

Epidural - Non-Obstetric - Full Clinical Guideline

Reference no.: CG-PM/2012/009

Purpose

Epidurals are the gold standard against which other methods of relieving postoperative pain are compared. They can provide a very high level of patient satisfaction and a very low level of perceived postoperative pain. They are opiate sparing and thus reduce opiate related complications.

Aim and Scope

The following guidelines outline the safe and effective use of **Epidural Analgesia**. Epidural insertion is to be carried out by Consultant Anaesthetists, experienced Specialty Doctors and Non-Consultant Career Grade Anaesthetists.

Definitions Used

Epidural

The epidural space surrounds the outermost membrane of the spinal cord and lies within the bony ring of the spinal vertebrae. Nerves, which cross the epidural space, can in this way be “numbed”, thus causing analgesia in the area affected by these nerves.

Implementation

- Patients must give informed consent pre-operatively. It is the anaesthetist's responsibility to ensure that patient counselling has taken place and that an epidural patient information leaflet has been distributed where appropriate.
- Prior consultation with SDU/ HDU/ ITU and ward staff is essential before initiating epidural analgesia to ensure adequately trained staff are available to care for the patient.
- At RDH, all patients will be cared for on the Step-Down Unit or ICU/HDU for management of their epidural.
- At QHB non obstetric epidurals are only permitted in a patient being nursed in HDU or ITU.

Suggested Indications

- Major surgery, including chest, rooftop, loin or full midline incisions.
- Chest trauma not suitable for Erector Spinae Plane Catheter (eg >3 ribs or bilateral)
- Patients undergoing thoraco/abdominal surgery with poor respiratory reserve.
- Patients undergoing thoraco/abdominal surgery with chronic pain syndromes, particularly those on long term opiates.

Contraindications

- Patient refusal
- Coagulopathy/anticoagulated
- Hypovolaemia
- Sepsis- systemic or at insertion site

Relative Contraindications

- Fixed cardiac output
- Neurological disease e.g. MS, paraplegia, lumbar spine problems

Insertion Procedure

- Refer to Infection Control Guidelines for the Insertion of Epidural Catheters **Appendix 1**
 - Explain the sequence of events to the patient.
 - The epidural insertion site should be incision congruent i.e. sited as close as possible to the uppermost spinal segment to be blocked, adopting a standard aseptic procedure.
 - Use IV 3000 to cover insertion site and then adhesive tape e.g. Flexifix, Mefix, to secure the epidural catheter up the back to the shoulder. Additional dressings are not necessary. The insertion site must be visible.
 - An anti-bacterial filter must always be used. It should be placed at the junction of the epidural catheter with the infusion line.
 - The position of the catheter, distance to skin and length of catheter left in the epidural space must be recorded on the anaesthetic chart.
 - All epidural drugs administered must be documented.
 - At RDH the infusion must be prescribed on Lorenzo. The **standard regimen** will be **Bupivacaine 0.1% with Fentanyl 2 micrograms/ml** in a 480ml bag obtained from the Pharmacy department.
 - At QHB the infusion must be prescribed on V6. The standard regimen will be 0.125% Levobupivacaine with Fentanyl 4 micrograms /ml in a 500ml bag obtained from the Pharmacy department.
 - Particular attention must be paid to the expiry date, concentration of medication and rate of infusion. At set up, bag change or rate change, the new settings must be checked by a second registered practitioner.
 - The infusion must be attached and started by the anaesthetist.
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- For advice or help with problems contact a member of the Acute Pain Team.

RDH Acute Pain Team Contact:

In hours contact 07788 388426 or bleep 1283, 3365, or 3078

Out of hours contact Anaesthetic SR or Consultant on-call via switchboard.

QHB Acute Pain Team Contact:

Acute pain nurses bleep 581/572

First on call anaesthetist Bleep 511. On call Consultant via switchboard.

MANAGEMENT OF THE EPIDURAL**Theatre/Recovery**

- The anaesthetist must prescribe the initial rate of infusion.
- Wherever possible, the extent of epidural block should be determined and documented prior to discharge from recovery.
- It is the inserting anaesthetist's responsibility to ensure the epidural provides satisfactory analgesia prior to discharge from recovery.
- A test dose may be required to ascertain whether the epidural is working.
 - inject 2-3mls of lignocaine 2% via the epidural catheter. (BP should fall within 5 minutes confirming correct placement)
 - check position of catheter
 - consult senior help if required

Maintenance of the Epidural Infusion

- At RDH a 480ml bag containing Bupivacaine 0.1% with Fentanyl 2micrograms/ml is used as the **standard** continuous infusion.
- At QHB the standard regimen will be 0.125% Levobupivacaine with Fentanyl 4 micrograms/ml in a 500ml bag obtained from the Pharmacy department.
- Infusion rate (**mls/hr**) depends on:
 - Position of catheter
 - Number of segments to be blocked
 - Age and height of patient
- Consider starting with 1ml per segment to be blocked and increase as necessary.

Monitoring

- At RDH Monitor and record observations on an Epidural Observation Chart as described in **Appendix 2**
- AT QHB Monitor and record observations in HDU Observation Chart.
- Aide Memoire, **Appendix 3**

Assessing the Pain

- Monitor and document pain scores using the Verbal Rating Score 0-10 (RDH) or Pain Score of 0-3 (QHB).
- Hourly for 1st 24 hours. **Appendix 2**
- If the patient complains of pain
- After analgesic intervention

Testing the Block (4 hourly)

- Testing the block shows whether it is unilateral, too high or absent.
- It can help decide what volume of top-up is needed if the patient has inadequate pain relief
- It can aid detection of actual or potential problems with the patient.

A cold indicator (cold pack or ethyl chloride) is touched onto the patient's skin, on both right and left sides, starting at the clavicle and working downwards.

The area at which the patient first perceives absence of cold is the upper level of the block.

Varying the Infusion Rate

In order to manage pain optimally, at RDH appropriately trained nurses may vary the infusion, within the prescribed range by a maximum of 5ml, following the “Nurse Adjusted Epidural Infusion Flow Chart”. **Appendix 4**

Changing the Infusion Bag and Line

- Infusion bags must be changed using aseptic technique and observing universal precautions.
- The epidural system between the pump and the patient must be considered as closed and should not be breached.

Complications

➤ Inadequate Analgesia

Pump Bolus for Severe Pain (VRS >7/10 or pain score of 2-3)

If patient complains of severe pain nursing staff should give a bolus of 5ml of the standard infusion via the infusion pump. **Appendix 5**

Following such a bolus B/P, pulse and respirations must be measured and recorded every 5 mins for 30 mins. Ensure treatment for hypotension is available if required

Reassess pain score after 30mins. A further 5ml bolus may be given via the pump if pain has not improved.

Seek help from Acute Pain Team/on call anaesthetist if pain is unresolved following second bolus.

Concentrated Bolus (medical staff)

- Levobupivacaine 0.25% may be required as a bolus dose via the epidural catheter, if analgesia is inadequate.
- Have ephedrine (30mg in 10ml) to hand
- Give 1ml per segment to be blocked and position the patient appropriately.
- Monitor B/P every 5mins for 30 mins following a bolus.

Alternative Regimes

If the epidural is not working despite concentrated boluses and it is still required it will need to be re-sited.

However occasionally if the epidural is working but inadequate (for example due to multiple injuries or chronic pain syndromes) it is recommended the patient has a STANDARD

EPIDURAL infusion and receives an opioid PCA alongside allowing for management of breakthrough pain, or alternatively, intermittent doses of subcutaneous opioids as per guidelines (Ref No: **CG-PM/2011/004**)

It is not recommended to run a PLAIN bupivacaine epidural +/- opioid PCA as this is inferior to the standard regime (unless the patient has a fentanyl allergy)

It is strongly recommended that concentrated bupivacaine infusions (e.g. 0.25%) are not used due to the potential risk of complications

Hypotension

- If hypotension, i.e. systolic blood pressure less than 100mm Hg, is observed either during routine observations or following a bolus dose, a fluid bolus should be commenced (e.g. Hartmann's 250-500ml stat) and a doctor informed.

Remember that hypotension is not necessarily due to the epidural.

BLOOD OR FLUID LOSS AS A RESULT OF THE SURGERY MUST BE EXCLUDED.

Respiratory Depression / Increased Sedation

- Stop Infusion Pump
- If respiratory rate is less than 8 and/or the sedation score is 2, consider IV Naloxone 100 micrograms
- Repeat Naloxone at 1 minute intervals until respiratory rate >10 and sedation score <2

Excessive Motor and Sensory Block

- Excessive motor block is more common with epidurals sited in the lumbar region and may result in weakness/heaviness of the legs, which the patient may find unpleasant.
- If mobilisation is affected consider reducing the rate of the infusion. This may result in a poorer quality of analgesia and should be explained to the patient.
- Inability to move limbs, i.e. paralysis, is a medical emergency. Contact the Acute Pain Team/on call anaesthetist immediately.

Pressure Sores

- Reduced movement and sensory loss may result in prolonged pressure on the sacral area and heels. All staff caring for patients receiving epidural analgesia must be alert to the potential serious problem of pressure related ulcers and monitor accordingly. Patients should be nursed on a pressure-relieving mattress and turned regularly.
- Patients who have undergone orthopaedic or vascular surgery should be observed to detect possible development of compartment syndromes.

Urinary Retention

- This is a side effect of all opioid drugs and is common when opioids are placed in the epidural space (estimated incidence up to 60%).
- Consideration should be given to the insertion of an indwelling urinary catheter if not already present.

Pruritus

- This is an effect of opioids acting at spinal level and can be severe in some cases.
- It may be relieved by: IV ondansetron or a small dose of Naloxone IV (50 micrograms or removing the opioid from the epidural infusion (discuss with the anaesthetist)

Catheter migration and dural puncture

- Inappropriately high sensory block, or profound motor block, may be the first sign of catheter migration, and if undetected may progress to a "Total Spinal Block".
- Although this is a rare complication it is important to be vigilant so that subdural/intradural migration is detected promptly. (see Treatment of Total Spinal Block **Appendix 6**)

Successful insertion of an epidural catheter following initial dural puncture.

- Extra vigilance is required with these patients.
- Seek senior advice.
- Volume of top up and starting rate of the infusion must be chosen with great care because of the risk of local anaesthetic being deposited intrathecally.

Post Dural Puncture Headache

- Mild headaches are fairly common after any type of surgery.
- If the epidural needle punctures the dura there may be a small leak of fluid, which can cause headache, particularly when changing position. The headache can vary from mild to severe. Neck pain, nausea and a dislike of bright lights may also be experienced.
- Treatment:
 - Lie patient flat
 - Administer simple analgesics
 - Increase fluids
- A severe post dural puncture headache may need to be treated with an epidural blood patch.

Disconnection in the epidural circuit

Epidural in-line filters are suitable for the duration of the epidural and do not routinely need to be replaced within this time.

A break in the circuit may occur in two places

- Disconnection between the bag and the filter:
 - The filter should be capped off, using a sterile non-injectable bung, and the infusion line and bag replaced.
- Disconnection between the patient and the filter:
 - The procedure to follow will depend on if the event is witnessed or not:

Witnessed Event**Non Witnessed Event**

- | | |
|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> Place both ends in a sterile field <input type="checkbox"/> Clean the epidural catheter using betadine to length of over 10cm <input type="checkbox"/> Cut 10cm from the end of the epidural catheter using sterile scissors <input type="checkbox"/> Reconnect to the new filter | <ul style="list-style-type: none"> <input type="checkbox"/> Stop infusion and consult Acute Pain Team / On call Anaesthetist <input type="checkbox"/> Remove epidural catheter if it is safe to do so – in relation to the last dose of anticoagulant <input type="checkbox"/> Consider resiting depending on the clinical state of the patient |
|---|--|

Removal of Epidural Catheters

- Procedure, refer to **Appendix 7**
- Refer to Guidelines for Prevention Neuraxial Haematoma **Appendix 8**
- Remove catheter 12 hours after last dose of Enoxaparin
- Delay subsequent dose of Enoxaparin for 4hours post removal
- Patients taking Warfarin must have INR checked prior to catheter removal. (should be 1.5 or less).

Transition Analgesia

Most patients experience a decrease in pain as the days pass following surgery. However this should not be assumed. Patients should be evaluated individually on the basis of self-report and ability to perform recovery activities. The choice of analgesia and analgesic technique following discontinuation of the epidural will depend on the patient's clinical condition and pain scores. Patients may need to be transferred to PCA or morphine infusion if the epidural has failed.

Cont.....

Otherwise:

If the epidural has been insitu for the correct number of days, administer oral analgesia one hour before stopping the infusion. The need for additional analgesia can be assessed. Oral analgesia should be started as soon as the patient can tolerate oral fluids. Consult the Trust Analgesic Stepladder.

The patient should be made aware that they may experience slightly more pain for around 24 hours post discontinuation, and that analgesia will be given regularly and on request.

References

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Pain Management Guidelines for Adults

Schug S A et al (2015)

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Documentation Controls

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APPENDIX 1

Acute Pain Service and Microbiology

Infection Control Guidelines for the Insertion of Epidural Catheters

- Wash hands using a surgical scrub.
- Use sterile gloves, gowns, masks and two large sterile drapes.
- Patient's skin should be visibly clean, if not clean with soap and water.
- Prepare patient's skin with chlorhexidine in 70% alcohol.
For pregnant patients use only chlorhexidine in 70% alcohol.
Do not use aqueous based antiseptics.
- Ensure the antiseptic has the date of opening stated on the bottle and that the date of use is no more than 7 days after.
- Apply the antiseptic in concentric circles moving towards the periphery.

ALLOW THE ANTISEPTIC TO DRY

- Use IV 3000** to cover the insertion site and adhesive tape e.g. Flexifix or Mefix, to secure the catheter up the back. The insertion site should be visible through the dressing, so do not obscure with gauze or tape.
- Document date and time of insertion on the Anaesthetic chart. Print name and sign.

APPENDIX 2
Epidural Monitoring

INTRAVENOUS ACCESS	Must be maintained at all times even if fluids are no longer required. Any situation where a patient is found with an epidural but no patent IV access will be require completion of an IR1.
OBSERVATIONS	Record pain & sedation scores, respiratory rate, BP, O2 Saturations on the Epidural Observation Chart – Hourly for the first 4 hours 4 hourly thereafter (minimum requirement) 4, 8, 12 & 24 hours post removal
LEVEL OF BLOCK & LEG WEAKNESS	Every 4 hours
PUMP READING	Record rate per hour and volume infused on checklist
AFTER A BOLUS	Either pump or CONCENTRATED bolus record obs every 5 minutes for half an hour
PAIN SCORE	If the VRS is greater than 7/10 or Pain Score 2-3 (severe) follow the BOLUS ALGORITHM. If no improvement after two bolus (1 hour) call the Acute Pain Team or On Call Anaesthetist
INSERTION SITE CHECK	Once every 8 hours. Report to the Dr any signs of redness, swelling or leakage immediately
SEDATION SCORE	If sedation score is 2 STOP THE PUMP IMMEDIATELY call for help
RESPIRATORY RATE	If the respiratory rate is less than 8 breaths per minute STOP THE PUMP , call for help (Acute Pain Team, on call anaesthetist or ICU) Prepare NALOXONE
BLOOD PRESSURE	If BP less than 100 mmHg systolic inform on call anaesthetist or Acute Pain Team immediately: Simultaneously Give Fluid Bolus (500mls Hartmann's) Place the patient supine and elevate legs but NOT head down Administer oxygen

APPENDIX 2**Epidural Monitoring (Cont.)**

SENSORY LOSS	This will occur to some extent in the area affected by the epidural. An inadvertently high block (above T4) may result from catheter migration, either subdurally or into the subarachnoid space. A total spinal may result. THIS IS A MEDICAL EMERGENCY. Call for help immediately – On call anaesthetist / Cardiac Arrest Team
MOTOR BLOCK	Careful attention should be paid to pressure areas. Some weakness of the lower limbs may develop over time, particularly with lumbar epidurals. If this affects mobility, then the rate of infusion can be lowered. However, if the patient has a thoracic epidural sited above T10, there should not be lower limb weakness and the Acute Pain Team or on call anaesthetist should be contacted. If the level of block is higher than expected, especially if associated with paralysis – STOP THE PUMP IMMEDIATELY contact the ON CALL ANAESTHETIST IMMEDIATELY.
PRURITIS	Itching is a common complication of epidurally administered opioids. If severe, itching can be treated with a dose of IV Ondansetron or a small (50mcg) dose of naloxone (see treatment of complications) Antihistamines are ineffective. Alternatively, the epidural can be changed to plain bupivacaine 0.125% however this provides less effective analgesia

DO NOT GIVE OPIOIDS BY ANY OTHER ROUTE DURING AN EPIDURAL INFUSION UNLESS SPECIFICALLY INSTRUCTED BY THE ACUTE PAIN TEAM OR CONSULTANT ANAESTHETIST.

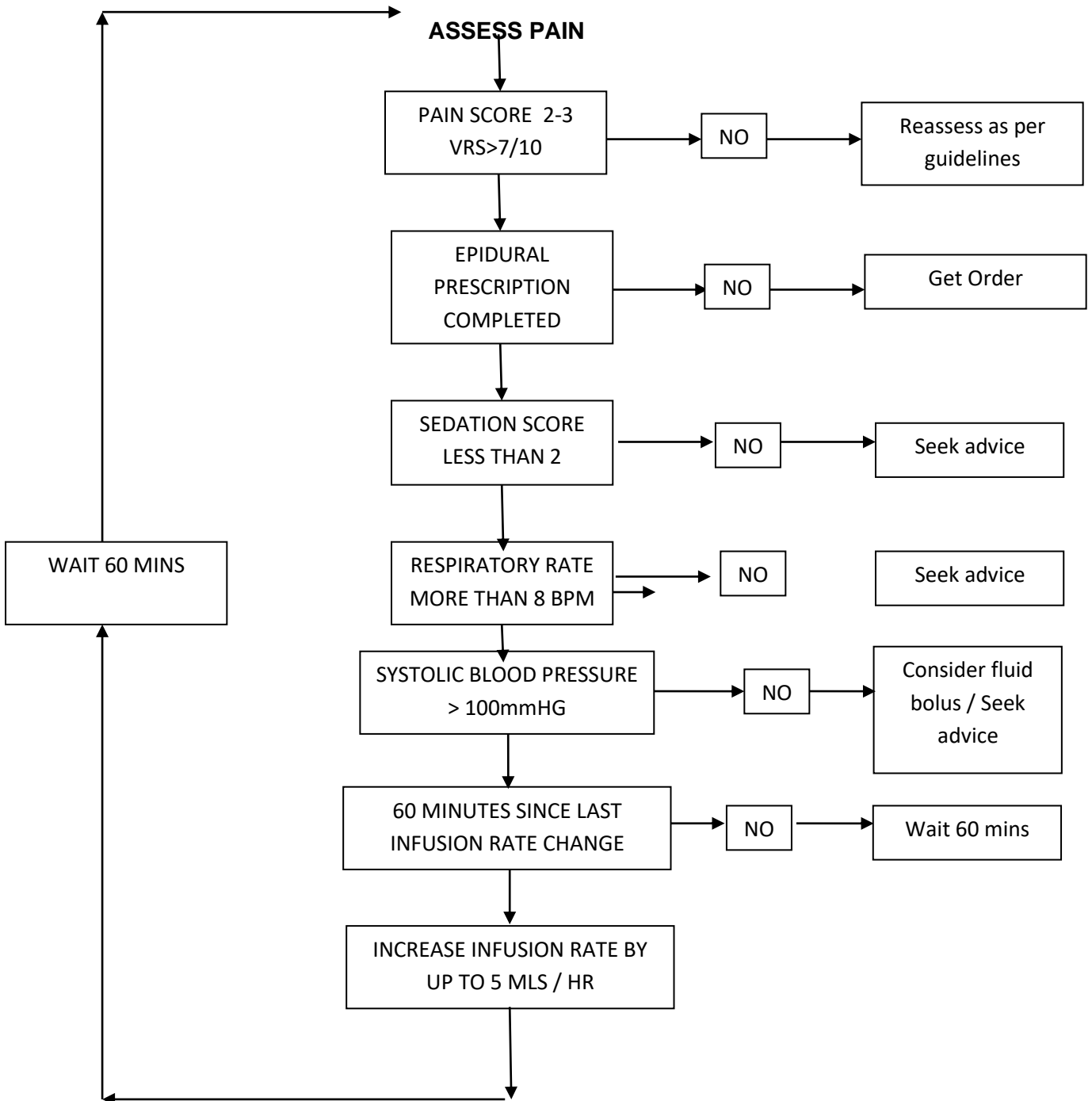
APPENDIX 3

AIDE MEMOIRE
For the Treatment of Complications of Epidural Analgesia

INADEQUATE ANALGESIA VRS>7 (Pain Score 2-3)	Follow bolus protocol <u>or</u> call Acute Pain Team.
SEDATION SCORE>2	Stop pump. Contact on call anaesthetist Prepare Naloxone (400micrograms to 4mls with NaCl 0.9%).
SATURATION <90%	Administer O ₂ 4 l/min if without oxygen. Increase flow rate to 10 l/min if already on oxygen.
RESPIRATORY RATE <8/min	Stop pump. Contact on call anaesthetist Ensure Naloxone available Give 100mcg increments until resps >10/min.
SYSTOLIC BP <100mm Hg	Contact on call anaesthetist Commence IV fluid bolus stat. Place patient supine. Administer O ₂ 4l/min. Check no surgical cause i.e. blood loss
INADVERTENTLY HIGH BLOCK OR INAPPROPRIATE PARALYSIS	Stop pump. Call Acute Pain Team <u>IMMEDIATELY</u> . Give oxygen. See "Treatment of Total Spinal Block"
PRURITUS	Consider IV ondansetron Consider removing opioid from infusion. Consider small dose Naloxone IV (50micrograms). (See PGD) Remember to increase infusion rate if opioid removed. Call Acute Pain Team if unresolved

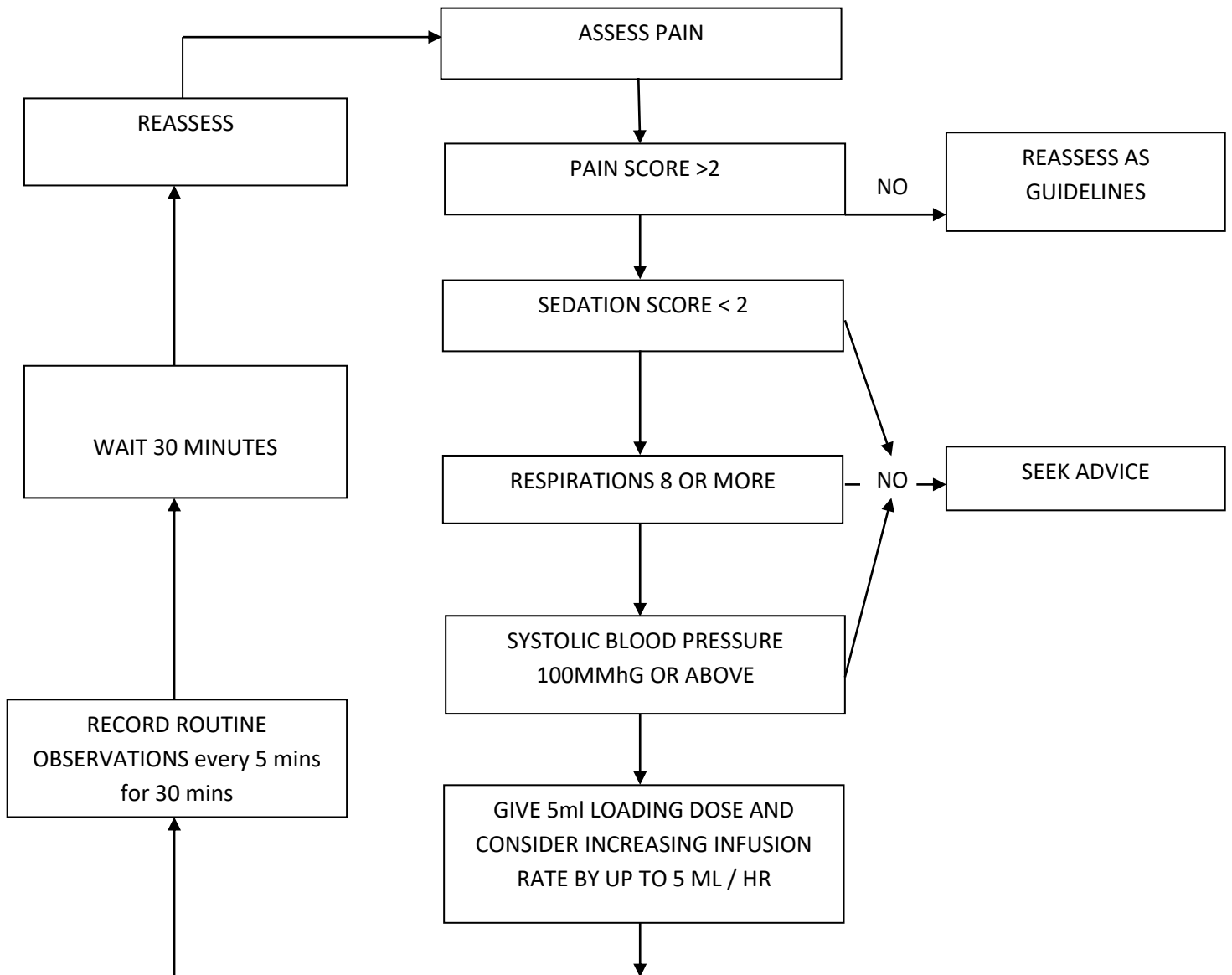
APPENDIX 4

Nurse Adjusted Epidural Infusion Flow Chart



APPENDIX 5

ALGORITHM FOR NURSE ADMINISTERED LOADING DOSE FROM THE EPIDURAL INFUSION PUMP (ITU / HDU / SDU / RECOVERY)



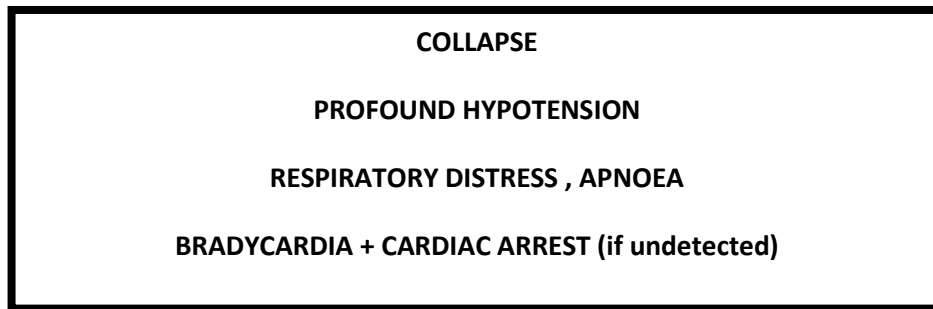
IF PAIN RELIEF IS UNSATISFACTORY AFTER 2 LOADING DOSES, CALL A MEMBER OF THE ACUTE PAIN TEAM OR ON CALL ANAESTHETIST

APPENDIX 6

TREATMENT OF TOTAL SPINAL BLOCK

This may present when the volume of local anaesthetic infused into the epidural space inadvertently enters the subdural or subarachnoid space.

CLINICAL PICTURE



TREATMENT

- A AIRWAY**
- B BREATHING**
- C CIRCULATION**

CALL THE ARREST TEAM

- Remember that local anaesthetics and opioids are metabolized in the liver
- Provided there is adequate hepatic perfusion, recovery from these effects will occur as the drugs (local anaesthetic and opioids) become metabolised.

APPENDIX 7

REMOVAL OF THE EPIDURAL CATHETER

Equipment –

Dressing Pack
Skin cleansing agent e.g. Betadine
Stitch cutter if epidural catheter tunneled
Small Elastoplast

Procedure -

- Explain the procedure to the patient and ensure privacy
- Position the patient either sitting or lying, with spine fully flexed, head tilted with chin on chest (and knees drawn up if lying)
- Wash hands
- Remove dressing and tape from catheter site
- Cleanse around catheter site
- If catheter is “tunneled” remove suture if present
- Remove catheter in one swift gentle movement
- Check the catheter is intact – the tip should be round and smooth and should measure 10cm from the tip to the first double marking
- If the insertion site shows any signs of infection send the tip to the lab for culture and sensitivity.
- If the catheter appears broken or damaged in anyway – contact the Acute Pain Team or on-call anaesthetist
- **If the catheter tip is NOT present or appears to be broken off** – please inform the patient of this (as it may show up if the patient has a CT or MRI scan in the future). However they are to be reassured that it is an inert piece of plastic which is extremely unlikely to cause any problems at all.
- If the catheter “sticks” or removal is difficult, leave the catheter in situ and call a member of the Acute Pain Team or on-call anaesthetist
- Apply Elastoplast dressing over the puncture site. Leave in situ for 24 hours. Ensure the patient is comfortable

RECORD OBSERVATIONS AT 4, 8, 12 AND 24 HOURS POST REMOVAL AS PER REMOVAL CHART (APPENDIX 9)

APPENDIX 8

GUIDELINES FOR THE PREVENTION OF EPIDURAL HAEMATOMAS IN PATIENTS RECEIVING EPIDURAL AND SPINAL (NEURAXIAL) ANAESTHESIA AND ANALGESIA (Excluding Obstetric Patients)

Purpose

Spinal or epidural anaesthesia and analgesia (neuraxial anaesthesia – NAA) can offer advantages to many surgical and trauma patients requiring anaesthesia and pain relief. However the use of NAA in conjunction with anticoagulant drugs or in patients with altered coagulation status can result in the formation of an epidural haematoma. This rare but serious complication occurs with a frequency of approximately 1/150,000 epidurals and 1/220,000 spinals. The consequence for the patient may be permanent paraplegia.

Aim and Scope

The following guidelines cover the safe use of NAA in the presence of potentially altered haemostasis.

They should be followed by anaesthetists, surgeons and nursing staff caring for such patients, in order to minimise the risk of epidural haematoma formation. They apply to the insertion and removal of spinal or epidural needles and catheters.

Definitions

Neuraxial anaesthesia and analgesia (NAA) - insertion of a needle or catheter into the spine for the production of anaesthesia and/or analgesia.

Neurological observations – monitoring lower limb motor and sensory function in patients thought to be at increased risk from epidural haematoma.

CONTRAINDICATIONS TO INSERTION / REMOVAL

- History of coagulopathy
- Anticoagulant drug therapy
 - anti platelet drugs
 - clopidogrel, ticlopidine, prasugrel, dabigatran, rivaroxiban (stop 7 days prior to insertion)
 - fondaparinux, eptifibutide, tirofiban, abciximab (stop 48 hours prior to insertion)
- Warfarin (if INR >1.5)
- Heparin (full anticoagulation)
- Enoxaparin (full anticoagulation)
- Intravenous dextran

Acceptable limits to coagulation tests for NAA

- a) INR < 1.5
- b) KCCT upper limit of normal
- c) Platelets > 80,000

Other Risk Factors For Epidural Haematoma

- Spinal abnormalities
- Technical difficulties with catheter insertion

NSAID therapy and aspirin OR dipyridamole (but not both) is not a contraindication to NAA

THROMBOPROPHYLAXIS AND NAA

Low Molecular Weight Heparin (LMWH) Thromboprophylaxis (ENOXAPARIN).

- Give at least 12 hours before needle insertion
- Give first dose at least four hours post insertion
- Remove epidural catheter 12 hours post dose, four hours before next dose.

Standard Unfractionated Heparin Thromboprophylaxis (CALCIPARIN).

- Give at least six hours before needle insertion.
- Give first dose one-hour post insertion.
- Remove catheter at least four hours post dose and at least one hour before next dose due.

Warfarin Thromboprophylaxis (postoperative orthopaedic patients).

- Check INR / KCCT prior to commencing warfarin.
- Keep INR 1.3 – 1.5 for duration of therapy.
- Remove epidural at appropriate time provided INR <1.5.

Thrombolysis.

- This therapy is potentially dangerous with an epidural in situ. Consultation must take place between senior medical staff with regard to its advisability and the subsequent clinical management.

PATIENTS REQUIRING FULL ANTICOAGULATION WITH AN EPIDURAL IN SITU

Vascular Surgery

- Single dose IV heparin intra operatively
- Establish NAA at least one hour before heparin administration.

Prosthetic Valve in Situ

- Consider advantages and disadvantages of continuing the epidural – seek senior advice.
- Nurse in a high dependency area.
- Anticoagulate using unfractionated heparin.
- To remove catheter-
 - Stop heparin.
 - Check KCCT in six hours.
 - Remove catheter when KCCT within the normal range.
 - Do not restart heparin for at least two hours.

Post-operative PE / DVT

- Nurse in a high dependency area
- Consider removing the epidural before anticoagulation is commenced
- Anticoagulate using unfractionated heparin.
- Remove catheter when KCCT within the normal range and INR<1.5

Haemodialysis

- Consider advantages and disadvantages of continuing the epidural.
- Consult with Renal team.
- Nurse in a high dependency area.
- Check KCCT and platelets post dialysis
- Remove catheter when KCCT within the normal range, INR<1.5 and platelets >80,000

DETECTION OF SUSPECTED EPIDURAL HAEMATOMA

Haematoma may occur with an epidural in situ or after it has been removed.

Haematoma usually presents with inappropriate motor block in the legs which may or may not be accompanied by back or root pain. Bladder and bowel function may be affected.

It is important that a diagnosis is made quickly. **IF A HAEMATOMA IS SUSPECTED, INFORM SENIOR MEDICAL STAFF IMMEDIATELY.** Urgent MRI scan is the only definitive diagnostic test. If positive, contact the Derby Spinal Surgical Consultant urgently, otherwise neurosurgeons (QMC) should be contacted urgently. Immediate surgical spinal decompression should be performed in order to try and prevent or minimise permanent neurological damage.

See appendix 10

NEUROLOGICAL OBSERVATIONS

- Record epidural observations as guidelines recommend whilst epidural in situ.
- Record observations four hourly for 24 hours and then at 24 hours post removal on **all** patients using designated observation chart. (Appendix 9)
- Increase frequency in high-risk patients e.g. those who are anticoagulated.
- Inform on call anaesthetist or Acute Pain Team immediately of abnormal motor or sensory loss.

APPENDIX 9**RDH NURSING OBSERVATION CHART FOLLOWING REMOVAL OF EPIDURAL CATHETER**

Addressograph label

Ward _____

Surgeon _____

Anaesthetist _____

Operation _____

Date / time last dose Thromboprophylaxis	
Date / time epidural infusion stopped	
Date / time epidural catheter removed	
Date / time transferred to ward	
Alternative analgesia prescribed	

Observations

Observation	4 hours	8 hours	12 hours	24 hours
Pain score on: Rest				
Deep breathing / coughing				
Movement				
Respiratory Rate				
Sedation Score				
Oxygen saturation				
Numbness (y / n) R				
(y / n) L				
Leg Weakness (y / n) R				
(y / n) L				
Radicular back pain State type / contact pain team				
Signature				

CONTACT THE ACUTE PAIN TEAM / ED1 FOR FURTHER ADVICE IF YOU ARE UNSURE ABOUT RECORDING THE ABOVE OBSERVATIONS OR RESULTS

APPENDIX 10

Procedure to be followed if Epidural Haematoma / Abscess Suspected

