Artificial Nutrition Support for Adults through the Continuum of Care Part I- Enteral Nutrition Webinar 11/7/24

Elizabeth Wall, MS, RDN-AP, CNSC

Questions & Answers

Gastric Residuals

1. Do you recommend checking gastric residuals? If so, what is the recommended volume to check for?
   There isn't any data to support checking gastric residuals as a means of reducing aspiration risk. For patients who are sedated, you can check residuals if you have suspicion of poor gastric emptying or gut motility. ASPEN recommends holding EN if residual > 500 mL Remember, the volume pulled back during the residual check may not reflect the entire volume in the stomach because the tip of the tube (NG) or tract (PEG/GT) may not be sitting in the antrum and so the stomach must fill up to the tube tip before it can drain.

2. Would you recommend checking GRV in more critical patients?
   Many facilities have policies to check residuals in patients who are critically ill and sedated. As above, there isn't any data to support this practice. Expert clinicians report holding EN for at least one hour if residuals are >350-500 mL, but since this practice isn't supported by data, there aren't guidelines to follow. Honestly, if you are checking residuals and progressively the volume pulled back is trending up, then you may consider holding EN at least for a short time.

Specialty Formulas

3. How necessary is a diabetic formula? Can standard formulas suffice with proper insulin coverage for diabetes?
   Yes, standard formulas will suffice with insulin to cover the grams of carbohydrates.

Bolus Feedings

4. For intermittent, bolus feeds, how quickly is safe and tolerable for administration? Number of minutes?
   Some patients can tolerate 240-325 mL in 5 – 10 minutes. Larger volumes of 350-500 mL should drip in over a longer period of time – range 20-60 minutes. ASPEN Core Curriculum cites up to 720 mL over 60 minutes, but honestly that is a lot of volume and calories to give an adult in such a short period of time. Usually try to split the feedings into 3-4/d with a drip rate of 20-40 minutes.

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Bowel Issues

5. I am using Banatrol/banana flakes in my chronic diarrhea TF - are there any other products similar, and perhaps use of digestive enzymes with each bolus carton?
   Banana flakes work really well. Some of the real food or blenderized formulas are also reported to work well in patients with chronic diarrhea. If you suspect maldigestion, then you can have the patient collect 24 hr stool for fecal fat (easy if they are on enteral nutrition because you know exactly how much fat is going in). If there is maldigestion, then I would recommend a pre-digested formula or an in-line lipase cartridge. There isn't any evidence to using digestive enzymes and if mixed with the enteral formula, then risk of clogging the tube.

6. With chronic diarrhea, should a complete GI test be done to rule out GI inflammatory disease? Does elemental formula help with diarrhea? Or only modified fiber?
   You really need to find out why the patient has diarrhea. If they are obstipated/constipated, then some fiber may help gelatinize the stool, but make sure they aren't full of stool and the diarrhea is overflow around a big block of desiccated stool. In this case you have to clear the stool blockage and then start again with a small amount of fiber containing formula or fix the etiology of the constipation (narcotics, immobility, etc.). If you think the diarrhea is from maldigestion (poor mixing of pancreatic enzymes and bile or lack of brush-border enzymes), then a pre-digested/semi-elemental formula may help.

7. Can you expand on the statement "start from below, then above" when it comes to bowel regimen?
   When patients have a large amount of stool in their rectum and colon you need to get the rectum cleared out to allow the more proximal stool to make its way down and out. Clearing the rectum can be accomplished with an enema or suppository (glycerin) to move the lowest stool out. Once that very hard rectal/sigmoid stool has passed, then you can use a typical cathartic by mouth or tube (usually Miralax works well – in fact, sometimes you need to give 3-4 doses (up to 1L Miralax) to really clear the stool-obstruction and then the stool can move through without diarrhea…. You must resolve the underlying etiology of the stool impaction, though or it will just happen again.

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Flushes, Medications and Clogged Tubes

8. What about electrolyte drinks for flushing?
   Sure, those work well if the patient needs more sodium – make sure the tube is flushed well, though to prevent sugar sticking on the inside of the tube.

9. Any solutions for nurses to unclog tubes?
   Prevention is the best bet, but if a tube clogs, then ASPEN (and my nutrition support nurse) recommend warm water flushed back and forth to move whatever is obstructing the tube. Alternatively, the nurse can crush one, non-coated pancreatic enzyme with 325 mg bicarbonate in water and try flushing that into the tube.

10. Do crushed meds in water have less osmolality than liquid versions? Are crushed medications preferred?
    Yes, crushed medications do not have the osmolality of medication suspensions.

J-tubes

11. Could there be similar issues to the "leaking G tube" for someone with a J-tube and taking liquid-form narcotics?
    Yes, J-tubes leak if there is an obstruction below the insertion site or if the bumper of the J-tube is obstructing the lumen of the jejunum and then the hepatobiliary and gastric secretions leak out of the J-tube tract.

12. What is recommended for J-tubes as far as intermittent/cyclic tube feeds?
    Most adults will tolerate an infusion rate of 100-150mL/hr into the jejunum. Depending on the volume of formula required, the feedings can be compressed based on the prescribed volume and the maximum tolerated infusion rate. Additionally, the feedings can be paused for several hours and then the infusion started again if the patient needs a break for therapy, appointments, ADLs, etc.

13. Have you experienced physicians trying to bolus using a J tube?
    Yes, generally the patients do not tolerate a bolus into the jejunum and we have to educate the physician why that is. They understand if you explain the small bowel cannot distend to accommodate a large volume of fluid, but rather slower infusion as naturally happens through the pylorus.

14. I am working with a lady who is fed via J-tube. Currently provided Vital 1.2 cal. She experienced C-diff and was treated with 2 rounds of antibiotics. She continues to have diarrhea and a very sore bottom. Medical provider started probiotics and now has requested to provide 4 oz. Kombucha daily. Are there any

further dietary interventions we should be trying to help her heal? I will be looking into the osmolality of her medications.
If the diarrhea was from C-diff, treated, and now negative, and is on a probiotic, then it may make sense to feed a polymeric enteral formula with either a small amount of fiber (maybe 10 -15 g/d) as a sort of prebiotic to feed the healthy bacteria and encourage restoration after the antibiotics. I'm afraid the partially hydrolyzed portion of Vital will be fully absorbed and have little residue for colonic bacteria to feed from. Either Kefir may be better than Kombucha, but there isn't any data to support the use of either. Also, check the infusion rate, maybe slow down to a continuous rate to meet needs, but not cycle. If stool cultures are negative, then could add a little antidiarrheal too? These cases are hard and often require a hit or miss approach.

Continuous Feeding

15. If a person is NPO in LTC, how many hours do you recommend the continuous tube feeding to run? Is 16 hours ok or do you recommend more? Do you have a general recommendation for the most appropriate number of hours for continuous feeding in LTC?
For patients who are NPO, I generally run EN for 18-16 hr/d depending on their activity level. The nice thing about EN is you can start and stop it so the patient who is NPO can receive some fluid and nutrients in the middle of the day if there is a reason to run less than 16 hr.

16. With long term nutrition support that is administered continuously, are there metabolic complications that occur, because of the patient's gut not being able to "rest?"
EN is a substitution for oral diet so for long term patients it only makes sense to mimic how they would eat if they could which is oral intake for ~14 hr/d and fasting for 8-10/d. The metabolic complication you are trying to prevent is steatosis/metabolic liver disease from constant energy infusion, insulin production, etc.

Miscellaneous

17. You mentioned adding salt to enteral formulas or use of crushed salt tabs for hyponatremia treatment, does flushing with normal saline also help correct hyponatremia?
Yes, flushing with normal saline can help provide sodium. I am not sure you can flush enough sodium to correct hyponatremia, but every little bit helps.

18. With supply shortages, what is the safest recommendation for reusing syringes and bags to tell our patients?
    Generally, supply distribution is up to the insurance company, but irrigation/flush syringes can be used for a week at a time. The infusion bags are supposed to be used for 24 hr at a time, but I know with shortages some patients have had to use the same bag for 2-3 days. The key is that they should not wash the bags with soap as it can stick to the plastic. On the other hand, if they are just rinsing with water, then bacteria can build-up… I don't think there is safety data extended beyond 24 hr.

19. Are there formulas that are NOT made with vegetable oils?
    Some of the clear oral nutrition supplements are fat-free, but not meant for total enteral nutrition. The complete EN formulas all contain some amount of plant/vegetable oils to provide linoleic and linolenic acids to prevent essential fatty acid deficiency.

20. For residents that are obese or morbidly obese and are receiving EN, what recommendations do you have to calculate their Kcal, Protein and Fluid Requirements?
    If the patient is in acute care, you can use the ASPEN/SCCM guidelines that recommend 11-14 kcal/kg actual weight/d (BMI 30-50 kg/m2) or 22-25 kcal/kg ideal wt/d (BMI >50) with high protein – 2 g/kg ideal wt (BMI 30-40) and 2.5 g/kg ideal wt (BMI >40).

21. Do you have any good resources for reimbursement for the patient?
    No, reimbursement depends on the patient's insurance. This is why it is very nice to have a care coordinator (nurse case manager or social worker) on your team to check benefits. Otherwise, the DME company will check and let you know.

22. On slide 9 for "Contraindications to EN" would you recommend PPN instead?
    If the patient has proper IV access, then peripheral or central PN may be possible. Check out the PN webinar at: https://www.beckydorner.com/free-resources/artificial-nutrition-support-for-adults-through-the-continuum-of-care-part-ii-parenteral-nutrition-webinar/.