How to manage drugs and PEGs

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Patients who are being fed via gastrostomy tubes often need medicines to be administered by the same route.

Remember

- Use alternatives to solid oral formulations of medicines for patients with a percutaneous endoscopic gastrostomy (PEG) whenever possible. Parenteral alternatives are generally only a short term solution. Liquid oral medications should be mixed with a small volume of water prior to administration via a PEG if they are viscous. Topical alternatives include transdermal patches, enemas and suppositories.
- Consider the effect of food. Administer drugs whose gastrointestinal absorption is impaired in the presence of food either half an hour before or two hours after a feed. Decreased absorption of such drugs, and possibly subtherapeutic responses, may occur in patients undergoing a continuous feeding regimen.

Assessment

- Check before crushing tablets, as the actions of modified release medications may be affected.
- Crushing tablets designed to release the drug slowly over a period of hours, giving a sustained effect and consistent blood levels of the drug, may result in a 'dose dumping' effect, where the entire amount of the drug is released into the bloodstream at once. This can cause drug toxicity, adverse effects and a loss of efficacy towards the end of the dosing interval. Many analgesics and antihypertensive agents come in these modified release formulations (sustained release, SR; extended release, ER; controlled release, CR; and controlled delivery, CD).
- Crushing enteric coated tablets, which are designed to delay the release of the drug until after passage through the stomach (the coating disintegrates at the higher pH of the small intestine), can leave an acid-labile drug at the mercy of gastric acid, thus destroying most of the active ingredient, and/or expose the gastric mucosa to severe irritation. Consider using multiple unit pellet system (MUPS) formulated drugs, where the extremely small enteric coated granules will fit down a PEG tube. (Allowing tablets to disintegrate in water for a minute or two before administration releases the pellets from the outer shell.) Some proton pump inhibitors are available in this formulation.

Management

- Tube occlusion is not only related to tube diameter but also to the viscosity of the drug formulation and the drug's compatibility with other drugs and enteral formulas. The tubing should always be flushed before and after any drug administration, using at least 30 mL of water. Blocked tubes can often be cleared by flushing with warm water or, if this fails, an alkaline solution of pancreatic enzymes.
- There are no data to support the crushing together of a patient's tablets and administering the mixture through the PEG. Drugs should be given separately and the tubing flushed after each administration.
- Tablets that have been crushed and mixed with water should be administered immediately as the contained drugs may deteriorate quickly in water (stability data is not generally available).

Problem drugs

- Phenytoin is the classic offender when considering specific drug interactions with enteral feeds. Administering phenytoin with an enteral feed can result in decreased phenytoin absorption.[1,2] Steady state serum concentrations in patients receiving phenytoin concomitantly with enteral feeds are 70 to 80% lower than in patients not receiving continuous enteral feeding.[3] There have been reports of previously stable patients experiencing seizures, with an associated decrease in serum concentration, when enteral feeds were started in a previously stable patient. It is recommended that enteral feeds be ceased for two hours before a phenytoin dose, and restarted two hours after phenytoin administration.[3] The mechanism of the interaction is unknown.
- Warfarin administration with enteral feeds also requires caution as the INR may fluctuate.[4]
- Cytotoxic drugs should be crushed with a small amount of water when being given by PEG to avoid the breathing in of the potentially toxic dust. MT

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