IM injection

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The NMC (2004) guidelines on the administration of drugs state that administration practice is not solely a mechanistic task to be performed in compliance with the written prescription of a medical practitioner. It requires thought and the exercise of professional judgement.

Administration of drugs via the intramuscular route requires the nurse to possess both of the above skills with an understanding of anatomy and physiology, and a knowledge of the technique, in order to practise safely and accountably.

The intramuscular (IM) route

Drugs administered via the IM route are deposited deep into the muscle tissue. This may be done because the substance is not tolerated or is altered by the upper gastrointestinal tract, or when other routes may be contraindicated, such as the oral route in patients who can receive nil orally, or for some medications where intravenous access is difficult.

Muscles also have fewer sensory nerve endings, which may allow less painful administration of irritant drugs.

Absorption of medication may be faster than the oral route, although it has limited use in patients with impaired peripheral circulation, such as those in shock.

Certain drugs are not recommended for IM administration and practitioners must follow manufacturers’ guidelines and local policies.

Related anatomy and physiology

Five sites have been suggested for IM injections (Rodger and King, 2000). However, in clinical practice three areas are commonly used (Jamieson et al, 2002) (Fig 1):

- The deltoid muscle of the upper arm;
- The anterior lateral aspect (the vastus laterals muscle) of the thigh;
- The upper outer quadrant (the dorsogluteal muscle) of the buttoc.

Many practitioners avoid the dorsogluteal muscle because there is well-documented evidence of injury to the sciatic nerve (Small, 2004). The practitioner should also avoid sites where there is evidence of tissue scarring, inflammation or other lesions.

Preparation

Informed consent should be obtained before undertaking the procedure, and attempts should be made to allay any anxiety with honesty and reassurance.
The following equipment should be gathered:

- Prescription chart/patient details;
- Appropriately sized sterile needles (based on the suspected muscle layer depth for the patient and the viscosity of the drug to be given);
- Sterile syringes;
- Drug/diluent to be administered;
- Alcohol swab (if recommended in local policy);
- Gauze.

**The procedure**

- Ascertain any allergies the patient may have.
- See Fig 2.
- Wash hands and don a clean apron and gloves.
- See Fig 3.
- Withdraw the amount of drug required.
- Remove any air bubbles from the syringe.
- Change the syringe needle to one of the correct size for the patient.
- Clean skin surface (if recommended by local policy).
- See Fig 4.
- Withdraw the syringe piston, observing for a flashback of blood into the syringe. If this occurs, do not inject the drug; withdraw the syringe and needle, prepare a fresh drug and insert at another location, to avoid accidental intravascular administration.
- If there is no blood flashback, slowly administer drug.
- Withdraw needle smoothly and quickly at a 90° angle.
- See Fig 5.
- Observe for any bleeding and apply pressure and a dressing if required.
- See Fig 6.

**Special considerations**

Specialised techniques may be required for certain drugs, including the Z-track technique, which may be used for medications that are particularly irritating or stain the skin (Jamieson et al, 2002). The instructions for this and other techniques can be found in the data sheet that accompanies the drug.

**Complications**

Failure to rotate IM injection sites may result in small deposits of unabsorbed medication, so the rotation of sites must be clearly documented to avoid this. Sterile abscesses may occur as a result of injecting an irritant drug into the subcutaneous tissues. This can be avoided by selecting a needle of appropriate length.

**Professional responsibilities**

Any nurse who administers IM medication should have undertaken specialist training and assessment of competence in line with the organisation’s protocols and guidelines in order to minimise risks.

The onus is also on the individual to ensure knowledge and skills are maintained, both from a theoretical and practical perspective. Nurses should also adhere to their organisation’s protocols, policies and guidelines.

**REFERENCES**


This article has been double-blind peer-reviewed.

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