AL-mustaqbal university

College Of Health and Medical Techniques

Department of kidney dialysis techniques

Haematology

Lab 3

Collection of Blood Samples

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Blood sample collection

Blood sample collection is a crucial medical procedure used to diagnose health conditions and monitor disease progression. This procedure requires precision and skill to ensure patient safety and the quality of the sample.

Methods of Blood Collection from Humans

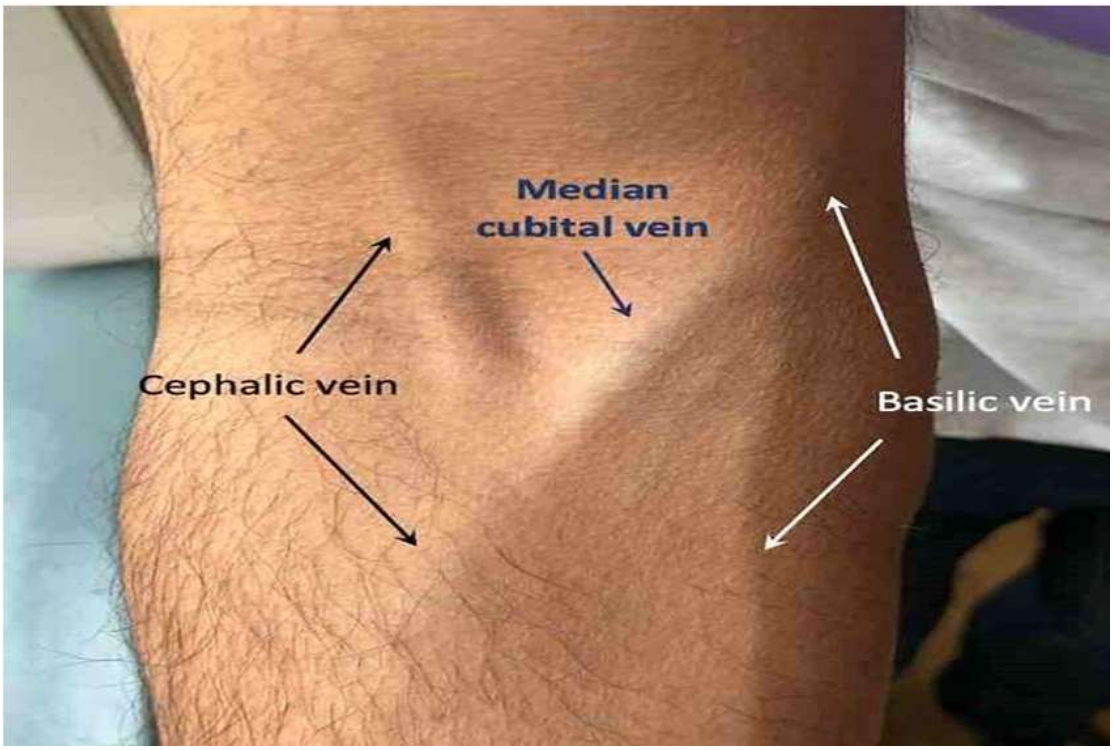
1. Venipuncture

Venous blood is deoxygenated blood that flows from small capillary blood vessels within the tissues into progressively larger veins to the right side of the heart.

Selecting vein site:

1. Median cubital vein
2. Cephalic vein
3. Basilic vein

The median cubital vein in the antecubital fossa is the most commonly used site due to its accessibility and size, followed by the neighboring cephalic and basilic veins.



Required Tools

1. Appropriate blood collection tubes (e.g., EDTA, serum separator tubes).
2. Sterile needle.
3. Tourniquet.
4. Alcohol swabs.
5. Sterile gloves.
6. Adhesive bandage and cotton.

Practical Steps for Blood Collection

A) Preparation

1. Wash hands thoroughly and wear gloves.
2. Select the collection site (commonly the median cubital vein).

B) Procedure

1. **Apply the Tourniquet:**
   - Place it 5-10 cm above the collection site.
   - Ask the patient to make a fist to make the vein more prominent.
2. **Disinfect the Skin:**
   - Use an alcohol swab in a circular motion from the center outward.
3. **Insert the Needle:**
   - Hold the needle at a 15-30 degree angle and gently insert it into the vein.
4. **Collect the Blood:**
   - Attach the collection tube to the needle and allow the blood to flow.
5. **Remove the Needle and Tourniquet:**
   - Once the required amount of blood is collected, release the tourniquet and carefully withdraw the needle.
   - Apply a cotton ball and adhesive bandage to the site.

Complications

Complications are uncommon and includes:

1. Local infection
2. Arterial puncture
3. Hematoma or bleeding
4. Damage to the vein
5. Nerve damage

2. Capillary Blood Sampling

Capillary Blood Sampling: A small puncture is made on the fingertip (or the heel in infants) using a lancet.

Uses:

1. Blood glucose testing.
2. Blood gas analysis in newborns.
3. Rapid diagnostic tests.

Advantages:

1. Simple and relatively painless.
2. Ideal for infants and children.

Practical Steps for Capillary Blood Sampling

A. Preparation

1. Sterile lancet.
2. Capillary tube or test strip.
3. Alcohol swab.
4. Cotton and adhesive bandage.
5. A sharps disposal container.

B. Procedure

1. Choose the Site

- For Adults and Children: Use the sides of the fingertips to minimize pain.
- For Infants and Newborns: Use the heel, preferably the sides, to avoid injury to the bones.

2. Disinfect the Site

- Clean the site with an alcohol swab in a circular motion from the center outward.
- Allow the area to dry to avoid diluting the blood with alcohol.

3. Perform the Puncture and Collect the Blood

- Perform the Puncture:
- Use a sterile lancet to make a small and quick puncture in the skin.
- Avoid deep punctures to reduce pain and injury risk.

4. Encourage Blood Flow

- Gently press around the puncture site to stimulate blood flow.

- Avoid excessive squeezing to prevent mixing blood with interstitial fluid.

5. **Collect the Blood:**
    - Use a capillary tube, test strip, or specialized collection device to gather the required sample.
    - If necessary, use a dropper for transfer to a container or device.
    - Post-Sampling Care
    - Apply gentle pressure to the puncture site with a clean cotton pad.
    - Cover the site with an adhesive bandage if needed.
    - Dispose of the Used Tools
    - Dispose of the lancet and other used materials in a sharps disposal container.
    - Wash your hands thoroughly after the procedure.
    - Important Notes
6. **Gentle Pressure Only:**
    - Avoid pressing too hard to maintain sample quality.
7. **Choose an Appropriate Site**:
    - Avoid areas with sores, scars, or infections.
8. **Keep the Patient Calm:**
    - This is especially important for children to ensure smooth completion of the procedure.