

Enteral Feeding Case Study

By: Susan McDonald

1. To calculate the Ms. Rodriguez's BMI, I will use the following equation

$$\text{BMI} = \frac{W}{H^2} \times 703$$

$$\text{BMI} = \frac{162}{70 \times 70} \times 703$$

$$\text{BMI} = \frac{162}{4900} \times 703$$

$$\text{BMI} = 0.03 \times 703$$

$$\text{BMI} = 23.2$$

To calculate the %Usual Body Weight

$$\% \text{UBW} = (\text{Actual Body weight} / \text{Usual Body Weight}) \times 100$$

$$\% \text{UBW} = (162/180) \times 100$$

$$\% \text{UBW} = 90$$

To determine Ms. Rodriguez's energy needs, I will use the Harris-Benedict equation but I will then increase this value by an injury factor since this patient just underwent major surgery to repair a perforated duodenal ulcer. (Lee pages 236-237). The injury factor (ambulatory factor) for a patient that underwent major surgery is 1.1-1.3 (I will use 1.2 for this equation). For the stress factor, I will use 1.1 (Elective operation 1.0 - 1.5)

$$\text{BEE} = 66.5 + 13.8W + 5.0H - 6.8A$$

$$\text{BEE} = 66.5 + (13.8 \times 73) + (5 \times 178) - (6.8 \times 58)$$

$$\text{BEE} = 1963.9 - 394.4$$

$$\text{BEE} = 1569.5$$

$$\text{TEE} = \text{BEE} \times \text{stress factor} \times \text{ambulatory factor}$$

$$\text{TEE} = 1569.5 \times 1.1 \times 1.2$$

$$\text{TEE} = 2071.7$$

Ms. Rodriguez's goal weight should be between 160 lbs and 167 lbs. Her usual body weight of 180, according to the BMI, would put her overweight.

2. The patient was probably started on a feeding tube postoperatively to avoid irritation of the repaired perforated duodenal ulcer. This is a very serious, life threatening condition, and one does not want to further irritate the lining of the stomach and intestines. There could also be major malabsorption issues when eating and the patient will not be able to consume enough nutrients to remain healthy.
3.
 - a. **Jevity 1.2**

Nutrient Density, Cal/mL: 1.2

Protein, % Cal: 18.5

Carbohydrate, % Cal: 52.5

Fat, % Cal: 29.0
MCT:LCT: 19:81
Cal to Meet 100% RDIs: 1200
mL to Meet 100% RDIs: 1000
Total Cal:g Nitrogen: 135:1
Nonprotein Cal:g Nitrogen: 110:1
Osmolality, mOsm/kg H₂O: 450
Renal Solute Load, mOsm/L: 465
Viscosity: Nectar-Like (Room Temperature and Chilled)
Minimum Tube Size for Gravity/Pump Feeding (Fr): 10/8
Protein, g: 13.2
Fat, g: 9.3
Carbohydrate, g: 40.2
Dietary Fiber, g: 4.3†
L-Carnitine, mg: 36
Taurine, mg: 36
Water, g/mL/cc: 191
Calories: 285

Since the patient has suffered from a perforated duodenal ulcer, a condition that is very serious and is many times fatal, Ms. Rodriguez's diet should be high in protein and essential amino acids to promote recovery but lower in fats and sugars. The formula I chose is specifically formulated for patients with increased protein requirements.

- b. Goal Rate
 (Ms. Rodriguez needs to consume 2072kcal/day) therefore:
 $2072\text{kcal} / 1.2\text{kcal/ml} = 1727\text{ml}$
 $1727\text{ml} / 24\text{hours} = 72\text{ml/hr} = 72\text{cc/hr}$
- c. Energy provided
 $72\text{ml} \times 24\text{hrs} = 1728\text{ml} / 24\text{hrs}$
 $1728\text{ml provides } 1728\text{ml} \times 1.2 \text{ kcal/ml} = 2074\text{kcal} / 24\text{hours}$

Protein

First, I will determine the patient's protein requirements

$$73.4\text{kg} \times 1.2\text{g/kg} = 88.08\text{g protein/day}$$

$$\frac{55.5\text{g pro}}{1000\text{ml}} = \frac{X\text{g pro}}{1728} = 96 \text{ g protein}$$

$$1000\text{ml} \quad 1728$$

This result is more than the 88.08g that the patient requires

Carbohydrates

$$\frac{169.4\text{g carb}}{1000\text{ml}} = \frac{X\text{g carb}}{1728} = 293\text{g carbs}$$

$$1000\text{ml} \quad 1728$$

Fat

$$\frac{39.3\text{g fat}}{1000\text{ml}} = \frac{X\text{g fat}}{1728\text{ml}} = 68\text{g fat}$$

Water

$$\frac{807\text{ml water}}{1000\text{ml}} = \frac{X\text{ml water}}{1728\text{ml}} = 1394\text{ml water}$$

- d. The patient requires 1ml/kcal of water therefore she still needs:
2074ml – 1394ml = 680 ml
Additional water can be provided through the feeding tube of 230ml given 3 times per day.
4. As long as a patient is consuming at least 1200cal worth of the Jevity 1.2 then they will be receiving the recommended DRIs for all vitamins and minerals. However, since the patient is stressed and recovery from surgery Ms. Rodriguez may need supplemented vitamin intake. Many ulcers become infected or are infected with H. pylori, and vitamin B can help reduce symptoms. Also, since the patient has been experiencing symptoms such as diarrhea, it will be beneficial to add an electrolyte to her diet. It would also be beneficial to supplement with an electrolyte and even potassium since Ms. Rodriguez has gone a week with barely any nutrient intake.
5. On a daily basis, Ms. Rodriguez stool needs to be monitored to make sure she is not suffering from diarrhea. She also needs to be monitored on a daily basis for signs of dehydration, edema and her weight needs to be checked at least three times per week. One a weekly basis, Ms. Rodriguez's BUN, serum electrolytes and vitamin levels should be monitored.
6. ADIME Chart Note:

Nutrition Assessment

-Pt is 58 year old female who recently underwent surgery to repair a ruptured duodenal ulcer
Ht: 5'10; Wt: 162#;
-Laboratory Values Noted: Hct 29%; FBG 128 mg/dL; BUN 14mg/dl
EEN: about 2074 calories

Nutrition Diagnosis

Inadequate oral intake related to a lack of consumption of nutrients for a week as evidenced by pts weight loss from 180 pounds to 162 pounds.

Nutrition Intervention

-Goals: Pt will increase their calorie intake to 2074 calories per day
-Patient be started on enteral feeding

Monitoring and Evaluation

-Pts stool will be monitored on a daily basis
-Pts nitrogen levels, BUN, and albumin levels will be monitored weekly
Pt will be monitored daily for edema, dehydration, and oral intake.