoring:** Observations to be documented on the proforma AND on Badgernet, instead of the Worcestershire Obstetric Warning (WOW) chart. Initial observations every five minutes for 15minutes (instead of 20minutes), followed by half hourly observations. Sedation scoring system changed from numerical to AVPU. Cannula integrity, number of attempts/successful boluses and remaining volume to be documented hourly, in stead of four hourly. Added 2 episodes of apnoea, requiring verbal stimulation to breath as an indication to call the anaesthetist. Changed "FHR < 110" to a more generalized 'evidence of foetal distress' as an indication to call the anaesthetist. Added fourth-on and first-on anaesthetists as ports of contact if obstetric anaesthetist in theatre. **Points of safety:** Revised list. **Appendix A** – Remifentanil PCA Patient information leaflet Minor changes and additions to patient information leaflet **Appendix B** – Remifentanil PCA Proforma New design. Major changes include the inclusion of the remifentanil PCA prescription, syringe changing table, remifentanil PCA-specific observation chart. **Appendix C** – Emergency management Minor changes	

CONTENTS

INTRODUCTION

Remifentanil is an ultra-short acting intravenous opioid. It is a hundred times more potent than morphine, with a rapid onset and peak effect within about 80 seconds. Its rapid offset is due to the deactivation by abundant non-specific plasma and tissue esterases, which also makes it non-cumulative. It freely crosses the utero-placental interface, but also undergoes rapid foetal elimination. The side effect profile is similar to other opioids, including an increased risk of respiratory depression when compared to pethidine and the use of an epidural[1]. Therefore, the safety measures and other side effects will be discussed in further detail.

Despite remifentanil proving to provide inferior analgesia compared to an epidural, it showed high maternal satisfaction when used. Modes of delivery, Apgar scores and adverse effects such as nausea, vomiting and pruritus were comparable between the two methods[1].

The RESPITE trial compared intramuscular (IM) pethidine with remifentanil PCA and demonstrated higher patient satisfaction, lower pain scores with significantly fewer women converting to epidurals and fewer instrumental deliveries with remifentanil[2]. Apgar scores were similar for the two drugs[3].

Even though remifentanil PCA is seen as a safe and effective option of analgesia for labour and widely used in maternity units across the world, its use in this manner is currently unlicensed.

OBJECTIVES

- To summarise the indication, pre-requisites and contra-indications to remifentanil PCA
- To explain the procedure of initiating a remifentanil PCA, including drug preparation
- To ensure appropriate monitoring of the patient using a remifentanil PCA
- To ensure safe disposal of any unused drug after use, in line with legal requirements of management of controlled drugs

DUTIES AND RESPONSIBILITIES

Anaesthetist

- Assess the suitability of the patient for a remifentanil PCA
- Consent the patient
- Start remifentanil PCA proforma
- Check the drug with the midwife or ODP and prepare the remifentanil
- Set up the pre-programmed PCA pump
- Explain to the patient how to use the PCA
- Remain in the room for the first five administrations
- Prescribe the PCA, oxygen, naloxone, ondansetron and omeprazole.
- Change the remifentanil syringes when required

Midwife

- Provide patient with remifentanil leaflet prior to informing anaesthetist
- Check and sign out drug with anaesthetist
- Monitor the patient as per protocol
- Ensure patient receives continuous one to one care
- Alert the anaesthetist of significant side effects
- Dispose of residual drug and document in controlled drug book as per trust guideline and legal requirements.

INDICATIONS

- **Contra-indications to epidural analgesia**
  - Patient refusal
  - Local infection or systemic sepsis
  - Coagulopathy
    - Therapeutic anticoagulants
    - Idiopathic thrombocytopaenia (<75 x 10^9/L)[4]
    - Secondary to acquired pathology: Pre-eclampsia (PET) with platelets <100 x 10^9/L within the last six hours[4], Haemolysis Elevated Liver Enzymes and Low Platelets (HELLP) syndrome, cholestasis with INR > 1.4 within the last 24 hours[4], Immune Thrombocytopenic Purpura (ITP), massive haemorrhage, sepsis, Disseminated Intravascular Coagulopathy (DIC) etc.
    - Inherited condition: haemophilia, von Willebrand's disease
  - Raised intracranial pressure
  - Technical difficulties/Structural abnormalities of the back
    - Spinal metastases
    - Previous spinal surgery (judged on individual case basis)
    - Abnormal spinal anatomy e.g. severe kyphoscoliosis
  - Some neuropathies/altered neurology in the lower limbs
- **Failed epidural analgesia**
- **Maternal choice**
  - Given prerequisites are met and no contra-indications (see below).
  - In case of low staffing levels, priority should be given to patients with contra-indications to regional anaesthesia.
  - In conditions where an epidural is advantageous for medical or obstetric reasons, including, but not limited to pre-eclampsia, extreme BMI (BMI > 45) and multiple pregnancy[5,6] patients should have in-depth counselling on the risks and benefits of an epidural vs remifentanil PCA and consultant discussion is advised in these cases.

PREREQUISITES

- > 36/40 gestation
- Singleton live pregnancy
- Intending vaginal birth
- Be in established labour with regular contractions and at least 3-4cm cervical dilatation

CONTRAINDICATIONS

- Patient refusal
- Allergy to opioids
- Other opioids administered within the preceding four hours
- Resting SpO2 <95% or severe respiratory disease
- Intra-uterine death (offer morphine PCA or epidural if not contra-indicated)
- Evidence of foetal distress
- Intravenous drug users
- Insufficient monitoring or staffing levels
- Inability of patient to use the PCA system

PROCEDURE

Patient preparation

- The patient should ideally read the Remifentanil Information Leaflet (appendix A) prior to having a discussion with an anaesthetist.
- Use the remifentanil PCA proforma (appendix B)
- The patient should be consented for this therapy and consent should include
  - Explanation of the drug itself
  - Reasons why an epidural is contra-indicated, if so OR that an epidural can be requested at any time during the use of the PCA, however it will be disconnected prior to epidural insertion
  - Advantages of remifentanil over other opioids
  - Possible side effects:
    - Drowsiness
    - Dizziness
    - Nausea
    - Itching
    - Reduced respiratory rate and transient, usually self-limited lowered oxygen saturations with 2-3 in 10 patients requiring additional oxygen via nasal specs
  - Unlicensed nature of the therapy
- Explain/show how to use the PCA with important points being:
  - Timing of administrations, which should be before or at the start of a contraction to ensure the peak drug effects coincides with the peak of the contraction. Late pressing of the button with reduce effectiveness and increase the risk of side effects.
  - ONLY the patient can press the button (not the midwife or birthing partner)

Equipment needed

- Dedicated 20G/22G intravenous cannula
- Additional large bore cannula for administration of fluids/other drugs
- Pre-programmed remifentanil PCA pump – labelled 'Maternity'
- Intravenous (IV) extension set with an anti-syphon and anti-reflux valve
- 50ml syringe
- 50ml normal saline
- 1mg remifentanil ampule
- Nasal specs for oxygen
- Self-inflating bag valve mask/Ambu bag present in room
- Naloxone (400mcg) ampule with 2ml syringe, drawing-up needle and label present in room (does not need to be drawn up)

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Drug preparation, administration and prescription

- Remifentanil is stored in the controlled drug cupboard on delivery suite.
- Dilute 1mg Remifentanil in 50ml of 0.9% Sodium Chloride (20µg/ml) in a 50ml syringe
- Once mixed, this solution is stable for 24 hours at room temperature.
- Label the syringe appropriately.
- Attach the IV extension set and prime.
- Load the syringe into the remifentanil PCA pump and lock the box.
- There are three pre-programmed regimes, with different bolus doses of remifentanil, a two-minute lockout period and no background infusion:
  - Regime A: 1ml bolus (20microgram)
  - Regime B: 1.5ml bolus (30microgram)
  - Regime C: 2ml bolus (40microgram)
- Start with regime B (30microgram)

- Use the dedicated 20G/22G cannula and connect the PCA giving set directly to this – **do not use a Y-connector/clave. This cannula should not be used for other medications, IV fluids or IV flushes.**
- A pulse oximeter should be attached before the PCA is started and should remain in place for the duration of the PCA. Set the alarm at 95% and nasal specs oxygen should be started if saturations fall below that.
- The anaesthetist should remain in the room for the first five presses.
- If the patient is managing to synchronise her contractions and PCA doses well and pain relief is still not adequate after 15 minutes, increase to regime C (40microgram). On the other hand, if excessive sedation or respiratory depression, go to regime A (20microgram) – NEVER CHANGE THE DRUG CONCENTRATION.
- Prescribe the following:
  - On the proforma: Remifentanil PCA
  - On the drug chart: Naloxone prn
    Oxygen
    Ondansetron
    Omeprazole/Antacid

General points

- Mothers can only drink clear fluids once a remifentanil PCA is started.
- Entonox and TENS (transcutaneous electrical nerve stimulation) may still be used in addition to a remifentanil PCA.
- No other opioids should be administered in conjunction to a remifentanil PCA.
- An epidural can be requested at any stage during the use of a remifentanil PCA, if not contra-indicated. However, the PCA must be disconnected prior to epidural insertion.
- Prescribe an antacid, especially if the patient has a history of reflux or when a remifentanil PCA is used because regional anaesthesia is contra-indicated and the patient is at high risk of requiring delivery by caesarean section.
- Breastfeeding can be commenced immediately after delivery AND discontinuation of the remifentanil PCA[7].

Discontinuation of remifentanil PCA

- The PCA can be used for the duration of labour and can be continued during perineal repair.
- Once the remifentanil PCA is no longer required, it should be disconnected, and the cannula removed WITHOUT flushing it.
- The midwife is responsible for safe disposal of the remaining drug, as per trust guidelines, with the total amount administered and disposed of documented in the controlled drug book.

MONITORING

Logistics and staff

- Ensure one to one midwifery care for the duration of the PCA by a midwife trained in the care of a woman with a remifentanil PCA and Intermediate Life Support (ILS).
- An anaesthetist is to be present in the room for the administration of the first five doses.
- The anaesthetist should remain on the delivery suite whilst remifentanil is being used.

Observations

- All observations to be documented on the remifentanil PCA proforma AND on Badgernet.
- Record a set of baseline observations (HR, BP, Sp02, RR, CTG) prior to starting a remifentanil PCA
- Saturations should be monitored continuously for the duration of the remifentanil PCA.
- HR, BP, RR, saturations, pain and sedation scores should be documented every five minutes for the first 15minutes, then half hourly until delivery, unless more frequent observation is required.
- The BP cuff should be placed on the arm which does not have the cannula attached to the remifentanil PCA.
- The integrity of the cannula, number of attempts/successful boluses and remaining volume should be documented hourly.

Pain scoring:

- 0 = Pain free
- 1 = Mild pain
- 2 = Moderate pain
- 3 = Severe pain

Sedation scoring:

- A = Alert
- V = Voice (responds to)
- P = Pain (responds to)
- U = Unresponsive

Indications to call the anaesthetist:

- Sedation scores P or U on the AVPU scale
- RR < 8 breaths/minute
- Two episodes of apnoea (>10 seconds) requiring verbal stimulus to breath
- Saturations < 90% despite 2L oxygen via nasal specs
- Maternal HR <50bpm
- Systolic BP decrease by >25% baseline or < 90mmHg
- Evidence of foetal distress as part of the normal response to such a situation and especially if any of the above features present.
- The patient does not want to continue with the remifentanil PCA
- Difficulty achieving analgesia
- There is a problem with the PCA pump

In the event that the obstetric anaesthetist is in theatre out of hours, please do not hesitate to call the fourth on (703) or first on (700) to help troubleshoot.

POINTS OF SAFETY

- Use of a dedicated 20G/22G cannula for remifentanil PCA with no Y-connector.
- PCA cannula not to be used for any other medications, fluids or flushes.
- ONLY use a pre-programmed maternity PCA pump and DO NOT CHANGE the remifentanil concentration.
- ONLY the patient can press the PCA button (not the midwife of birthing partner).
- No other opioids should be administered in conjunction to a remifentanil PCA.
- Continuous one to one midwifery care for the duration of the PCA.
- Continuous oxygen saturation monitoring while using the PCA.
- Additional oxygen administration via nasal specs, if needed.
- Mothers can only drink clear fluids while using a remifentanil PCA.
- Ensure an Ambu bag and an ampule of naloxone are present in the room.
- On discontinuation of the PCA, remove the cannula without flushing it.

Appendix A: Remifentanil Patient Controlled Analgesia (PCA) - Patient Information Sheet

What is a Remifentanil PCA?

Remifentanil is an ultra-short acting potent morphine-like substance. It is given for pain relief in labour via a dedicated cannula into your vein with a specific pre-programmed pump controlled by yourself and is therefore called 'patient controlled analgesia' or PCA. It works very quickly and also wears off quickly, meaning that it is good for the nature of labouring pains. Although it cannot provide complete pain relief, many women find it very beneficial.

Who can use a Remifentanil PCA?

Most women are able to use a remifentanil PCA. It is a useful method of pain relief when an epidural is not preferred or cannot be used, for reasons such as infection and bleeding problems, abnormalities of the spine or difficulty of insertion.
There are a few circumstances when a remifentanil PCA should not be used. These include if you have an allergy to morphine-like medicines, if you have a severe breathing problem, if pethidine or other morphine-like medicines have been used within the last four hours, and if there is insufficient staff available to monitor you whilst the remifentanil PCA is being used.

What are its side effects?

Side effects wear off quickly after stopping the PCA and may include:

- Drowsiness
- Dizziness
- Nausea
- Itching
- Slowing of breathing rate
- Decreased oxygen saturation levels

How do we ensure it is safe to use?

Safety features include

- The use of specifically programmed pump
- Continuous presence of your midwife in the room
- Continuous monitoring of your oxygen saturations
- The administration of additional oxygen via nasal specs if needed
- ONLY YOU are allowed to press the button, not the midwife or your birthing partner

What are the effects on my baby?

Even though remifentanil crosses the placenta to reach the baby, it is also rapidly deactivated in their blood and has therefore been demonstrated to be safe. It has no additional effects than those of pethidine and these effects are shorter lived.

How do I use a remifentanil PCA?

The anaesthetist will explain this to you. The pump is programmed to give you a small and exact amount of the remifentanil when you press a button. It only allows a set number of administrations in a given hour and therefore reduces the risk of having too much of it.
The effect of remifentanil can be felt within 30 seconds and will wear off after a few minutes. As it does not work immediately, the button should be pressed when a contraction starts, NOT when the contraction is at its most painful. This allows time for it to reach its full effect when the contraction is at its worse and wear off as the contraction does. Pressing the button late will reduce the effectiveness and can increase the risk of side effects. We require you to only drink clear fluids once you start using a remifentanil PCA.

When can I ask for a Remifentanil PCA?
It can be used anytime during established labour. If you decide to use a remifentanil PCA, your midwife will contact an anaesthetist to discuss the matter further and to answer any questions you have. It shouldn't take too long to set up the pump and once it is connected to the cannula in your vein, it will be ready to use.

Can I use other pain relief medicines with a Remifentanil PCA?
Yes, Entonox (aka 'gas and air') and TENS machines can be still be used with a remifentanil PCA, if required. However, you won't be able to use other morphine-like medicines, such as pethidine or codeine.

If I use a Remifentanil PCA, can I request an epidural if I want one?
If an epidural is not contraindicated, then yes, you can opt for one at any time. You will need to be assessed by the anaesthetist again, as is routine for all epidurals. The remifentanil PCA must be discontinued prior to insertion of the epidural.

Is it safe to breastfeed my baby if I use a remifentanil PCA during my labour?
Yes, remifentanil is broken down by the body extremely quickly. Once you have stopped using the PCA, very little remifentanil will be in your system after 5-10 minutes. You can start breastfeeding immediately after delivery and discontinuation of the PCA.

Appendix B: Remifentanil PCA Proforma for labour – FRONT PAGE

Affix patient label here or record
Name:
NHS no:
Hosp no:
DOB: M/F

REMIFENTANIL PATIENT CONTROLLED ANALGESIA (PCA)

Anaesthetist: _____
Date:___/___/___ Time:___:___

Prior analgesia:
☐None ☐N2O ☐Pethidine ☐Other

Indication:
☐Regional contra-indicated: _____
☐Maternal request

ALLERGIES/ADVERSE DRUG REACTIONS		
NONE KNOWN	SIGNITURE: SOURCE:	
DATE	DRUG/OTHER	REACTION

PMH/Obstetric history:

Drug history:

Prerequisites:

	>36/40 gestation
	Singleton, live pregnancy
	Established labour
	No opioids in last 4hours
	Baseline sats >95%
	No opioid allergy

Consent:

	Leaflet seen
	Drowsiness
	Dizziness
	Nausea
	Itching
	Reduced RR
	Need for O2 (1/10)
	Incomplete analgesia
	Unlicensed use

Equipment: (20/22G)

	Dedicated cannula
	Additional cannula
	Maternity PCA pump
	Giving set
	50ml syringe
	50ml saline
	1mg remifentanil
	Nasal specs
	Self-inflating bag
	Naloxone ampule

Prescription:

DATE	DRUG Remifentanil 1mg in 50ml NaCl 0.9%	Volume	PCA Lock Out Time	PCA Bolus Dose (mcg)	Signature/ Name of prescriber	Time started	Time ended
	Remifentanil 20microgram/ml	50ml	2min	Regime A 20microgram			
	Remifentanil 20microgram/ml	50ml	2min	Regime B 30microgram			
	Remifentanil 20microgram/ml	50ml	2min	Regime C 40microgram			

Date	Time	Syringe commenced/Changed	
		Prepared	Checked

☐Syringe labelled
☐Oxygen prescribed
☐Naloxone prescribed
☐Ondansetron prescribed
☐Omeprazole prescribed

Appendix B2: Remifentanil PCA Proforma for labour – REVERSE PAGE

Affix patient label here or record
Name:
NHS no:
Hosp no:
DOB: M/F

Monitoring a patient with a Remifentanil PCA
Complete PCA chart below until PCA discontinued in addition to routine observations in labour on Badgernet.
☐ Continuous one to one midwifery care
☐ Anaesthetist present for first 5 administrations

OBSERVATIONS: **Date:**

	Actual time	Sats %	RR bpm	Sedation score	Pain score	PVC integrity	Attempts/ Boluses	Volume remain	Initial
Baseline									
5min									
10min									
15min									
30min									
1hour									
1h30									
2hours									
2h30									
3hours									
3h30									
4hours									
4h30									
5hours									
5h30									
6hours									

Pain score	
None	0
Mild	1
Moderate	2
Severe	3
Sedation score	
Alert	A
Voice (responds to)	V
Pain (responds to)	P
Unresponsive	U

Call the anaesthetist if:
- Sedation scores P or U on the AVPU scale
- RR < 8 breaths/minute
- Two episodes of apnoea (>10 seconds) requiring verbal stimulus to breath
- Saturations < 90% despite 2L oxygen via nasal specs
- Maternal HR <50bpm
- Systolic BP decrease by >25% baseline or < 90mmHg
- Foetal distress, especially if above features present.
- The patient does not want to continue with the remifentanil PCA
- Difficulty achieving analgesia
- There is a problem with the PCA pump

Post-delivery:
Time of delivery: _____
Mode of delivery: ☐ NVD ☐ Instrumental ☐ LSCS
Time PCA stopped: _____
Cannula removed without flush ☐
Adverse events: ☐ Sedation ☐ Dizziness ☐ N+V ☐ Itching ☐ Decreased RR ☐ Low sats ☐ Other:

Patient satisfaction (1-10): _____

Appendix C: Emergency Management

Over-sedation

Extreme drowsiness is a significant precursor for respiratory depression.
If the patient has a sedation score of P or U on the AVPU scale i.e. not responding to voice:

- Discontinue the remifentanil PCA
- Call the anaesthetist
- High flow oxygen (15L/min) should be administered via a face mask
- Prepare naloxone 400micrograms
- Other causes of sedation should be ruled out, for example hypoglycaemia, hypoxia, hypercarbia, use of other sedating medication, cerebrovascular event, post-ictal state
- Consider changing the PCA regime to one delivering a smaller dose of remifentanil

Respiratory depression

Remifentanil is a potent respiratory depressant. Although it has a rapid clearance, extreme vigilance is required with its use.
If RR<8bpm or saturations <90%:

- Discontinue the remifentanil PCA
- Attempt to wake the patient and encourage to breath
- High flow oxygen (15L/min) should be administered via a face mask
- Call the anaesthetist
- Prepare naloxone 400micrograms
- Consider changing the PCA regime to one delivering a smaller dose of remifentanil

Respiratory arrest/Apnoea:

- If a patient is apnoeic for > 10 seconds, verbally encourage to breath and discontinue the remifentanil PCA
- If no response despite strong verbal stimulus
- Pull the emergency buzzer and/or put out a ‘2222’ emergency call
- Administer basic life support
- Put the patient in the left lateral position
- Give 100% oxygen and assisted breaths with an Ambu bag
- Prepare naloxone 400micrograms
- Change to 15L oxygen via a non-rebreather facemask once breathing again
- Change the PCA regime to a lower dose

Bradycardia (HR<50bpm):

- Discontinue the remifentanil PCA
- Treat with glycopyrrolate or ephedrine as needed

Hypotension (SBP <90mmHg or <25% of baseline):

- Discontinue the remifentanil PCA
- Reposition the patient: head down, left lateral
- Give a 250ml fluid bolus
- If unresponsive to the above, treat with ephedrine or metaraminol/phenylephrine
- Look for other causes of hypotension, as haemodynamic effects with Remi PCA are often insignificant

Foetal bradycardia (FHR < 110)/Foetal distress

- Discontinue the remifentanil PCA
- Manage as per maternity/obstetric guideline, correcting any of the above features if present.

Appendix D: Patient Information Infographic

Remifentanil Patient Controlled Analgesia (PCA)

What is it?

Remifentanil is an ultrashort acting morphine-like substance that is injected into a vein on your demand by the press of a button, which is connected to a pre-programmed pump

When is it used?

When an epidural is not safe

When an epidural cannot be sited

On maternal request

Pre-requisites?

> 36 weeks gestation

Established labour

Intention of vaginal birth

Singleton pregnancy*

When can it NOT be used?

Allergy to opioids/morphine

Any opioids received in the previous four hours

Severe lung disease

Foetal distress

Insufficient staffing

Side effects

Drowsiness
Dizziness
Nausea
Itching
Slowing of breathing
Decreased oxygen levels

Safety features

The use of a specific pump

The use of a dedicated cannula

Continuous midwifery presence

Continuous oxygen monitoring

Used of additional oxygen if needed

Only the patient can use the pump

Other common questions:

Is it safe for my baby? **YES**

Can I breastfeed as normal? **YES**

Can I still use 'gas and air'? **YES**

Can I still get pethidine? **NO**

Can I change my mind and ask for an epidural? **YES**

For more information, please don't hesitate to ask for the full patient information leaflet or to speak to an anaesthetist

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This key document has been circulated to the following individuals for consultation:

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