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ARTERIAL CANNULATION

Indications:

- Continuous blood pressure measurement is necessary, usually in critically ill patient when the patients have unstable hemodynamics
- Inappropriate to apply pneumatic cuff for NIBP measurement, eg patients with burn, generalized erythroderma
- Frequent blood gas and other blood test are anticipated

Sites:

- Ideal site should have extensive collateral circulation as to maintain viability of tissues if thrombosis occurs
- Radial artery most commonly used in PWH, followed by dorsalis pedis.
- Other sites –femoral, useful especially when peripheral arterial pulses

difficult/could not be palpated eg profoundly shocked patient.

Insertion:

- Aseptic technique – proper hand disinfection with chlorhexidine hand scrub + wear gloves
- Skin prep – we often use alcohol wipes; but preferably gown/glove and prep with chlorhexidine in alcohol (especially when inserting femoral lines)
- LA for awake patient
- Cannula – preferably 20G for adults (IV catheter or specified radial artery catheterization set). 22G if smaller adults, technical difficulty. For femoral line – Seldinger technique, use 18-20G, femoral arterial cannulation set
- Actual inserting technique – differ slightly amongst individual personnel.
- Get tutelage from a skilled doctor and practise
- Secure – suture it down in femoral arterial lines
- Dressing: transparent dressing, eg Tegaderm®. Dry gauze dressing if catheter site oozing

Measurement of pressure:

• Transducer zeroeing: level of transducer should be at mid-axillary line

4th intercostal space
• With increasing distance from the aorta, the waveform tends to be overshoot, ie, higher SBP, lower DBP, but the MAP remains the same

Maintenance:

- Continuous (non-heparinised) saline flush at 3 ml/hr. IMPORTANT! Can only use saline. NO 5% dextrose solution or other solution!
- Daily inspection of insertion site, no optimal time for changing of arterial cannula
- **Arterial lines should be removed as soon as it is not clinically indicated**. *Note: even if the insertion site looks clean, there is no guarantee that the catheter is not infected

Complications:

- Infection
- Bleeding
- Digital ischaemia
- Thrombosis
- Fistula or aneurysm formation