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**ACUTE PAIN SERVICE**

**PROTOCOL FOR WARD-BASED EPIDURAL ANALGESIA at the  
RVI and NGH**

**Introduction**

Epidural analgesia offers the possibility of very good quality pain relief with few unwanted effects. There are, however, serious possible unwanted effects. These need to be carefully looked for if epidural analgesia is to be safely provided on the ward. These guidelines are intended to set out our approach to making sure that ward-based epidural analgesia is effective and safe at the RVI.

**Patient selection**

Consent from the patient must be received. As part of this process there should be a discussion about the risks and benefits of the technique by the Anaesthetist. Most patients who receive epidural analgesia on a ward will have had major surgery, and the epidural will have been commenced peri-operatively by the anaesthetist. Occasionally patients may benefit in other circumstances, for example after closed chest trauma. The decision regarding postoperative analgesia will have been made by the anaesthetist concerned, but in general, the more major the surgery, and/or the less fit the patient, the more likely they are to benefit from epidural analgesia. Epidural analgesia is not the most appropriate choice for fit patients undergoing minor or intermediate surgery (e.g. vaginal or abdominal hysterectomy) in our particular circumstances. Anaesthetists in training should discuss the appropriateness of the technique with a Consultant Anaesthetist.

**Cautions**

Patients receiving epidural analgesia (EA) must only be nursed on wards **36, 40, 44, 46, 47, HDU & ITU** at the **RVI** and **ITU** at **NGH**.

The ward staff must be happy to receive the patient with EA, and there should be a member of staff on each shift on the ward who is trained in the care of EA patients.

**Age:** This document refers only to adult patients. In adults there is no upper age limit for epidural analgesia, indeed it may be particularly indicated in the elderly.

## Contraindications to epidural analgesia:

**Hypovolaemia:** If uncorrected this contraindicates epidural analgesia

**Sepsis:** Systemic sepsis is a contraindication, because of the risk of epidural abscess formation. If a patient has been septic, but has been receiving appropriate antibiotics and is currently afebrile then there should not be a problem. If a patient with EA becomes septic, then this is a cause for concern. The risks of epidural abscess formation are small but must be considered. If in doubt contact a member of the Acute Pain Team.

### **Clotting abnormalities**

No patient who has grossly disordered clotting or who is formally anticoagulated should have EA. This is because of the risk of epidural haematoma. The risks to patients receiving low-dose perioperative heparin are less clear. The following guidelines are suggested:

- **Prophylactic low-dose unfractionated heparin (5.000 iu s/c b.d.):**

The first dose should ideally be given at least 1 hour after the epidural catheter has been inserted (longer if there is a bloody tap at insertion). If the patient is already on the regime, then the epidural should be performed **at least 4 hours after a dose of heparin**. The catheter should not be removed until at least 4 hours after a dose.

- **Prophylactic low molecular weight heparin e.g. tinzaparin**

This should be given after the insertion of the catheter as above. If the patient is already on the regime then the epidural should be inserted **at least 12 hours after a dose**.

### Anti-platelet drugs

- **Clopidogrel**

Patients who take Clopidogrel must be advised to **discontinue the drug 7 days prior to surgery**. Further advice should be sought regarding other anti-platelet drugs

- **Aspirin therapy.**

300mg or more of aspirin a day is a contraindication to epidural analgesia. If felt to be particularly indicated then the effects can be assessed with a formal bleeding time (performed by the department of haematology). Lower doses of aspirin (eg

75mg/day) is not a contraindication. The risk/benefit of epidural analgesia in patients on low-dose aspirin and low dose heparin must be considered.

- **Other NSAIDS.**

Other NSAIDS have a similar effect to aspirin but to a lesser extent. The whole situation must be considered

As a generalisation, we must be particularly vigilant in patients with EA who are receiving any of the above therapies, so that we can detect and treat an epidural haematoma early, before permanent neurological damage occurs.

**Any patient with an epidural who develops new or increasing motor block (leg weakness) must be urgently referred to the pain service or the on-call anaesthetist.**

### **Epidural insertion.**

This is a matter for the anaesthetist concerned, but in general low thoracic catheter placement (e.g. T10-11) provides satisfactory analgesia for abdominal procedures whilst avoiding motor block of the legs. **Full aseptic precautions must be taken for insertion of indwelling epidural catheters.**

Around **5cm** of catheter should be left in the epidural space to avoid catheters being displaced.

### **Fixation**

A recent audit has identified a problem in that an unacceptable proportion of catheters are coming out unintentionally. We are trying various measures to prevent this. The epidural catheter should be fixed carefully, using a large opsite dressing. The catheter and distal filter should be fixed securely to the patients arm. Consideration may be given to tunnelling the catheter if it is anticipated that the use of the epidural will be prolonged.

### **Drugs/infusion regime**

There are long-term problems with the supply of Diamorphine which would be our opioid of choice for post operative pain management.

We currently use prefilled bags of Bupivacaine 0.125% with fentanyl 4 microgrammes per ml.\*

For Obstetric use, there is a supply of prefilled bags with Bupivacaine 0.1% with Fentanyl 2 Microgrammes per ml.

Please check with a member of the acute pain team for any changes to this.

## Equipment

All epidurals should be instituted with a dedicated epidural pump. This should be clearly identified as such. A standard epidural giving set, incorporating an anti-siphon valve and TWO epidural in-line filters should be used. The epidural should be labelled close to the nearest filter to the patient. The administration set must be considered to be a closed system and not breached for any reason. A yellow stripe indicates epidural tubing.

## Ward Management

For EA to be safe, constant vigilance and awareness of the possible risks are essential. Ward staff should attend training sessions for EA as for intravenous PCA.

The following precautions are necessary:

- **Machine function:** check that the prescription and actual infusion rate are the same. Check that the volume of drug infused is appropriate.
- **Oxygen therapy:** Patients receiving continuous epidural analgesia must be nursed in a setting that allows close supervision appropriate to the clinical circumstances. Oxygen must be available.
- **Intravenous access** must be assured at all times while epidural is in situ.
- **Bladder care:** few patients with epidural analgesia will be able to micturate normally. In general all patients should be catheterised. After the epidural is discontinued the effects on micturition may persist for some time. This should be borne in mind and the patient watched for urinary retention if not catheterised.
- **Mobilisation:** It is desirable for patients with EA to be mobilised as usual. However this may not be possible if there is motor weakness of the legs or if sensation in the legs is not normal, or if the patient's blood pressure falls when standing. The patient must be assessed carefully prior to mobilisation: can he/she lift his/her legs off the bed with no sense of weakness? Is the blood pressure normal sitting up? If the answer to both these questions is 'yes', then the patient should try to mobilise with two attendants. If the patient feels dizzy then this may be due to a fall in BP. If mobilisation is not possible then call the Acute Pain Team.
- **Concurrent drug therapy**

Some precautions are necessary to avoid a risk of severe respiratory depression.

**No patient receiving epidural opioids should receive opioids by any other route.** NSAIDs or Paracetamol (but **not compound preparations** with opioids e.g. coproxamol) may be given and should be prescribed on a regular not prn basis.

**Do not give night sedation or other sedatives.**

If there are problems with any of this please contact the Acute Pain Service.

### **Other observations:**

The following routine observations are necessary and should be charted on the epidural chart, as per the instructions on the chart:

- **Pain score:** as per chart. If pain relief is unsatisfactory check that the bag is not empty and the catheter is not disconnected. For these problems please call Acute Pain Team. Call the pain service if pain score is 5 or higher.
- **Sedation score:** Sedation may herald serious respiratory depression. If the sedation score is two, call the pain service. If the sedation score is three, stop the pump, call the pain service or on-call anaesthetist immediately, give oxygen by face mask, and consider giving iv naloxone (100mcg in increments to a total of 400mcgs). For respiratory arrest call the Cardiac Arrest team and initiate CPR.
- **Motor block:** The local anaesthetic may affect the motor nerves to the legs. We aim to avoid this by siting the catheter away from the motor nerves to the legs and by using low doses of local anaesthetic. Motor block hinders mobility, but increasing motor block when the infusion has not been changed may be a serious sign; it may be caused by catheter migration into the CSF, or by epidural abscess or haematoma formation. If motor block is dense (patient has difficulty moving legs) or increasing, stop the infusion and call the Acute Pain Team or on-call anaesthetist immediately.
- **Block height:** The upper level of numbness must be monitored so that a block which is too high and/or spreading upwards is detected before the respiratory muscles are affected. This is most easily done by looking for the response to cold (e.g. ice). The ice is moved upwards from a numb area towards the chest and the patient asked when the sensation starts to feel cold. This is the height of the block. If this is above T5 there may be interference with the heart rate or blood pressure control. If the block height is above T5, or the block height is increasing inappropriately, stop the infusion and call the Acute Pain Team or the on-call anaesthetist.
- **Respiratory rate:** if the respiratory rate is below 8/min then stop the infusion and call the Acute Pain Service or anaesthetist immediately. Give oxygen by face mask, consider naloxone and initiate CPR as appropriate.
- **Hypotension:** Epidural analgesia may impair the patient's normal response to hypovolaemia and bleeding. Because the heart rate may not increase it will be a poor indicator of intravascular volume. If a patient's blood pressure is low, stop the epidural and speed up the intravenous infusion as per the instructions on the epidural chart. Suspect a surgical cause for the hypotension, particularly if the block height is below T5. Give oxygen by face mask and consult medical help.

### **Other problems.**

- **Itching:** This can be caused by the opioid component of the infusion. If mild-reassure the patient. Otherwise call the acute pain service.
- **Machine alarms:** stop infusion (and alarm) and call the Acute Pain Team.

### **Acute pain service review:**

All patients receiving EA should be reviewed as required by the Clinical Nurse Specialist in acute pain or the members of the Acute Pain Team. At weekends this will be the responsibility of the first-call anaesthetist.

**Removing epidural catheters** Consideration must be given to the patients coagulation status prior to removal of the catheter. These should not be removed until 12 hours after last dose of Tinzaparin or 4 to 6 hours after subcutaneous Heparin. For further advice consult the acute pain team.

### **Bishop ward patients:**

Patients on this ward should be managed in the same way as for the rest of the hospital. In particular all patients should have continuous pulse oximetry and the door left ajar if they are in side rooms. The supervision and management of the epidural is the responsibility of the initiating consultant anaesthetist; however the acute pain service will assist in the management at the request of the responsible consultant. Please note that trainee anaesthetists are expected to be available for these patients in an emergency.

For further information, training or comment please contact the Acute Pain Team.

### **References:**

[Good practice in the management of continuous epidural analgesia in the hospital setting](#) - Association of Anaesthetists of Great Britain and Ireland - 2004

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