



NURSING PROCEDURE:INTRAVENOUS CANNULATION

Definition:

Intravenous (IV) cannulation is a technique in which a cannula is placed inside a vein to provide venous access. Venous access allows sampling of blood, as well as administration of fluids, medications, parenteral nutrition, chemotherapy, and blood products.

Principles :

- To monitor and assess the IV cannula site and surrounding area atleast hourly or more frequently as required and document the same.
- To apply measures to minimise and/or prevent IV related complications.
- To implement aseptic technique prior to manipulation of IV device and IV system to reduce the risk of infection.

Indications:

- Fluid and electrolyte replacement
- Administration of medicines
- Administration of blood/blood products
- Administration of total parenteral nutrition
- Hemodynamic monitoring
- Blood sampling

Sites for Insertion of Peripheral IV Cannulae:

- Metacarpal veins
- Dorsal Venous network,including the cephalic and basilic veins.
- Antecubital Fossa containing the : Median Basilic,Cubital,Cephalic and Antebrachial veins.
- Axillary Basilic vein
- Long and Short saphenous vein.

Assessing and Preparing the patient:

- Check patient for baseline vital signs, diagnosis and allergies to medication.
- Provide a clear explanation of the procedure including the complications.
- A relaxed patient is generally easier to cannulate.
- Assess the dominant/non-dominant side and check the veins for suitability.
- Check for any contra-indications ex:infection,damaged tissue,AV fistula etc.

Positioning the Patient:

- If possible use the non dominant arm.
- Raise bed prior to procedure.
- Place the arm in a supported comfortable position.
- Use a tourniquet to find vein but release it while you are getting equipment ready.
- Give patient a comfortable position.

Equipment Required:

- Dressing tray*2
- Sterile Gloves
- Cleaning wipes
- Gauze swab
- IV cannula(size depending on need)
- Tourniquet
- Tegaderm
- Syringe 10ml with 0.9% Normal saline
- Sterile dressing pack-to provide a sterile field
- Sharps container

Cannulae:

14G: Large volume replacement

16G: Rapid transfusion of whole blood or components

18G: IV maintenance, NBM patients

20G: IV analgesia

22G: Paediatrics, elderly, chemotherapt patients

24G: Neonates

Procedure:

Action	Rationale
<ul style="list-style-type: none">• Collect all appropriate equipment.• Locate patient and check patient identification.• Ensure the patient is in a comfortable position.• Establish whether patient has allergy to skin preparation solution and adhesive material.• Wash hands.• Select and assemble appropriate equipment for procedure.• Assess venous access and choose appropriate vein.	<ul style="list-style-type: none">• To allow full concentration on patient and procedure.• To minimize the risk of error and ensure the procedure on correct patient.• To avoid any problems to the patient.• To prevent skin irritation.• To prevent cross-infection.• To prevent undue delays.• To optimize the best site for treatment.

- Position patient in supine position with arm at 45 degrees, with ability to move arm at 90 degree angle.
- Put on sterile gloves.
- Remove cap from the extension set and attach 0.9% sodium chloride, gently flush with 2ml and leave syringe attached.
- Clean the insertion site with alcohol swipes from insertion site towards outwards.
- Allow it to air dry 40 seconds.
- Do not palpate the site.
- Apply tourniquet 7-10cm above site.
- Use non dominant hand to achieve skin traction, above or below the insertion site.
- Insert the cannula through the skin at an angle of 10-30 degrees, with the bevel of needle in the upward position.
- As the tip of the cannula enters the vein a flashback of blood will appear in the chamber of the cannula.
- Decrease the angle between the cannula and the skin and advance

- To aid insertion of introducer and then advancement of cannula.
- To minimize risk of infection.
- To prevent spillage and cross infection.
- This rapidly reduces microbial counts on the skin and provides sterile field .
- To provide sterile field.
- To prevent recontamination.
- To encourage venous distension.
- To promote stability of vein to ease for cannula insertion.
- To ensure atraumatic entry and reduce pain.
- To indicate the needle has entered the vein.
- To prevent the puncturing the posterior wall of the vein.

the cannula a further 2mm into the vein.

- Withdraw the stylet slightly and advance the cannula a fully and gently.
 - Remove tourniquet.
 - Apply digital pressure over the cannula tip and remove stylet.
 - Place alcohol swab under the cannula hub.
 - Place stylet in sharp box .
 - Flush catheter.
 - Secure the catheter with adhesive tape.
 - Dispose of equipment appropriately.
 - Wash hands.
 - Document the procedure.
- To prevent the stylet from penetrating the vein.
 - To reduce the blood flow.
 - To prevent the back flow of blood.
 - To absorb blood spillage.
 - To minimize any damage.
 - To ensure the patency of device.
 - To anchor the catheter securely to the skin,preventing movement.
 - To prevent cross infection.
 - To prevent cross infection.
 - To maintain patient records.

Complications that might occur:

- IV infection.
- Cellulites
- Infiltration
- Thrombophlebitis
- Air embolism

After care:

- Document the procedure including:
- Date and time
- Site and size of the canula
- Any problems encountered
- Review date (cannula should be in situ no longer than 72 hours)
- Thank the patient for cooperation.