

IV drip, Routes – Notes and checklists

Sl No.	Checklist for IV infusion	Performed (Yes/No)	Mark
1	Assembled the materials required: Sterile gloves Drip stand, Appropriate drip set (macro/micro) IV cannula with needle of right size IV bag containing correct medication Tourniquet, Alcohol swab, Sterile gauze, Adhesive tape		1
2	Safety concerns: Checked patient's details, prescription, IV bag and expiry date of all items		1
3	Communication with the patient and privacy considerations: Self introduced , Explained the procedure Allayed apprehensions if any, Drew bed-side curtains		1
4	Site preparation: - Performed hand hygiene and wear gloves - Uncovered arm completely and asked the patient to relax. Supported arm - Tied the tourniquet and waited for the vein to swell - Cleaned the site using alcohol swab in firm circular motion and allowed the site to dry		1
5	Process of inserting IV cannula: - Pulled the cap from needle and kept aside - Stabilized the vein by pulling the skin taut in the longitudinal direction of the vein using nondominant hand. (Proximal to the entry point of cannula) - Insert the cannula at an angle of around 25 degrees. - Punctured the skin and moved the needle slightly into the vein.Pushed the cannula 2mm further into the vein. - Looked for blood in flashback chamber - Gradually withdrew the needle and push the cannula little further.Removed the needle while pressing at the site of insertion to prevent bleeding. - Carefully placed the cap back on the needle. Untied tourniquet. Cleaned the end of cannula sticking out of the skin using the alcohol swab.		3
6.	Setting up IV bag and drip set, starting of IV fluid: - Cleaned the entry port of the IV bag with alcohol swab. - Inserted the drip set, Hanged the bag with drip set on the drip stand. - Checked the drip chamber, Removed air bubble from the tubing, Ensured the tip of the tubing does not touch the ground. - Connected the IV tubing with cannula hub, Secured the cannula to skin surface with adhesive tape. - Started the IV fluid. Checked for pain or swelling in area surrounding the cannula. - Set the drop rate of medication using the roller clamp of drip chamber. - Communicated to the patient about completion of procedure. - Removed the gloves and performed hand hygiene.		2
7	Evaluate the patient response: Monitored patient's blood pressure, respiratory rate, heart rate and temperature. Communicate about completion of procedure and ask about any discomfort		1

Sl.No	Checklist for IV route (Use 20 G long needle)	Yes/No	Marks
1	Self-introduction. Confirmed patient, prescription, drug & expiry date.		1
2	Washed hands and worn gloves.		1
3	Reassured, procedure explained, loaded syringe.		1
4	Located site, tourniquet applied.		1
5	Sterilized site.		1
6	Technique - removed air bubble, held needle at 35° angle, with bevel up and punctured.		1
7	Technique - Aspirated, checked for blood and injected.		1
8	Checked for swelling.		1
9	Pressed cotton and applied adhesive tape.		1
10	Cleaned up and dispose waste. Communicate about completion of procedure & thank the patient.		1

Sl. No	Checklist – Intradermal injection	Yes/No	Marks
1	Self-introduction. Confirmed patient, checked prescription, drug & expiry date.		1
2	Washed hands and worn gloves.		1
3	Reassured, procedure explained, loaded syringe.		1
4	Located site.		1
5	Sterilized site.		1
6	Technique - Removed air bubbles, with bevel up injected 2-3 mm deep at 15°.		1
7	Technique - Injected slowly raising a bleb.		1
8	Withdrew quickly with support to skin.		1
9	Pressed sterile cotton. Don't massage.		1
10	Cleaned up and disposed waste. Communicate about completion of the procedure & thank the patient.		1

Sl. No	Checklist for subcutaneous injections	Yes/No	Marks
1	Self-introduction. Confirmed patient, checked prescription, drug & expiry date.		1
2	Washed hands and worn gloves.		1
3	Reassured, procedure explained, loaded syringe.		1
4	Located site.		1
5	Sterilized site.		1
6	Technique - right procedure, held needle at 45° angle (2 ml syringe).		1
7	Technique - Released the skin, Aspirated, and injected.		1
8	Withdraw quickly with support to skin.		1
9	Pressed sterile cotton.		1
10	Cleaned up and disposed waste. Communicate about completion of the procedure & thank the patient.		1

Sl. No	Checklist for Intramuscular injections	Yes/No	Marks
1	Self-introduction. Confirmed patient, checked prescription, drug & expiry date.		1
2	Washed hands and worn gloves.		1
3	Reassured, procedure explained, loaded syringe.		1
4	Located site & Sterilized site.		1
5	Told the patient to relax the muscle.		1
6	Technique –removed air bubble, held needle at 90° angle, with bevel up and punctured.		1
7	Technique-Aspirated, checked for blood and injected.		1
8	Withdraw needle safely supporting skin.		1
9	Pressed sterile cotton.		1
10	Cleaned up and dispose waste. Communicate about completion of the procedure & thank the patient.		1

Eg for drugs given via following routes

- Sublingual – Nitroglycerine, Buprenorphine, Nifedipine, isosorbide dinitrate
- Rectal – Paracetamol, Diazepam, Indomethacin, Hydrocortisone
- Cutaneous Eg: Transdermal nitro-glycerine
- Inhalation Eg: General anaesthetics, Inhalational steroids
- Nasal Eg: Desmopressin, Calcitonin, Nafarelin, Sumatriptan
- Intradermal : BCG vaccine, Rabies vaccine, Drug allergy tests, Mantoux tests
- Subcutaneous : Insulin, LMW Heparins like Reviparin, Teriparatide, GLP 1 agonists.

Special s/c delivery systems include

- Dermojet : Mass BCG vaccination, Insulin
- Pellet implantation : Testosterone, DOCA, Combined contraceptive pellets
- Silastic and biodegradable implants : Norplant (LNG), testosterone, Buprenorphine, Leuprolide
- Hypodermoclysis : Saline given subcutaneously in infants for dehydration.(They have loose s/c tissue) Not used now a days.

Select a suitable route of administration of the drug for the following case scenarios. Demonstrate/ Explain the steps of administration.

1. 56 year old Rajasekhar complains of sudden onset of chest pain in the left side radiating to his left shoulder and inner aspect of the arm. He is sweating and in severe distress. Drug to be used is isosorbide dinitrate (IDN).

Use Of IDN Tablet - Sublingual Route in Angina

- a. Patient is advised to carry sublingual tablets
- b. Use the tablets while in the sitting position
- c. Put one tablet under the tongue as soon as symptoms appear
- d. If symptoms are not relieved immediately additional tablets may be used at 5 minute intervals.
- e. Do not use more than 3 tablets in 15-minute interval
- f. Spit off the remaining tablet soon after relief of pain
- g. If symptoms does not resolve call for help

Use IDN tab before a period of increased activity such as walking, climbing or sexual intercourse to prevent an attack. Advise patients who are taking PDE inhibitors that they must not use glyceryl trinitrate if they have an angina during sexual intercourse. Stop sexual activity and if pain doesn't resolve, call for help.

2. Srinivasan, 27 year old, admitted as a case of right inguinal hernia is posted for surgery. The sensitivity testing of lignocaine is to be done before doing the surgery. : Intradermal route
3. 14 year old Vinod fell during play on the road and had abrasions on his knee. He needs to be administered tetanus toxoid. : Intramuscular route
4. 46 year old Ramesh, a type I diabetic needs to take human insulin injection daily at home : Subcutaneous route
5. A known case of peptic ulcer is to be administered ranitidine. : Intramuscular
6. A patient is to be tested for Penicillin allergy. : Intradermal
7. A patient admitted with oedema and dyspnoea due to congestive heart failure is to be given furosemide. : Intravenous
8. A child admitted with diarrhoea and moderate dehydration is advised Ringer lactate immediately. : Intravenous infusion

Cannula size(gauge)	Flow rate (ml/min)	Colour	Use
14	240	Orange	Trauma, Surgeries
16	180	Grey	Trauma, Surgeries
18	90	Green	Trauma, Quick blood transfusions
20	60	Pink	Normal iv or blood transfusions
22	36	Blue	Children, older adults
24	20	Yellow	Neonates, children, elderly
26	13	Purple	Neonates

