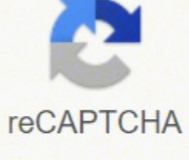


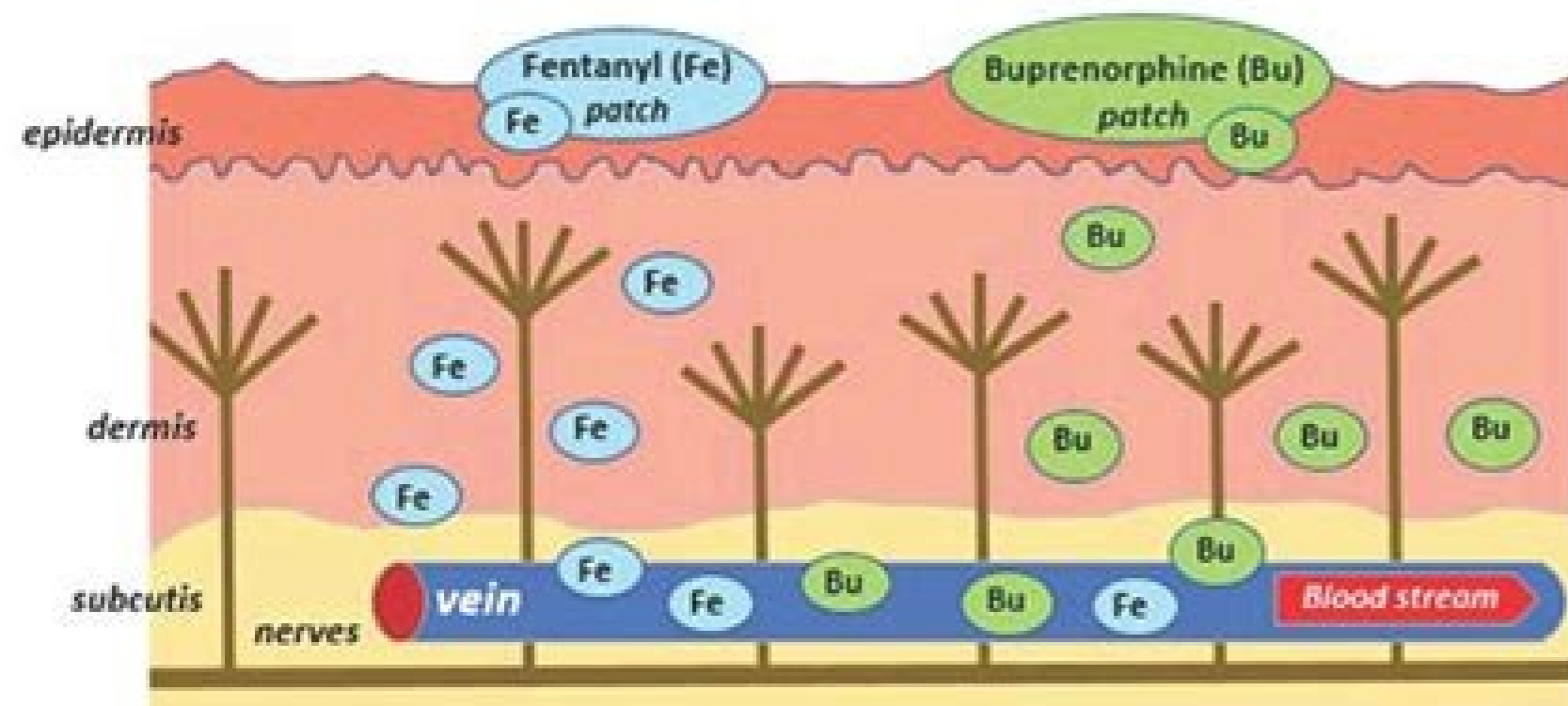


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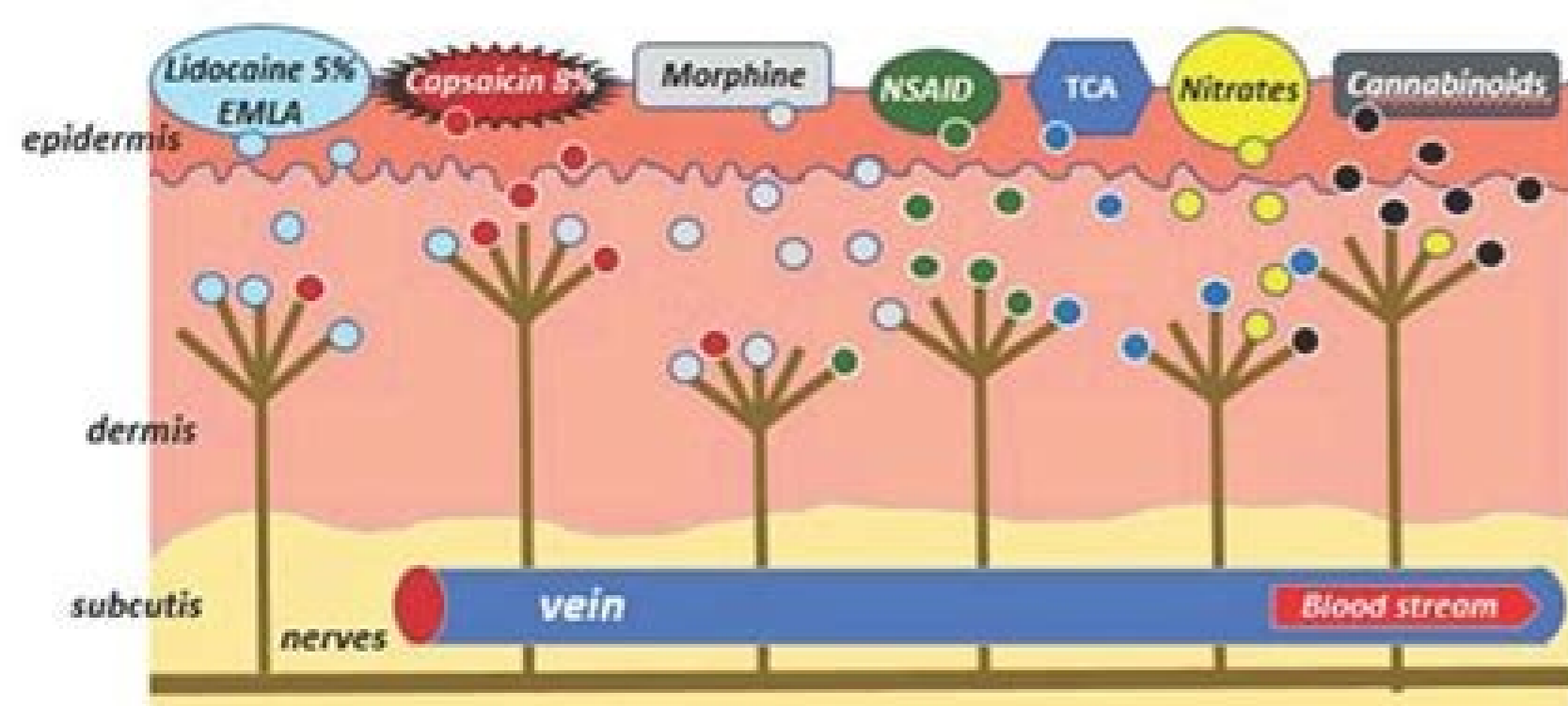


Continue

Transdermal application for systemically acting drugs



Topical application for locally acting drugs



Routes of Drug Administration

4/10/12

Drug Absorption

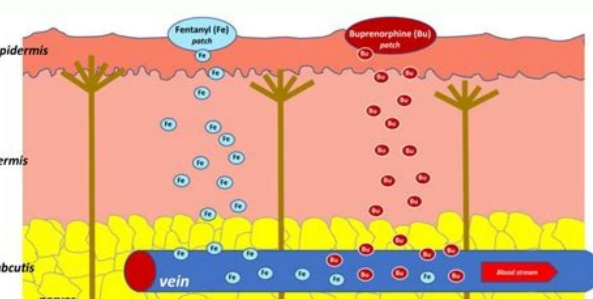
- Absorption is the process by which a drug enters the bloodstream without being chemically altered or
- The movement of a drug from its site of application into the blood or lymphatic

3. Routes of drug administration in rats

d. Intraperitoneal injection (IP)

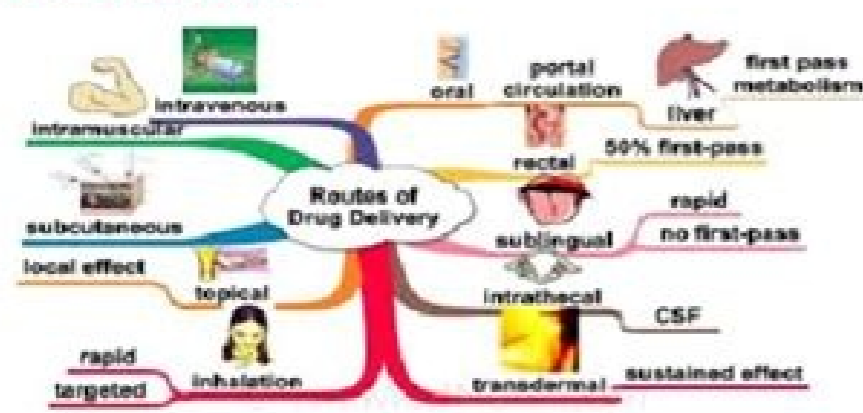
Requirements- Disposable gloves ,injection article, Isopropyl alcohol, gauge, 1-3 ml syringe, hypodermic needle- 22-30G Max- 5ml can be administered

Insert needle into lower left/right quadrant of abdomen at a 30-degree angle.



ROUTES OF ADMINISTRATION OF DRUG

JAWEREA ASIF



DEFINITION:

A route of administration in pharmacology and toxicology is the path by which a drug, fluid, poison, or other substance is taken into the body. Routes of administration are generally classified by the location at which the substance is applied. Common examples include oral and intravenous administration.

Routes can also be classified based on where the target of action is. Action may be topical (local), enteral (system-wide effect, but delivered through the gastrointestinal tract), or parenteral (systemic action, but delivered by routes other than the GI tract).

Furthermore, there is also a classification of routes of administration that basically distinguishes whether the effect is local (in "topical" administration) or systemic (in "enteral" or "parenteral" administration).

CLASSIFICATION:

Unfortunately subsequent adoption of their advice is uncritically applied, to the extent that their "findings" have entered common clinical practice, as evidenced by Kyle (2009) and Dougherty et al (2015). Ness W et al (2012) Management of Lower Bowel Dysfunction, Including DRE and DRF: RCN Guidance for Nurses. Cultural sensitivities, as well as misinformation regarding insertion methods, may be barriers to the practice. Preparing the patient Once equipment has been prepared: Explain the procedure in terms the patient will understand. Document the effectiveness of the suppository, as appropriate. Ensure privacy by drawing curtains around the bed space. Cowan H (2015) Autonomic dysreflexia in spinal cord injury. Suppositories (Fig 1a attached) are small, torpedo-shaped pellets that melt at body temperature, whereas enemas (Fig 1b, attached) are substances in liquid form designed for rectal administration. Oxford: Wiley-Blackwell. Coggrave M (2012) Guidelines for management of neurogenic bowel dysfunction in individuals with central neurological conditions. Macqueen S et al (2012) The Great Ormond Street Hospital Manual of Children's Nursing Practices. Citation: Lowry M (2016) Rectal drug administration in adults: how, when, why. Nursing Times; 112: 8, 12-14. Observe the patient for any adverse reactions. Remove all packaging from the suppository and place the equipment onto a clean dressing trolley or similar. Most of the confusion stems from an article published in The Lancet (Abd-el-Maeboud et al, 1991), which suggested that suppositories should be inserted blunt-end first. Tortora GJ, Derrickson BH (2008) Principles of Anatomy and Physiology. According to Coggrave (2012), autonomic dysreflexia is worsened as a consequence of faecal loading and impaction. Conclusion Clinical nurses need to think about when it may be preferable to administer drugs to a patient PR. Galbraith A et al (2007) Fundamentals of Pharmacology: An applied Approach for Nursing and Health. Nurses should familiarise themselves with the indications and contraindications of all drugs including enemas and suppositories for treatment of constipation. The right knee may be supported by a pillow. A rectal examination to assess whether faecal matter is present may be performed before administering suppositories or enemas that are designed to relieve constipation. London: DH. Harlow. Pearson Education. The rectum constitutes the final 20cm or so of the terminal gastrointestinal tract; approximately 2-3cms of this is the anal canal. The Royal Marsden Manual (Dougherty et al, 2015) continues to refer to Abd-el-Maeboud et al's (1991) study, but there is now a caveat to say that a common-sense approach should be adopted when deciding which end of a suppository should be inserted first. The Lancet; 338: 8,770, 798-800. Therefore, once carefully inserted into the rectum, medication should not cause pain. The rectum is relatively underused in some societies as a route for safe administration of medicines, arguably due to the intimacy of the site compared with more socially accepted and visible routes, such as oral or topical administration, or injection. Nursing Standard; 22: 38, 39-41. As well as being a more effective route for delivering medication, rectal administration also reduces side-effects of some drugs, such as gastric irritation, nausea and vomiting (Tortora and Derrickson, 2008). Journal of Clinical Nursing; 16: 1, 98-103. There are occasions when the administration of medication PR is contraindicated, for example: Lack of consent (verbal, written or implied); Recent rectal or anal surgery - this can include tissue changes caused by pelvic radiation; Abnormalities or trauma involving the perineal or perianal areas; When a prescriber has specifically instructed that it not take place; Suspected paralytic ileus or colonic obstruction - this should be discussed first with relevant medical or other prescribing staff. Guidelines for the administration of medicines should be followed and medicines should be prescribed according to local policy. Department of Health (2001) Medicines and Older People: Implementing Medicines-related Aspects of the NSF for Older People. Staff should have appropriate training prior to carrying out a rectal examination (Ness et al 2012). London: Wiley-Blackwell. Pegram A et al (2008) Safe use of rectal suppositories and enemas with adult patients. Wear non-sterile gloves and apron while at the bedside. Box 1. Kyle G (2009) Should a suppository be inserted with the blunt end or the pointed end first, or does it not matter? Spinal cord injury There are particular precautions for patients who have a spinal-cord injury (SCI), especially above the level of T6, when using the rectal route. Efforts should also be made to ensure clinical staff are aware of the correct insertion method for suppositories and check that the information on which they base their practice has a solid evidence base. The procedures Equipment Appropriate personal protective equipment that is compliant with local policies; Prescription chart noting the legal requirements for the correct prescription; Medication as prescribed - after first checking the patient's allergy status; Lubricant may be required for either a suppository or enema insertion tube; Small clinical waste bag; Absorbent pad in case of discharge; Gauze swabs or tissues; Bedpan, commode and toilet paper, or ready access to a toilet if required. The patient should be asked to retain the suppository for 20 minutes or longer, providing this is comfortable, in order for the drug to be absorbed. Peate I, Gault C (2013) Clinical skills series/2: enemas and suppositories. Absorption from within the anal canal is via its highly vascular mucous membrane that is divided into folds or pillars, known as anal columns (Tortora and Derrickson, 2008). This raises special considerations for nurses, as failure to support the elimination needs of people with SCI increases the likelihood of this complication. With consent, the perineal and perianal area should be examined for signs of: Soreness or redness in the anal area or inner buttocks; Excoriation of skin, especially where there are signs of infected tissue; Pruritus: although this is not necessarily a contraindication for PR administration, it will need to be monitored and reported if persistent; Skin tags: these are unlikely to cause problems during administration but care should be taken to avoid damage that might lead to bleeding; Infestations; Haemorrhoids: these may be a problem if they are large and friable, as insertion of PR drugs may cause pain or bleeding; Foreign bodies: these are uncommon but their presence should be reported to senior staff; Bleeding: this requires further investigation and should be reported to senior staff; Wounds and discharge from dressings. "Six rights" of drug administration Each time you administer a medication, you need to check you have the: Right individual Right medication Right dose Right time Right route Right documentation Practice points Practitioners must ensure their knowledge and practices about drug administration per rectum are based on a solid evidence base Nurses must understand all the advantages, contraindications and safety aspects of rectal drug administration Clinical staff should explain to patients the benefits of administering drugs via this route Patients must be informed about, and consent to, receiving drugs per rectum Cultural diversity and individual sensitivities must be considered when preparing patients to receive drugs per rectum Abd-el-Maeboud KH et al (1991) Rectal suppository: commonsense and mode of insertion. Ask the patient to repeat what to expect from the procedure to ensure comprehension. This must be addressed with caution and the patient's overall health will need to be considered before administration; To introduce medications, such as sedation, respiratory treatments, analgesia, antibiotics - as long as the patient does not object to medicines via this route. London: NPSA. When you are satisfied the patient understands, gain declared spoken consent, as appropriate. Dougherty L et al (2015) The Royal Marsden Manual of Clinical Nursing Procedures. An example of a retention enema is prednisolone for patients who have ulcerative colitis or Crohn's disease. This is important when considering a manufacturer's legal terms of use, and nurses should reflect on how they might defend criticism of their chosen method. Leave the patient in a comfortable position, preferably still lying on the left side, with a call bell so staff can be called for assistance if necessary. Document the administration procedure. Ensure the patient remains comfortable and ready for the procedure. Within the anal canal are two areas to control the opening of the anus - the internal and external sphincters (Fig 2). Retention enema Unlike evacuant enemas, retention enemas are designed to be kept in the rectum to enable absorption of the drug via the mucous membranes. Suppositories and enemas are administered for a number of reasons including: To evacuate the bowel before surgical intervention and other investigations - enemas and suppositories may be combined for this type of preparatory treatment and the patient may have to self-administer; To help relieve constipation - a simple suppository formulation, such as glycerine, can soften stools and aid the passage of faeces. Be aware, this procedure can sometimes make the patient feel faint or nauseated. Place an absorbent pad under the patient's hips and buttocks. If the suppository or enema is for drug administration rather than aperient, where possible the bowels should be opened before administration. Wash your hands thoroughly to remove any potential bacteria that could contaminate the patient. Such individuals are at risk of autonomic dysreflexia, which occurs in response to a noxious stimulus below the level of injury, such as bowel distension or insertion of a suppository. For those who require multiple medications, PR administration may be inappropriate due to overloading the rectum at any one time; To relieve and treat haemorrhoids or anal pruritus (itching) - many preparations soothe the mucosa and relieve symptoms of common anal disorders. Ask the patient to remain in the left lateral position for at least 30 minutes to aid retention. Davies C (2004) The use of phosphate enemas in the treatment of constipation, Nursing Times; 100: 18, 32-35. Ask the patient to relax, perhaps by concentrating on their breathing or controlling their breaths. Suppositories Check the "six rights" for administration of medicines (Box 1). Enemas Follow preparation instructions and steps 1-4 above for suppository insertion; Remove the cover from the nozzle and lubricate the tip of the nozzle, and along its length; Part the buttocks and, holding the nozzle, gently insert it into the anal canal; Slowly squeeze the bag or pack until all the contents have been deposited; While still squeezing - which helps to avoid any re-entry of contents due to vacuum effect in the enema - gently withdraw the nozzle. The effect is likely to be rapid, as the presence of the enema itself may stimulate a response. Bradshaw and Price (2007) identified a lack of evidence for the claims made by Abd-el-Maeboud et al. Where feasible, elevate the foot of the bed to aid enema retention. Benefits and contraindications Drugs administered PR have a faster action than via the oral route and a higher bio-availability - that is, the amount of effective drug that is available is greater as it has not been influenced by upper gastrointestinal tract digestive processes. If they think it may be appropriate, they should discuss this with the patient and then, if the patient is in agreement, liaise with prescribers. Rectal absorption results in more of the drug reaching the systemic circulation with less alteration on route. National Patient Safety Agency (2004) Improving the Safety of Patients With Established Spinal Injuries in Hospital: Spinal Cord Lesion and Bowel Care. This is important and underlines the need to ensure a patient receiving drugs via the rectal administration route is sufficiently relaxed and cooperative, to enable both insertion and retention of the drug. Author: Michael Lowry is lecturer in nursing at the University of Bradford. Help the patient to lie on their left side with the right knee raised towards the chest, if possible. Raising the foot of the bed may also help. Part the buttocks and gently insert the suppository into the anal canal to around 2-4cm using a gloved index finger. Nursing Times; 105: 2, 16. Inserting suppositories There have been a number of conflicting reports about which end of a suppository should be inserted first. This article explains how the rectal route functions in drug absorption, clarifies when this route is appropriate to use and outlines the steps nurses should follow to prepare patients adequately and safely to carry out the procedure. Hoboken, NJ: Wiley. Suppositories and enemas Medication intended for rectal administration often comes in the form of a suppository or an enema. The internal sphincter functions involuntarily, whereas the external sphincter is under the control of the individual. An enema may also be needed for cases that do not respond adequately to a suppository. Squeeze sufficient lubrication onto a piece of gauze and lubricate the apex (pointed end) of the suppository. Many people with SCI are dependent on bowel management regimes and healthcare staff must be taught how to perform the procedure correctly (Ness et al, 2012). The anal canal is divided into areas above and below the pectinate line (Fig 2, attached); the area below (distal) is sensitive to pain, touch and temperature, whereas the area above (proximal) is only sensitive to stretch. British Journal of Healthcare Assistants; 7: 2, 76-81. Bradshaw A, Price L (2007) Rectal suppository insertion: the reliability of the evidence as a basis for nursing practice. Nursing observations It is essential to obtain the patient's consent to carry out an assessment before the rectal administration of medication. Evacuant enema Ask the patient to retain the enema for as long as possible before discharging faecal material. Retain the patient's dignity by minimising exposure and checking their comfort - for example, absence of pain, agreeable temperature. Repeat the process if more than one suppository has been prescribed; Wipe away excess traces of lubrication from the anal area; Place all used equipment, gloves and apron in clinical waste and wash your hands. When the patient is ready to evacuate, help them to a commode or onto the bedpan, as appropriate. This can trigger an episode of extreme hypertension that can lead to stroke, haemorrhage, seizures and death (Cowan, 2015). Health professionals are not always clear on the procedure for administering medication rectally, the benefits of this route or its indications Administering medication per rectum can be the most appropriate route for some patients may not always be considered by health professionals. Logic, alongside manufacturers' recommendations and those of other authors, such as Macqueen et al (2012), determines that suppositories should be inserted pointed-end first. Nursing Times; 111: 44, 22-23. Medications administered per rectum (PR) are ideal for local or systemic treatment, as the rectal mucosa has a blood and lymph supply that is capable of effective systemic absorption. If any of the above are present, advice should be sought before proceeding. This enables eventual gravity-assisted flow into the rectum and ideally towards the sigmoid colon, which deviates to the patient's left-hand side. However, other authors, for example Peate and Gault (2013), agree that evidence to support instructions on which end of a suppository is to be inserted first may be obtained from the manufacturers, who recommend inserting the pointed end first.

02.08.2021 - Vary travel routes and times when possible. Report security concerns to Omani police and the U.S. Embassy. MARAD Report: According to the United States Maritime Administration (MARAD), U.S. flag vessels in the Gulf of Oman, North Arabian Sea, Gulf of Aden, and the Bab el Mandeb regions face an elevated risk of attacks by violent extremists. Olanzapine, sold under the trade name Zyprexa among others, is an atypical antipsychotic primarily used to treat schizophrenia and bipolar disorder. For schizophrenia, it can be used for both new-onset disease and long-term maintenance. It is taken by mouth or by injection into a muscle. Common side effects include weight gain, movement disorders, dizziness, feeling ...

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