Administering Parenteral Drugs

Problem

Administration of a medication can be defined as “the giving by a nurse or authorized person of a drug to a patient”. Parenteral drug administration refers to drugs given by routes other than the digestive tract, usually by injection or infusion. Common parenteral routes of drug administration include intravenous (IV), intramuscular (IM) and subcutaneous (SC).

Most hospital patients receive parenteral drugs at some time during their stay. Parenteral drug administration has been associated with a higher number of errors than any other route. (In one hospital ward study, there was at least one error made during the preparation and administration in nearly 50% of the intravenous drug doses.)

Consequence

Medication errors can have severe consequences for the patient, including adverse reactions and possibly death. A nurse who makes a medication error could face disciplinary action by the employer, the professional regulatory body, and may be subject to criminal and/or civil prosecution. Nurses should never underestimate their responsibilities when preparing and administering medication, or choosing to omit it.

Solution

Here are some suggested steps to take to prevent / avoid parenteral medication errors.

Basic principles

- Prescriptions for parenteral medicines must be written clearly without any ambiguity.
- The prescription details should include:
  - Patient details (name, hospital number, age, etc.)
  - Allergies or previous adverse drug reactions
  - Date and time of administration
  - Approved full name of injectable medication
  - Dose and frequency
  - Route of administration
- Diluent and volume, if infusion needs to be reconstituted
- Information to calculate the dose, e.g., patient weight
- Review date/time of the prescription
- Finish date/time or maximum number of doses
- Prescriber’s name and signature.

- For complex prescriptions, use standardized prescription charts as this will minimize deviations from best practices.

- Drugs should be prepared immediately before use by the person administering them, unless the drugs are available ready prepared and labeled in prefilled syringes.

- Prior to administering the drug, you must understand:
  - How the drug is constituted
  - How to calculate the dose, concentration of the final solution, and rate of infusion
  - Compatibility of the drug with diluents and other drugs being given to the patient
  - Stability of the drug
  - Whether the drug can be injected by hand or requires to be infused over a specific period of time
  - Special handling requirements, e.g., avoiding light or temperature fluctuations.

- Wash your hands and put on gloves before preparing the drug and work on a clean surface.

- Prepare and check drugs in a quiet area without distractions to minimize errors during preparation.

- Ensure drugs are properly mixed; some drugs can layer and require thorough mixing while some drugs need to be mixed slowly to avoid foaming.

- Read the drug labels carefully and check the expiry date; watch for similar-looking packages and similar-sounding drug names.

- Immediately label all syringes and infusion bags following reconstitution.

- Check drugs against the prescription to ensure the correct dose of the correct drug is being given at the correct time to the correct patient.

- Take the prepared drug, empty drug ampoules or vials, diluent ampoules and prescription charts to the patient for immediate administration.

- Identify the patient verbally and visually by checking their name band against the prescription chart.

- Ensure the patient is not allergic to the medication by checking the drug chart and asking the patient.
• Explain to the patient what you are going to administer and why.

• Check one final time the prescription chart, drugs and patient prior to administering the drug.

• For IV drugs, IV access needs to be checked to confirm it is working; this can be done by injecting 0.9% saline or 5% dextrose first.

• Use an aseptic non-touch technique (ANTT) to deliver the drug.

• Monitor the patient after giving the drug; watch for expected and adverse effects.

• Dispose of ampoules and needles in a sharps container.

• Injectable medicines should be for single use only unless the label specifically indicates that they are licensed and suitable for multi-dosing.

• Ensure that infusion devices are plugged into the main electrical supply at the patient’s bedside, or have adequate battery power if being used during patient transfer.

• When two drugs are infused IV simultaneously into the same vein, it is essential to ensure that both drugs are being infused into the patient at the correct rates.

• If the patient is receiving an infusion, check the pump regularly to monitor the amount of drug given.

• Check for any precipitation in the infusion syringe or bag.

• Document the drug has been given on the prescription chart and/or patient’s record.

• Staff involved in the administration of medicines must be proficient at calculations, and understand the principles of weight per volume percentages.

• Complex medication calculations should be double checked, preferably by another nurse.

• Injectable cytotoxic drugs should be supplied to clinical areas ready to use and specifically labeled. These drugs should only be used in specified areas and administered by individuals trained in cytotoxic drug administration.

• If you have any questions or are unsure of any aspect of parenteral drug administration, seek advice from senior colleagues or a pharmacist before proceeding.

References


electronic Medicines Compendium (eMC): http://www.medicines.org.uk

Note: A narrated e-Learning module of this Nugget is available at LearningNurse.com.