

VENEPUNCTURE

- Venepuncture is the preferred method of blood sampling for term neonates and causes less pain than heel prick
- Comfort and pain management options during procedure include:
 - containment holding
 - parent voice
 - swaddling
 - pacifier if parent choice
 - using sucrose or MEBM

INDICATIONS

- Blood sampling in a baby without indwelling arterial line, or when sampling from arterial line or capillary sampling is inappropriate

EQUIPMENT

- MEBM or Sucrose, sheet for swaddling/comfort holding and pacifier if available
- Alcohol wipe Non-sterile gloves
- Paper towel or disposable towel under limb
- 24G cannula
- 22 G blood sampling needle
- **Do not use a broken needle**
- Sterile gauze/cotton wool to apply to wound post-procedure
- Sharps container and tray

PROCEDURE

- Inform parents and gain consent

Preparation

- Wash hands and wear gloves (see **Infection prevention** guideline)
- Position of baby (immobilisation is crucial to baby's safety whilst undergoing phlebotomy, and to the success of the procedure)
 - skin-to-skin or safely parent held
 - if not possible, swaddle with single limb exposed
 - if baby to be bled on a surface, comfort hold
- Pain relief – expressed breast milk (EBM)
 - if EBM not available, offer sucrose
- Identify suitable vein (typically back of hand or foot)
- Place paper towels under limb to avoid blood dripping onto bed linen

Insertion and sampling

- Apply gentle hand pressure around limb to distend vein
- Clean the puncture site then do not touch again
- Place thumb on skin slightly distal to proposed puncture site
- Hold needle at 10–20° angle and puncture skin
- Advance needle toward vein. Resistance may diminish slightly as needle enters vein and blood will be seen to flow
- Collect required volume taking care to mix but not shake blood
- When sampling complete, release the pressure from around the limb, place gauze/cotton wool over insertion point, but do not apply pressure until needle is out
- Maintain pressure on site until bleeding ceases

Complications

- Inability to obtain specimen due to:
 - inappropriate choice of vein
 - thrombosed vein (due to previous/repeated attempts)

- inexperienced operator
- A baby in shock, cold or dehydrated causing vasoconstriction

Unsuccessful attempts

- Adhere strictly to a limit on number of attempts
- If no satisfactory sample collected after 2 attempts, seek second opinion as to whether to make a further attempt or cancel procedure
- Defer to a more experienced operator
- Venous distension:
 - use warm pack to encourage vasodilation and venous filling
- Transillumination of limb can help identify suitable vein

Avoid:

- Veins close to an infection, bruising and phlebitis
- Thrombosed veins
- Oedematous limbs – danger of stasis of lymph, predisposing to complications e.g. phlebitis and cellulitis
- Areas of previous venepuncture – build-up of scar tissue can cause difficulty accessing vein and result in pain
- Sampling from potential IV infusion site or long line vein (e.g. cubital fossa or long saphenous) whenever possible

Haemolysis risk factors

- Use of larger than 22 G needle, or too large a gauge for vessel
- Drawing blood specimens from IV or central line
- Under-filling tube – ratio of anticoagulant to blood >1:9
- Reusing tubes that have been refilled by hand with inappropriate amounts of anticoagulants
- Mixing tube too vigorously
- Failing to let alcohol/disinfectant dry
- Using too great a vacuum, e.g. using too large a tube or syringe
- Squeezing can cause haemolysis and elevate serum potassium

Completion and organisation

- Keep track of all needles used and dispose of them in sharps container
 - do not re-sheath needle
- Dispose of rubbish and clean tray
- Remove gloves and wash hands
- Label all samples and investigation forms at cot side (and crosscheck with second checker)
- Arrange for transfer of samples to laboratory
- Document in patient notes

SAFETY OF PRACTITIONER

- Wear well-fitting gloves during procedure to prevent contamination from potential blood spills
 - gloves will not prevent needle stick injury, however the wiping effect of glove on needle may reduce volume of blood to which hand exposed
- Discard used needles directly into sharps container – **do not** re-sheath
- Report any incident/accident linked to needle or sharp injury **immediately**, and follow local needlestick injury policy