

INSERTION AND CARE OF ARTERIAL AND CENTRAL VENOUS LINES

Insertion of Arterial Line

Procedure:

Arterial lines are used for continuous monitoring of blood pressure and sampling of arterial blood. The cannula is inserted into a peripheral artery, the radial artery being the site of choice.

Gather necessary equipment (box for a-line insertion in stock room)

Nursing actions:

1. Inform patient of procedure
2. Run through flush bag in aseptic manner, pressurize to 300mmHg
3. Zero arterial line, before attaching to patient
4. Assist medical staff as required
5. See care of Arterial Lines for management

Obtaining Arterial Line Sample:

Procedure:

- Silence monitor alarms
- Put on non-sterile gloves
- Remove obturator and swab exposed sample port
- Once port dry, attach 2ml syringe to port and turn three way tap to allow direct arterial sampling
- Withdraw and discard 2ml of blood/flush from line (using three way tap to prevent leakage)
- Obtain sample from port to ABG syringe, expel air bubbles using cotton wool and cap sample
- Using the flush device, flush remaining blood from port onto cotton swab, discard cotton swab and apply fresh obturator to 3 way tap
- Using the three way tap return the blood in a-line to the patient observing for and leakage or blanching around a-line site
- Reset alarms

Care of Arterial Line:

1. At start of shift Zero the Arterial line to the Phlebostatic axis and compare a non invasive to invasive blood pressure to gauge accuracy of invasive monitoring
2. Observe at least each shift the condition of the skin around the a-line insertion point, report any abnormalities
3. Dress A-line using strict aseptic technique, every three days unless visibly contaminated, or dressing loose
4. Ensure pressure bag remains at 300mmHg
5. Regularly check limb colour, sensitivity and movement, chart in care plan and report abnormalities
6. If infection suspected swab inform medical staff

Potential Complications:

- Haemorrhage/exanguination
- Infection
- Embolisation
- Inadequate circulation to limb
- Thrombus formation

**ARTERIAL LINES SHOULD NEVER HAVE DRUGS
INJECTED INTO THEM**

Insertion of Central Line/PA catheter

Procedure:

Central lines and PA catheters are used for continuous monitoring of cardiac pressures, drug administration and sampling of venous blood. The most common sites for the insertion of a invasive lines are either the sub-clavian vein or internal jugular, though other sites can be used, i.e., brachial vein or femoral vein.

The nurse's responsibilities for this procedure are to monitor the patient while the doctor is inserting the line and be aware of the complications that can arise during the procedure.

Central line box available with all equipment required for insertion of line.

Nursing actions:

- Inform patient of procedure
- Run through flush bag in aseptic manner, pressurize to 300mmHg
- Zero lines, before attaching to patient
- Assist medical staff as required
- See care of Invasive Lines for management

Care of Invasive Line:

- At start of shift Zero the central line to the Phlebostatic axis
- Observe at least each shift the condition of the skin around the insertion point
- Dress central line using strict aseptic technique every three days or more regularly if dressing loose or contaminated
- Ensure smart site adapter on each lumen of 3 way tap
- Ensure pressure bag remains at 300mmHg
- Inform medical staff if skin looks infected or red and if there are problems obtaining an accurate trace
- If infection suspected inform medical staff
- Assess daily need for central line

LUHD Critical Care Directorate - Guidelines

Pulmonary Artery Catheter:

- As for Central Line
- Ensure balloon is deflated at all times, ask NIC for further information.
- Apply Tegaderm to PA catheter and protective sheath too maintain sterility if accidentally removed
- Monitor ECG closely and report abnormalities (PA catheters can be responsible for cardiac arrhythmias if incorrectly sited)

Potential Complications:

- Infection
- Trauma
- Pericardial Tamponade
- Haemo/pneumothorax
- Pain

Patient Education:

If patient is awake it is important that they are aware of the line and not to pull at it or move suddenly when it can catch on pillows, the bed etc. Full information of what the line is for and its benefits should be explained to the patient.