DECONTAMINATION OF TUNNELED HAEMODILAYSIS CATHETERS

LIMITATIONS OF PRACTICE

- This procedure is attended by haemodialysis staff from 4 West during the hours of 0700 - 2100 Monday to Saturday. It may be necessary to transfer the patient to the unit for the procedure. The Vascular Access CNC is also available to assist with the procedure during normal working hours. Please contact on page 310.

MEDICATIONS REQUIRED

- Aztreonam 2gms
- Vancomycin 1gm
- Actilyse 10mg
- Heparin 5000 units in 1ml (25000 units in 5ml).
- Vancomycin 500mg or Gentamicin 80mg/2ml for lock (Depending on culture sensitivities).

NB the entire protocol is carried out using aseptic non touch technique on a

Step 1 – Aztreonam: (Set up for step 1 and step 2 at the same time)

1. Don a face shield or mask.
2. Attend a procedural hand wash for 60 seconds.
3. Clean trolley with detergent.
4. Gather equipment.
5. Attend a procedural hand wash for 60 seconds.
6. Prepare the following equipment on a critical aseptic field.
   Dressing pack
   Betadine solution
   Extra gauze x 2
   Sterile gloves x 2
   Drawing up needles x 2
   Vial needles x 2
   2 x 3 ml syringes
   2 x 10 ml syringes
   2 x 10 ml of normal saline
   2 x 10 ml of water
   Agilia pumps x 2
   Agilia lines x 2
   2 x Normal saline 100ml bags
7. Perform a 3 minute hand wash and don sterile gloves.
8. Soak the Combi locks (bungs) with betadine*. Do not use alcohol-based antiseptics on the catheter.*
9. Remove the Combi locks, attach 2ml syringes, and withdraw 2.5 ml from each lumen and discard. This is necessary to withdraw the heparin lock.
10. Prepare Aztreonam and inject 1g/10 mls of Aztreonam into each lumen over 3-5 minutes and then flush lumen with 5ml normal saline.
11. **(Do not discard sterile field as it can be used in step 2)**

Step 2 – Vancomycin:

1. Prepare the 2 x Agilia infusion pumps
2. Attend a procedural hand wash for 60 seconds and don gloves
3. Reconstitute each vial of vancomycin 500mg with 10ml of normal saline.
4. Using a non-touch sterile technique, load each 500mg/10ml of Vancomycin into 100ml normal saline 0.9% bags (500mg into one bag and 500mg into the other).
5. Prime both lines using a sterile non-touch technique, ensuring there is no air in either line – clamp each line one primed.
6. Using a sterile non-touch technique, connect one infusion line to each lumen and unclamp each lumen.
7. Load each line into an Agilia infusion pump
8. Set the infusion device to infuse the vancomycin over 120 minutes, ie 50mls/hour [Rate = 50mls/hr, Volume 50 mls]

Step 3 – Actilyse:

1. Don a face shield or mask.
2. Attend a procedural hand wash for 60 seconds.
3. Clean trolley with detergent.
4. Gather equipment.
5. Attend a procedural hand wash for 60 seconds.
6. Prepare the following equipment on a critical aseptic field
   Dressing pack
   Betadine solution
   Extra gauze
   Sterile gloves
   Drawing up needles x 2
   23g needle
   2 x 3 ml syringes
   2 x 10 ml syringes
   2 x 10 ml normal saline
   2x Combi locks (bungs)
7. Soak the connections with betadine*. Do not use alcohol-based antiseptics on the catheter.*
8. Perform a 3 minute hand wash and don sterile gloves.
9. Prepare Actilyse using the 10 ml water for injection and 2 x 10 ml flushes
10. Load 1mg (1ml) Actilyse into each of the 3ml syringes and fill syringes to the remaining lock volume with normal saline. The lock volume of each lumen is displayed on the catheter.
11. Disconnect infusion lines from vascath using an aseptic non-touch technique and flush each lumen with 10 ml normal saline.
12. Inject Actilyse lock into each lumen.
13. Attach Combi locks and stickers to the ends of the lumens to alert staff that the catheter is primed with Actilyse.
14. Allow Actilyse to remain in lumen for <u>one hour</u>.
15. Discard sharps and waste appropriately.
16. Clean trolley and perform hand hygiene.

Step 4 - Removal of Actilyse after 1 hour and instillation of Antibiotic/heparin lock. (**This lock is also administered following each haemodialysis session.)**

1. Don a face shield or mask.
2. Attend a procedural hand wash for 60 seconds.
3. Clean trolley with detergent.
4. Gather equipment.
5. Attend a procedural hand wash for 60 seconds.
6. Prepare the following equipment on a critical aseptic field
   Dressing pack
   Either 80mg/2ml gentamicin or 500mg vancomycin
   1 x 25000 units/5ml heparin = 5000units/1ml
   2 x 10 ml syringes
   2 x 10 ml normal saline
   4 x 3 ml syringes
   2 drawing up needles
   2 x new sterile Combi locks

   NB: <u>When preparing for a vancomycin lock, include on the sterile field</u>:
   1 x 10 ml water for injection
   1 x 18g sharp needle
   2 x 10 ml syringes for dilution of vancomycin
   1 x 10 ml normal saline

7. Place blue sheet under patient's vascath lumens.
8. Don unsterile gloves.
9. Using the yellow forceps, soak 2-4 pieces of gauze in the Betadine solution.
10. Wrap and rub in the Betadine gauze around the arterial and venous ends of the vascath and around each clamp. Leave to soak for a minimum of 3 minutes.
11. Position trolley in close proximity to the patient.
12. Perform a 3 minute hand wash with antimicrobial hand wash and don sterile gloves.
13. Prepare saline flushes using the 2 x 10ml syringes
14. Prepare the antibiotic lock as per <u>Anticoagulant/Antibiotic Vascath Lock: Post Haemodialysis protocol.</u>
15. Unfold the sterile towel on the dressing field and leave it within reach.
16. Using a aseptic non touch technique, lift the vascath lumens with one blue forcep and then use the 2nd forcep to remove the betadine soaked gauze from the lumens. Discard the 2nd forcep. Place the sterile towel on the patient's chest, then place vascath lumens onto the sterile towel and discard the remaining forcep.
17. Hold the arterial lumen with sterile gauze and with the other hand using another piece of sterile gauze, remove and discard the cap from the lumen. Attach a 3mL syringe.
18. Using sterile gauze, unclamp the arterial lumen and withdraw the **Actilyse lock** (the volume within the lock is written on each lumen of the catheter).
19. Using sterile gauze, reclamp the arterial lumen and disconnect and discard the 3mL syringe.
20. Attach the 10ml syringe containing saline to the arterial lumen, unclamp the lumen using sterile gauze, hold the 10mLsyringe plunger side up (allows air to

rise to back of syringe and prevents it being given), draw back slightly to remove air and then flush using turbulent flow. Use sterile gauze to reclamp arterial lumen and assess arterial lumen patency at this time.

21. Repeat the steps 12-15 for the venous lumen of the vascath.
22. Discard equipment and waste appropriately.

<u>This lock will remain in situ until the next dialysis session</u>.

Examples:

<u>This is the procedure for setting up a Gentamicin/heparin lock for a Bard 19cm catheter</u>.

[Gentamicin 20mg (10mg per lumen) and Heparin 19,000 units/catheter]

- 20mg of Gentamicin (80mg in 2ml) is required for the lock (10mg/ml per lumen).
- Drawn up 0.25 mls gentamicin (= 10mg) in each of the 3 ml syringes.
- Slowly add heparin 5000units in 1ml up to the total volume of each lumen (eg 2.1ml and 2.2ml).
- NB: Mixing gentamicin and heparin must be done slowly using a back and forward motion to prevent precipitation of the medications

<u>This is the procedure for a Vancomycin/heparin lock for a Bard 19cm catheter</u>.

[Vancomycin 5mg (2.5mg per lumen) and Heparin 17,500 units/catheter]

- Dissolve vancomycin 500mg in 10ml of water for injection = 50mg/ml.
- Inject 1ml into a 10ml syringe and add 9ml of normal saline = 5mg/ml.
- Draw up 0.5ml (2.5mg) into each of the 2 x 3ml syringes and add heparin 5000 units/ml up to a total volume of each lumen (eg 2.1ml and 2.2ml).

NB: the amount of heparin drawn up will depend on the length of the catheter and the length of each lumen. The length of each lumen is displayed on the side of each lumen.

To check for amounts of antibiotic and heparin for different catheter lengths, please refer to the St George Hospital Renal Department Protocol for:

<u>Anticoagulant/Antibiotic Vascath Lock: Post Haemodialysis</u>.