Health
Western Sydney
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NSW GOVERNMENT

Procedure

Continuous intrathecal infusions for the management of cancer pain

Document details

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Contact details

Contact name	Suzanne Pagett CNC Acute Pain Service Westmead Hospital
Contact details	Email:WSLHD-WestmeadnursingP&Pcommitee Phone: 9845 5555 page 9905
Contact location and department	Westmead Hospital - Acute Pain Service / Anaesthetics Department
Endorsed by	Danielle Levis Dr Richard Halliwell
Service/Department	Nursing & Midwifery

Introduction

This procedure details the management of adult patients receiving continuous intrathecal infusions for the management of cancer pain. This modality of analgesia may be necessary for those patients who cannot have their pain controlled adequately with conventional forms of analgesia or for those who experience intolerable adverse effects to conventional analgesic regimes.

Scope of practice

This procedure applies to health professionals who are involved in the care of patients with continuous intrathecal analgesic infusions.

Definitions/ Abbreviations

APS	Acute Pain Service
LV Infusor	Large Volume Infusor
RN	Registered Nurse
EN	Enrolled Nurse
NIMC	National Inpatient Medication Chart
CSF	Cerebrospinal Fluid
PRN	As required

Intrathecal catheter insertion

- Intrathecal catheters are inserted by an anaesthetist in the operating suite under sedation or general anaesthesia
- The intrathecal catheter is inserted at the appropriate level of the spine according to the patients' predominant site of pain The catheter is then tunnelled subcutaneously through a series of puncture sites to exit on the anterior abdominal wall (catheter exit site). The catheter is secured with an anchor suture which is made of long lasting suture material.

Care of sutures

- The subcutaneous puncture sites are sutured and covered with an occlusive dressing for 7 days post insertion
- After 7 days the dressings and sutures from the puncture sites are removed. If skin union is good these sites can be left uncovered, if not they should be steri-striped and reviewed again in 3 days.

- **The anchor suture securing the intrathecal catheter in place on the abdominal wall should not be removed**

Administration

- Intrathecal infusion bags for delivery via an infusion pump are made up in the hospital pharmacy department under laminar flow conditions. The Large Volume (LV) Infusors are made offsite by Baxter Pharmaceuticals. The intrathecal solutions are prescribed by the Acute Pain Service (APS)
- Initially the intrathecal infusion is delivered via a dedicated yellow epidural pump clearly labelled "Intrathecal". The giving set has a yellow stripe and is portless.
- Infusions are delivered at the rate prescribed by the anaesthetist on the Epidural Observation Chart (SWHR - 2177)
- LV Infusors are a portable delivery elastometric pump that deliver a set rate dose and can provide a 7 day supply of infusion solution. These infusors need to be stored in the supplied carry bag at all times. The LV Infusor should not be exposed to extremes of temperature including direct sunlight, heating devices such as radiators or electric blankets, or in clothing pockets next to patients' body. The infusor should be carried at approximately the same height as the insertion site.

Observations

- Observation of the patients' pain score (rest and dynamic), sedation level, respiratory rate, blood pressure and pulse rate should be documented on the Epidural Infusion observation chart (SWHR - 2177) hourly for the first 6 hours after commencement of an intrathecal infusion then second hourly until otherwise ordered by the APS or treating Palliative Care team
- Patients temperature should be checked at least once daily. Temperatures above 38.5 degrees should be reported to the treating palliative care team
- Whilst the intrathecal infusion is delivered via a bag and pump, the infusion delivery rate should be checked and documented on the same chart whenever the observations are done and on change of shift
- If the infusion is being delivered via an LV Infusor the bottle should be checked once a day to ensure balloon size is decreasing

Management of inadequate analgesia

When intrathecal infusion is delivered via a bag / pump system:

- If the patient has pain an intrathecal bolus dose can be administered

if ordered on the Epidural Infusion observation chart (SWHR - 2177) by the APS.

- A bolus dose can only be administered by an RN who has completed the intrathecal bolus dose competency assessment
- A second RN or EN must witness and countersign for the delivery of the bolus dose
- The bolus dose and time delivered should be recorded on the Epidural Infusion observation chart (SWHR-2177)
- Following an intrathecal bolus dose the patient should have their blood pressure, pulse rate, sedation level and respiratory rate observed and recorded every 5 minutes post delivery of the bolus for 20 mins unless otherwise ordered by the APS / Palliative Care team
- Patient's pain should be reassessed 30 minutes post intrathecal bolus dose. If the patient still has pain the second line analgesic prescribed for breakthrough pain on the NIMC should be administered. If the patient remains in pain 30 minutes post administration of the second line analgesic the APS anaesthetist should be contacted

When intrathecal infusion is being delivered via an LV Infusor:

- Administer PRN analgesia as charted on the NIMC

Assessing motor block prior to mobilisation

- Many patients receiving intrathecal analgesia will have impaired mobility prior to the insertion of the intrathecal catheter either due to their disease state or from general de-conditioning associated with their illness
- Once an intrathecal infusion is commenced the local anaesthetic in the solution can cause some motor block of the lower limbs. This needs to be assessed whilst the patient is in bed, prior to attempts to mobilise to prevent the patient falling. Whilst in bed asking the patient to straight leg raise is a good way to assess lower limb strength. If unsure have a physiotherapist assess the patient.
- Even if lower limb function is normal on assessment it is advisable to have at least 2 assistants to supervise the patient moving out of the bed to mobilise as the patient may experience some postural hypotension on standing.

Changing an intrathecal <u>infusion bag</u> (when infusion is being delivered via an epidural pump)

Equipment:

- Dressing pack
- Chlorhexidine 0.5% in Alcohol 70% solution
- Sterile gloves
- Intrathecal solution bag

Method:

- Check new intrathecal solution, prescription and patient details to ensure the 5 rights principle of medication administration are followed in accordance with Medication Handling in Public Health Facilities Policy PD 2013-043 [1].
- Hang new solution bag on pole next to existing bag
- Wash hands
- Open dressing pack, sterile gloves, pour chlorhexidine and alcohol solution into dressing pack tray
- Aseptic hand wash, don sterile gloves
- Clean around giving set connection to the existing solution bag with 3 chlorhexidine and alcohol soaked guaze squares, allow 60 seconds for the solution to dry
- Using a non touch technique remove giving set from current infusion bag and spike giving set into new intrathecal solution bag
- Re-set pump as for new container with appropriate volume. Change infusion rate as ordered if necessary
- Sign for the administration on the National Inpatient Medication Chart (NIMC)
- If necessary, discard any remaining solution in accordance with Handling of Medication in NSW Hospitals Policy PD2007_077. [1]

Changing an intrathecal infusion bag and giving set (when infusion is being delivered via an epidural pump)

This must be done at least weekly and whenever the solution drugs and or doses are changed

Equipment:

- Dressing pack
- Chlorhexidine 0.5% in Alcohol 70%
- Sterile gloves
- Intrathecal solution bag
- Epidural pump giving set

Method:

- Check new intrathecal solution, prescription and patient details to ensure the 5 rights of medication administration are followed in accordance with Medication Handling in Public Health Facilities Policy PD 2013-043 [1].

- Hang new solution bag on pole next to existing bag
- Wash hands
- Open dressing pack, sterile gloves pour chlorhexidine and alcohol solution into dressing pack tray
- Using non touch technique and spike new intrathecal solution bag with new giving set. Prime giving set
- Clamp existing giving set, turn delivery pump off
- Wash hands
- Remove section of exit site dressing necessary to access the connection of the giving set to the catheter filter
- Aseptic hand wash, don sterile gloves
- Clean around connection of giving set to catheter filter with 3 x chlorhexidine and alcohol soaked guaze squares, allow solution 60 seconds to dry
- Disconnect old infusion giving set and attach new one
- Resecure exit site dressing
- Re-set the delivery pump ensuring delivery rate and volume of bag are correct for the new infusion This needs to be checked by a second nurse (RN or EN)
- Start new intrathecal infusion
- Sign for the administration on NIMC
- Discard any remaining solution in accordance with Handling of Medication in NSW Hospitals Policy PD2007_077. [1] if necessary

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Change of intrathecal exit site dressing

This needs to be done weekly

Equipment:

- Dressing pack
- Chlorhexidine 0.5% in Alcohol 70% solution
- Sterile gloves
- Comfeel® Plus transparent dressing (10x10cm)
- Hyperfix™ or Fixomul™ tape

Method:

- Wash hands
- Open dressing pack, sterile gloves pour chlorhexidine and alcohol solution into dressing pack tray
- Gently remove existing exit site dressing being careful not to apply tension on the intrathecal catheter or anchor suture
- Clean exit site with 3 x chlorhexidine and alcohol soaked gauze

squares in a circular motion cleaning from the inside out, covering the area that will be under the Comfeel® dressing

- Observe site for any signs of infection
- Observe integrity of anchor suture **(Do not remove anchor suture)**
    - Allow 60 seconds for the solution to dry on the skin
- Apply Comfeel® dressing to exit site ensuring catheter is not kinked
- Cover area with Hyperfix™ or Fixomul™ ensuring catheter is secure and not kinked

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Changing the LV Infusor

Equipment:

- Dressing pack
- Chlorhexidine 0.5% in Alcohol 70% solution
- Sterile gloves
- LV Infusor (+ thermal bag)
- Hyperfix™ or Fixomul™ tape

Method:

- Remove LV infusor from plastic outer bag checking content of infusor matches patient details and order prescribed. Check the delivery rate written on the luer lock connection of the LV infusor matches the prescribed delivery rate
- Ensure the 5 rights principle of medication administration are followed in accordance with Medication Handling in Public Health Facilities Policy PD 2013-043 [1].
- Wash hands
- Open dressing pack, sterile gloves pour chlorhexidine and alcohol solution into dressing pack tray
- Remove dressing enough to allow access to the connection of the existing giving set to the intrathecal filter
- Aseptic hand wash, don sterile gloves
- Clean around connection of the giving set / line to the filter 3 times with chlorhexidine and alcohol soaked guaze squares
- Allow 60 seconds for solution to dry
- Disconnect existing line, reconnect new LV Infusor line
- Resecure exit site dressing
- Sign for the administration on NIMC
- Discard any remaining solution in accordance with Handling of

Medication in NSW Hospitals Policy PD2007_077. [1] if necessary

Change of antimicrobial filter

This needs to be done monthly

Equipment:

- Dressing pack
- Chlorhexidine 0.5% in Alcohol 70% solution
- Sterile gloves
- Epidural antimicrobial filter
- Comfeel® plus transparent dressing (10 x10cm)
- Hyperfix™ or Fixomul™ tape

Method:

- Wash hands
- Open dressing pack, sterile gloves pour chlorhexidine and alcohol solution into dressing pack tray
- Remove exit site dressing being careful not to apply tension to intrathecal catheter
- Aseptic hand wash, don sterile gloves
- Clean around connection of intrathecal catheter to filter 3 times with chlorhexidine and alcohol soaked guaze squares
- If changing Intrathecal giving set / line connect line to new filter
- Allow 60 seconds for solution to dry
- Disconnect old filter from the intrathecal catheter
- Connect new filter using luer lock action
- Complete exit site dressing

Risk rating

Risk rating

Risk category(s): Clinical care and patient safety

Risk rating: The following risks of procedure non-compliance leads to a risk rating of medium:

-Patients pain is poorly controlled

-Adverse effects related to erroneous drug administration

-Patient develops an infection related poor aseptic technique when changing intrathecal solutions, lines, filters or dressings

Educational notes

- Most patients with cancer pain achieve good analgesia using traditional analgesics and adjuvant medications however an important minority of patients (2-5%) suffer from severe and refractory cancer pain. For these individuals spinal analgesics (intrathecal or epidural) provide significant hope for pain relief to improve the quality of their life. [3]
- Intrathecal (or subarachnoid) administration deposits drugs into the cerebrospinal fluid (CSF) inside the thecal sac, enabling direct access of drug to the substantia gelatinosa cells in the dorsal horn of the spinal cord. [4]
- Intrathecal drug administration permits the use of considerably lower doses than any other route of administration. Equivalent or superior analgesia is achieved with reduced systemic effects. [4]
- Intrathecal drug delivery can offer rapid and effective analgesia with less toxicity related to other routes of administration. Intrathecal drug delivery can be highly effective in a variety of patient settings including cases of refractory pain, poor tolerability of oral medications, polyanalgesia for complex pain and intolerable adverse effects to analgesia. [5]
- Intrathecal catheters and delivery devices must be clearly identified to ensure they are clearly distinguished from the intravenous route of administration. [5] If a pump and line are used for intrathecal drug administration a yellow epidural pump clearly labelled "Intrathecal" is used with a yellow striped portless giving set.
- Strict aseptic technique must be used when interrupting the intrathecal system in anyway as this route has direct access to the CSF. Infection of the CSF could be life threatening. The patient and their carers should be educated and prompted to report any signs or symptoms of epidural space infection or meningitis including pain at intrathecal insertion site, headache, photophobia, neck stiffness.

References and related documents

1. Medication Handling in NSW Public Health Facilities –PD2013-043
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5. Stearns L, Boortz-Marx R, Du Pen S, Friehs G, Gordon M, Halyard M, Herbst L, Kiser J. Intrathecal drug delivery for the management of cancer pain: a multidisciplinary consensus of best clinical practices. J Support Oncol. 2005 Nov-Dec; 3 (6):399 – 408
6. Macintyre, P.E. & Schug, S.A. (2007). **Acute pain management a practical guide.** 3rd ed. Saunders Elsevier: Edinburgh

Version History

Date	Version	Change details	Author
19/12/2011	1.1	Original	Suzanne Pagett
24/1/2012	1.2	Grammatical corrections	Suzanne Pagett
14/5/2012	1.3	Grammatical corrections following input from Karen Blunden and David Pearce	Suzanne Pagett
14/06/2012	1.4	Definition of enrolled nurse clarified	S.Pagett / E.Edmonds
10/6/2014	1.5	Information related to "GemStar" epidural pump removed. Updated and changed into new template	S.Pagett
11/6/2014	1.6	Grammatical and format improvement	S.Pagett L. Cope