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FND 430-001
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Enteral Feeding Case Study

1. Nutritional Assessment to determine energy and protein needs

Percent Usual Body Weight [(current body weight/usual body weight) x 100]
[(131/138) x 100] = 94.93%
BMI
(131/2.2) = 59.55kg 5'8=68 inches x 2.54 = 172.7cm = 1.72 m

$59.55/1.73^2 = 19.91$

Mifflin-St. Jeor Equation (for men)
BEE = 10(wt. in kg) +6.25(ht. in cm) - 5(age, yrs.) +5

BEE = 10(59.55) + 6.25(172.72) - 5(54) +5 = 1410kcal

I chose a stress factor of 1.7, and he is non-ambulatory which is a factor of 1.2, therefore...

TEE =1410 x 1.7 x 1.2 = 2,876kcal

Protein Needs
Here again I use a stress factor of 1.7 and multiply it by his weight in kilograms to get his protein needs in grams.

1.7 x 59.55 = 101.25g protein per day.

2. Why, What and type of tube feeding
The team agrees that Tom requires a tube feeding at this time because he is sedated and in a coma. Therefore he has inadequate oral intake and cannot consume food orally on his own because he is unconscious.

I selected a Nasogastric (NG) Feeding tube for Tom. This was chosen because he is in a temporary coma at the time, and we are assuming that this coma and inadequate oral intake will last no longer than 2-3 weeks. I also selected a Nasogastric Tube because his GI tract is functional and this is a less invasive and inexpensive tube feeding. However Tom will be closely monitored and if the coma or inadequate intake persists for longer than 2-3 weeks, I will recommend a Percutaneous Endoscopic Gastrostomy (PEG). This will allow for the patient to attach a tube and feed through the stomach.

I will begin feeding Tom on a continuous drip on a 24 hour feed schedule. I chose this because these feedings are generally better tolerated by those in a critical state such as Tom. These feedings also reduce the risk of aspiration. Feeding is started at 1/4-1/2 the goal rate and advanced every 8-12 hours until the desired volume is reached. My calculations of the amounts Tom will be given are discussed in part B of question 3 for this project.

3. **Tube Feeding Schedule**

a)The formula NUTREN 1.0 was chosen as the formula to be used for Tom's tube feeding.

b)*Volume of formula to meet his needs and the mL/hr rate for a 24 hour drip schedule.*

- NUTREN 1.0 contains 1.0kcal/1mL, therefore we need to feed Tom 2,876mL of NUTREN 1.0 a day.
- To determine the amount we administer to Tom per hour (assuming we are abiding by a 24 hour schedule), we divide 2,876 by 24

2,876/24 = 119.8.

*We should be feeding him 119.8mL of NUTREN 1.0 an hour to meet his daily needs.

- However if we are just starting Tom off on the formula for the first time, a R.D. would usually started at 1/4-1/2 the goal rate for the first 4-8 hours. So assuming we are starting at 1/2 the goal

2876/2 = 1438
1438/24hrs = 60mL/hr
*I would probably start Tom off at this rate for the first four hours and monitor to see if his GI tract is accepting the formula. If there are no signs or diarrhea or vomiting I would increase the volume of food about 10-15mL every 8-12 hours until the goal intake is reached.

c) Nutrition Tom will receive daily

- kcal: Tom is receiving 2,876mL/day of NUTREN 1.0; which is 1.0kcal/mL

2,876 x1.0 = 2,876kcal/per day

- Protein: NUTREN 1.0 is 16% protein, we are going to determine the grams of protein he is receiving per day.

2,876kcal x .16 = 460.16kcal of protein
460.16kcal protein/4kcal protein = 115.4g protein per day

*This is a desirable amount for tom his estimated protein needs with a stress factor of 1.7 and his weight 59.55kg was 101.25g of protein per day. NUTREN 1.0 had the most consistent protein content that was the closest to meeting Tom's needs. The extra 14.15g of protein will not negatively affect Tom.

- CHO: NUTREN 1.0 is 51% Carbohydrate, we are going to determine the grams of CHO he is receiving per day

2,876kcal x .51 = 1466.76kcal CHO
1466.76kcal CHO/4kcal CHO/g CHO = 366.7g CHO per day

- Fat: NUTREN 1.0 is 33% Fat, we are going to determine the grams of CHO he is receiving per day

  2,876kcal x .33 = 949.08kcal fat
  949.08kcal fat/9kcal fat/g = 105.45g Fat per day

- Fluid: NUTREN 1.0 has a free water content of 85%, we will determine the amount of fluid he is getting per day from NUTREN

  2,876mL x .85 = 2,444.6mL fluid per day

d) *Remaining fluid needs*

- The general guidelines for fluid needs is 1mL:1kcal. Tom will be consuming 2,876kcal per day and is getting 2,444.6mL of fluid per day leaving *431.4mL of fluid that Tom still needs to consume.
  *2,876-2444.6 = 431.4mL
- Additional fluid can be provided by flushes, medications and intravenous fluids. These should be considered when monitoring Tom. If the rest of the 431.4mL are not me they can be provided through the feeding tube as needed

4. **Complications with Tube Feedings**

- Access Problems (displacement, obstruction) - To prevent a tube from getting clogged I will want to make sure that the nurses are doing regular tube washes and if the client is inserting the tube themselves to make sure they have the knowledge to place the tube in the appropriate place.
- Administration Problems - These problems can include microbial contamination, misplacement causing infection or pneumonia, and regurgitation. If the hang time of the administration bag is for an extended period of time this can cause contamination. Changing open systems every 4-6 hours is optimal, closed systems can be changes about every 8 hours. Regurgitation can occur if the patient is being fed to fast. To avoid this I may lower mL per hour administered.
- Gastrointestinal Complications - These can include delayed gastric emptying, diarrhea, constipation, maldigestion/malabsorption and medications. The usual cause is the formula may be being administered to fast or is too concentrated. Residuals in the stomach may be a result of the inability for the body to digest certain compounds at this time. This may also be an indicator for the need of parenteral nutrition.
- Metabolic Complications - these include re-feeding syndrome, glucose intolerance, dehydration and over-hydration. Re-feeding syndrome occurs when a patient coming from malnutrition is given an overload of nutrition and the GI tract is not functional enough to handle it. Start these patients off with a lower concentration and amount of food to start. Glucose intolerance may occur as a result of a critical state and can be monitored or

administered a different form of carbohydrate. Over-hydration can occur if edema is present in the patient. Dehydration can occur if the patient is not getting enough fluid from formula and medications and may need extra fluid in the feeding tube.

5. ADIME CHART NOTE

Nutrition Assessment

Pt. is 54-year old man. In coma and sedated. Ht.:172.7cm; Wt: 59.55kg; BMI: 19.91; %UBW: 94.93%; kcal needs: 2,876; Protein needs: 101.25g.

Nutrition Diagnosis

Inadequate Oral Intake as related to a temporary coma as evidenced by unintentional weight loss.

Nutrition Intervention

- Will provide patient with Enteral Nutrition via a NG (nasogastric tube)
- 2,876mL of NUTREN 1.0 will be administered over a 24 hour period.
- To begin 60mL/hour of NUTREN 1.0 will be administered
- 119.8mL/hour is the goal rate for pt. to achieve daily caloric needs

Monitoring and evaluation

- If pt. tolerate food: After 8 hours of administering 60mL/hour of NUTREN 1.0, and additional 10-15 mL will be added every 4 hours until the pt. is up to the goal rate of 119.8mL per hour.
- If pt is in coma for more than 2-3 weeks: PEG will be recommended for long term care and nutritional management.
- Fluid intake will be monitored to ensure that pt. receives at least 431.4mL to compensate for additional fluids not met by NUTREN 1.0
- Monitor bodily signs such as diarrhea and vomiting to determine tolerance.
- Monitor weight and nutritional intake adequacy 3 times a week.

6. Guidelines for feeding tube removal and first foods

If Tom is still using a Nasogastric feeding tube it will be determined by the health care professional at the Rehabilitation center if he is able to consume nutrition orally. This will be determined when he is able to feed himself without the aid of someone placing the NG tube in him everyday. Once he is strong enough to feed himself will be determined by the health care provider at the rehabilitation center and maybe as well as a consult with me his R.D. Tom will probably not be ready for the solid foods he consumed prior to hospitalization. I would recommend supplemental nutrition based on his caloric needs until he feels well enough to consume regular foods again. I would again use the Mifflin-Jeor equation to determine how many calories he needs, I would use an ambulatory factor of 1.1 and a stress factor of 1.2 because he is still healing but not in as much stress as the duration of his hospital visit. Assuming he is back to his normal weight of 138...

BEE = 10(wt. in kg) +6.25(ht. in cm) - 5(age, yrs.) +5

BEE = 10(62.73) + 6.25(172.72) - 5(54) +5 = 1438.3kcal

I chose a stress factor of 1.2 and he is ambulatory which is a factor of 1.1, therefore...

TEE =1438.3 x 1.2 x 1.1 = 1898kcal

He could also incorporate some solid foods, or smoothies to complement the supplemental nutrition and slowly ween him off supplements and back to a regular solid diet. He will need to be monitored to ensure he is getting adequate nutrition once he is off supplementation. I would recommend a mechanical soft diet.

Example:

Breakfast	Lunch	Dinner
Whole wheat toast	cooked green beans	jello
jelly	bran muffin	sloppy joe
chocolate milk	ground turkey breast	blended squash soup
orange	mashed potatoes	milk
coffee		