All in the Family – A Multi-disciplinary Approach to Drug-Nutrient Interactions (A Nursing Perspective)

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Disclosures

• I have no commercial relationships to disclose
Learning Objectives

1. List the requirements of an order for medication delivery through a feeding tube and explain the importance of patient education

2. Describe the appropriate administration of multiple medications through a feeding tube

3. Discuss the dilution and water type to be used for medication delivery through a feeding tube
Scenario #1  
Patient Jeju Nalport

- An aspiring – turned aspirating – actress developed a severe idiopathic gastroparesis nonresponsive to prokinetic agents.

- She was only able to tolerate small amounts of a gastroparesis diet meeting 20% of her caloric and protein needs. She began having difficulty keeping fluids down also.
Scenario #1
Patient Jeju Nalport

• After a successful trial of small bowel tube feedings, she had a gastrojejunal (G/J) tube placed.

• A standard adult enteral formula with fiber was initiated via the J port as a 12 hour overnight infusion with an automatic flush pump delivering 10 mL water flushes every hour + 30 mL water flush before and after.
Scenario #1
Patient Jeju Nalport

• Things were progressing smoothly at home until she developed GERD and was ordered the following:
  Delayed release omeprazole capsule, 40 mg daily in morning. Open capsule, dilute contents in 20 mL water and give via feeding tube

• Jeju was giving her tube feedings via her J port so she thought she should give her omeprazole via the J port also, in the morning, immediately after her overnight tube feeding

• There are at least 6 faults with this scenario.
Scenario #1
Patient Jeju Nalport

1. The order did not identify whether to give medication via the G port or J port.

2. Delayed release medications should not be given via feeding tubes. Omeprazole immediate release powder for oral suspension is available.

3. Omeprazole capsules contain enteric-coated granules that disperse in water but do not dissolve and therefore can clog tubes.
Scenario #1
Patient Jeju Nalport

• 4. Jeju was not educated on the delivery of this medication via her feeding tube.

• 5. Medications via feeding tubes should have a 15 – 30 mL water flush before and after.

• 6. Tube feeding should be held for at least one hour before and after omeprazole administration.
Scenario #2
Patient Melvin Mixer

- Melvin was receiving multiple medications when he suffered a stroke and developed dysphagia. A G tube was placed for enteral feedings.

- While hospitalized, his medications were converted to either immediate release tablets that were crushed and diluted in sterile water or liquid form for G tube delivery.

- The nurses mixed the medications together within a 60 mL flush syringe and flushed his G tube with 30 mL sterile water before and after.

- Why not mix the medications together and deliver via a flush syringe? After all, they all end up in the stomach.
Scenario #2
Patient Melvin Mixer

• When placing liquid or diluted powder medications in direct contact with each other within a flush syringe, interactions can take place that:

  …interfere with the therapeutic effect of each medication, in essence forming a new mystery medication.

  …cause precipitation, forming clogs
Scenario #2
Patient Melvin Mixer

• When Melvin was discharged, his home caregivers went a step further. They decided to add his medications to the tube feeding bag.

• Why not add medications to the tube feedings? After all, they all end up in the stomach.
Scenario #2
Patient Melvin Mixer

• Oopsie, what happened here?

Sufficiently diluted liquid or powder medications should be administered separately with a minimum 15 mL water flush in-between each medication.
Scenario #3
Paula Purified

- While Paula was hospitalized she developed seizures and a phenytoin suspension was ordered to be delivered via her nasally placed 8 Fr feeding tube.

- Her nurse tried to administer the suspension directly through the feeding tube but it was too viscous and some of the medication was lost.

- What is the best way to administer this medication?
Scenario #3
Paula Purified

- Medications need to be diluted enough to ensure medication delivery all the way through to the distal end of the feeding tube and to the patient.

- Only 10% of phenytoin suspension is delivered to the patient if it is not diluted or flushed.

- A general rule of thumb is to dilute suspensions 1:1 with purified water followed by a flush of the same total volume.
Scenario #3
Paula Purified

Wait, what is purified water?
Scenario #3
Paula Purified

• Purified water – water that is free of contaminants (chemical and biological) following source water selection, distillation and filtration.

• Layman’s terms please!
Scenario #3
Paula Purified

Although drinking water (tap, bottled, well water) may be used for hydration purposes, it may contain chemical contaminants and therefore increase the risk for potential medication interactions and alter medication bioavailability.
Scenario #3
Paula Purified

• Sterile water for irrigation – is purified water but it is **not** necessary for the diluent to be sterile.

• For home use, distilled water may be used!
Thank you for keeping me so pure!

Scenario #3
Paula Purified
Learning Assessment Questions

1. Which of the following is not a necessary element of an order for a medication to be delivered through a feeding tube?

   A. Whether it is through a gastric feeding tube/port or jejunal feeding tube/port
   B. How much water to dilute it in
   C. Which of the current medications it can be mixed with
   D. Dose and frequency of administration

2. Which of the following is not a necessary question to ask when opening up a capsule and administering the contents through a feeding tube?

   A. Are the contents immediate release or delayed release?
   B. Should a water flush be delivered before and after the medication delivery?
   C. What solution should the contents be diluted in and how long to they take to dissolve?
   D. Should the medication be delivered in the stomach or small bowel?

3. In the home setting, which of the following is the safest and most economical solution to dilute a medication?

   A. Distilled water
   B. Spring water
   C. Sterile water
   D. Tap water
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References
