NUT 116BL
Due: February 2, 2024 @ 9pm **Name:** Xiaotong Fei

Case Study 1: Acute Pancreatitis
(25 pts: Worksheet Questions [13 pts] & ADIME Note [12 pts])

INSTRUCTIONS

- Review the pt's medical record on EHRgo: https://web21.ehrgo.com/rd/?courseActivityId=119896. Note that EHRgo includes the patient's hospitalization details from the ED and MICU. Information needed for Med/Surg are included below.
- Reference the textbook, pocket guide, lectures, FMI text, and Mosby's 2024 Nursing Drug Reference posted on Canvas as needed.
- Use the appropriate IDNT diagnostic codes.
- Submit your work on Gradescope in PDF format.

Case Study

You are the med/surg RDN in your hospital. A patient, Mr. M, was admitted to the ED, then MICU, and was transferred to the med/surg unit after improvement to mild acute pancreatitis. You must fulfill the consult for his nutrition assessment and are responsible for follow-up assessments, planning, and monitoring throughout his hospitalization.

I. Understanding the Diagnosis and Pathophysiology

1. Describe the normal exocrine and endocrine functions of the pancreas.

Exocrine functions: it is the outside body function: secrete enzymes to digest protein, lipid, and carbohydrate; bile can be secreted down to the small intestine from gall bladder; and
Endocrine functions: it is the inside body function: maintain the glucose homeostasis, and has langerhans islets to regulate the carbohydrate, protein, and fat breakdowns.

2. Determine the potential etiology and characteristics of both acute and chronic pancreatitis.

Acute: might be induced by overconsumption of alcohol or the gall stone obstruction. Pt may experience upper abdominal pain when food consumed, N/V, steatorrhea, hypotension, and dehydration; also the autodigestion of pancreatic cells and hemorrhage of the pancreas.
Chronic: induced by chronic inflammation due to long-term excess intake of alcohol. Pt will experience chronic abdominal pain when eat, steatorrhea, malnutrition, or even diabetes since the the pancreas has decreased ability on regulating the glucose homeostasis.

3. What laboratory values or other tests support this diagnosis? List all abnormal values and explain the likely cause for each abnormal value.

Acute: elevated lipase and amylase due to inability to digest fat and carbs, high FBG due to irregulation of glucose homestasis, high TG and cholesterol due to fat malabsorption, high WBC due to inflammation, hemoglobin, high BUN due to inability of breaking down protein, high segmented neutrophils due to increased WBCs, fat-soluble vit decreases due to decreased absorption of fat,

4. What are the potential complications of acute pancreatitis?

Auto digestion of the pancreatic cells since the trypsin is activated before entering the small intestine, which digest the protein cells of pancreas.

II. Understanding the Nutrition Therapy

5. Explain the rationale and indication for NPO orders for acute pancreatitis. What do current literature, guidelines, and recommendations indicate for mild acute pancreatitis nutrition therapy?

Traditionally, NPO is encouraged since we want to ease the pt's pain and symptoms by stopping feeding them. However, current study states that there are no differences on lab values or pain levels between pts who are fed and pts on NPO. Thus, NPO is not recommended right now and small frequent meals with low fat can be tolerated as long as pt can accept the pain level.

III. Nutrition Assessment, Diagnosis, Intervention, Monitoring, and Evaluation

Using the EHRgo information, assess the patient's nutritional needs at the time of your initial consult.

6. Calculate Mr. M's estimated energy needs at the time of the nutrition consult using two potential but appropriate methods. Select which method you think is more appropriate and provide the rationale for your choice. Specify the inputs for your calculations. Do not round intermediate calculations. (2 pts)

Method	Calculations	Final Answer (kcal range)
i. Disease factor method [25-35 kcal/kg]	calculations are on the last page of the ADIME note	2785-3899 kcal
ii. Short-cut [20-25 kcal/kg]		2228-2785 kcal
Selection and rationale: I chose short-cut rather then the disease factor method since this the calculated calorie intake of first method is too high for a person who is currently on bed all the time with obesity grade II. The range of the short-cut method seems reasonable.		

7. What are Mr. M's estimated protein and fluid needs at the time of the nutrition consult? Specify the inputs for your calculations and provide a goal range for your final answer. (2 pts)

	Calculations	Final Answer (pro range)
Protein	Calculations on the last page of ADIME note	120g-147g protein/d
Fluid		2228-2785 mL fluid/d

8. Review medication considerations. *Refer to the FMI text as needed*. (2 pts)

Why is Mr. M on IV Pepcid?	a. What type of medication is this? *(i.e., Briefly describe the mechanism of action)*	this is a H2-histamine receptor antagonist inhibiting the histamine, which reduce the gastric secretion.
	b. Why is it clinically indicated for this patient compared to an alternative?	This is a short term treatment for gastric and duodenum ulcer and endocrine adenomas.

Identify any drug-nutrient interactions that you should monitor.	Pepcid 20 mg IVP q 12 hr - avoid beers in older adults with delirium Ondansetron 2-4 mg IV q 4-6 hr prn - St. John's wort decrease the effect of the drug, increase water intake Colace (docusate) 100 mg po twice daily prn; if no BM - flax and senna increase the effect, increase water intake Milk of Magnesia (MOM) 30 mL po daily prn - incease water intake, should be chewed before pt swallowing, may eat citrus fruit after taking the drug for covering the taste of the drug.

9. Based on your chart review and knowledge of mild acute pancreatitis, what information would you want to obtain from Mr. M when you visit him to be able to complete your nutrition assessment? What information would you want to obtain from other members of the interdisciplinary care team? (2 pts)

For completing the nutrition assessment, I would like to know pt's usual diet, family/social history, pt's previous diagnosis related to nutrition, current medications he is taking, and anthropometric information. I need to obtain lab values and vitals related to pancreatitis from the care team members.

10. Write a thorough ADIME note for your initial med/surg assessment of Mr. M. Upload separately to Gradescope. (12 pts)

Follow the pocket guide ADIME note guide and include all the relevant parameters. Be sure to evaluate his current anthropometrics (and any trends), current kcal, pro, and fluid needs, adequacy of the current diet order, medications during hospitalization, and current labs. What do the anthropometric and biochemical data reveal? Is the current diet order adequate and realistic for the patient? How would you recommend progressing the diet from clear liquids and beyond up through a regular diet? Write one PES statement that reflects your assessment and include it in your note. In the Plan section, make very specific nutrition and monitoring recommendations for this patient at this point in time and for the diet advancement.

Progress Report Overview

Student:	**Xiaotong Fei**
Activity:	Andrew Mann - Acute Pancreatitis
Start Time:	02/05/2024 00:58:47
End Time:	02/06/2024 20:35:06
Total Time:	43:35:00

Actions

Note at 02/06/2024 20:35:04

Andrew Mann - Acute Pancreatitis Documentation

Student: Xiaotong Fei
Activity Start: 02/05/2024 00:58:47
Activity Completion: 02/06/2024 20:35:06
Activity Completion: 43:35:00

Patient Data

Patient: Andrew Mann
Age/Sex: 29 yo M
Location: General Hospital
DOB: 06/16/1994
MR#: 9412557
Admit Date: 02/01/2024

Notes

Note at 02/05/2024 00:59:50

ADIME Note

Basic Information

Date:
02/05/2024 00:59:50

Author:
Xiaotong Fei

Location:
General Hospital

Patient name:
Andrew Mann

Date:
Feb.5.2024

Assessment

Diagnosis:

Pt diagnosed with new onset acute pancreatitis and MD ordered consult for nutrition assessment on diet progression and nutrition education on pancreatitis and alcohol consumption.

Age:
29 yo

Gender:

Male

Race:

Jewish

Ethnicity:

Caucasian

Client History

Medical history:

Appendectomy surgery at age of 12.

Medical diagnoses:

pt has depression

Family history:

Mother has breast cancer, father has HTN.

Social history:

Pt is a graduate student currently living with his roommate. He is working as a research assistant on campus, has no significant other, and has just stopped taking antidepressant medications. Pt is well educated. Pt consumes alcohol daily. No social activities mentioned by pt.

Current medications:

Imipenem 1000 mg q 6 hr,
Pepcid 20 mg IVP q 12 hr,
Meperidine 50-150 mg IV q 3 hr prn,
Ondansetron 2-4 mg IV q 4-6 hr prn,
Colace (docusate) 100 mg po twice daily prn; if no BM,
Milk of Magnesia (MOM) 30 mL po daily prn,
Ativan 0.5-1 mg po q 8 hr prn

Nutrition-related medications:

Pepcid 20 mg IVP q 12 hr - avoid beers in older adults with delirium
Ondansetron 2-4 mg IV q 4-6 hr prn - St. John's wort decrease the effect of the drug, increase water intake
Colace (docusate) 100 mg po twice daily prn; if no BM - flax and senna increase the effect, increase water intake
Milk of Magnesia (MOM) 30 mL po daily prn - incease water intake, should be chewed before pt swallowing, may eat citrus fruit after taking the drug for covering the taste of the drug.

Current supplements:

None

Anthropometric history

Height:

173cm (5'8'')

Weight at admission:

111.4kg (245lb)

Current Weight:

111.4kg (245lb)

BMI:

37.2 kg/m2 – obesity Grade II

% Weight change:

0%

IBW:

70kg (154lb)

% IBW:

159%

UBW:

111.4kg (245lb)

% UBW:

100%

Other:

none

Weight assessment:

Pt has a wt gain of 22.7kg (50lbs) over the 5 years. The reason of the weight gain is unmentioned, thus, unknown. His UBW equals his CBW and wt at admission.

Biochemical history, medical tests, labs, and procedures:

BUN :22mg/dL (High)
Glucose :115mg/dL (High)
WBC (cells/ml) :15200cells/ml (High)
Segmented neutrophils :74% (High)
Cholesterol, total :202mg/dl (High)
Triglycerides :426mg/dL (High)

Nutrition Focused Physical Exam

Skin Assessment

☑ Intact

Edema
None

Feeding Ability

☑ Independent

Oral Motor

☑ Intact

Muscle and fat store assessment:

WDWN

If other, please explain:

none

Food and Nutrition History

Current diet order:

CL diet with fluid restrictions

Assessment of usual intake:

Pt states breakfast usually contains coffee and bread, sandwich or pizza for lunch, and often dining outside for dinner. He consumes alcohol daily. > 40 oz beers and 2 shots bourbon on weekdays and mixed drinks and > 3 shots on weekends. Pt has been eating very little 3 days before admission due to N/V and abdominal pain.

Assessment of current intake:

Pt is currently on CL diet transitioning from NPO due to new onset acute pancreatitis diagnosed by MD.

Supplements/herbals:

N/A

Food allergies and intolerances:

NKFA

Intake and digestive problems:

Pt had abdominal pain and N/V (resolved).

Assessment of Nutritional Status/Nutrition Risk

☑ No malnutrition noted

Nutrition Recommendations

kcal/day based on:

2228 kcal/d - 2785 kcal/d based on 111.4kg BW [20-25 kcal/kg BW]

g protein/day based on:

120g protein/d - 147 g protein/d based on 111.4kg BW [1.2g : 1kg/BW +/- 10%]

mL fluid/day based on:

2228 - 2785 mL fluid/kcal/d based on [1 mL fluid : 1 kcal fed]

Other:

pt report feeling hungry after three days of NPO.

Nutrition assessment summary:

Pt currently on CL diet is in need of an advanced diet order due to his improvement on pain; also in need of nutrition education on the alcohol induced pancreatitis.

Diagnosis

Nutrition Diagnosis:

Inadequate oral intake (NI-2.1)

PES Statement:

Inadequate oral intake (NI-2.1) r/t pt reported having not eaten for 3 days AEB pt diagnosed with acute pancreatitis, admitted on NPO diet, and admitted to CL diet.

Nutrition Intervention

Nutrition prescription:

To gradually progress pt's clear liquid diet to full liquid diet in order to help pt
to recover to his regular meals by close F/Us with pt and constantly communicating with MD about pt's status.

Food and nutrition delivery:

Diet Rx:
Full liquid diet (ND-1.2.8.4)
Kcal: 2228 kcal/d - 2785 kcal/d based on 111.4kg BW [20-25 kcal/kg BW]
Pro: 120g protein/d - 147 g protein/d based on 111.4kg BW [1.2g : 1kg/BW +/- 10%]
fluid: 2228 - 2785 mL fluid/kcal/d based on [1 mL fluid : 1 kcal fed]
Rec'd increased medium chain triglyceride diet (ND-1.2.5.8.1) to help pt absorb as much fat as possible due to the decreased secretion of lipase from pancreas.
Rec'd high protein intake (ND-1.2.3.2) to help pt repair the damage of pancreas cells induced by pancreatitis.
Rec'd taking thiamin supplements (ND-1.2.10.6.1) to increase the intake of Vit B.

Nutrition education:

Discussed and rec'd knowing how alcohol induce pt's pancreatitis. (E-1.1)
Discussed and rec'd the importance of following the full liquid diet rx for sooner recovery to regular meals. (E-1.2)

Nutrition counseling:

Strategies: Provided goal setting (c-2.2) and motivational interviewing strategies (C-2.1) to help pt be more compliant to full liquid diet (ND-1.2.8.4).
Goals:
Consuming the full liquid diet 2 times per day for 3 days before next F/U.
Take thiamin supplements 1x/d for increasing Vit B intake.
Record level of tolerance to full liquid meals 4x/week.
Compliance: expect high compliance to liquid diet r/t pt asking if he can eat solid foods, which means he wants to go back to regular meal patterns quickly, and pt can tolerate clear liquid diet well.

Coordination of care:

Therapist consult for discussing pt's depression r/t unawareness on his overconsumption of alcohol. (RC-1.5)

Monitoring and Evaluation

Food and nutrient intake:

Monitor the pt's compliance to the full liquid diet (FH-2.1.1.2) by being recorded by pt himself for the next 3 days before next F/U.

Anthropometric measurements

Monitor weight (AD-1.1.2.1) 1x/mon

Biochemical data:

Monitor intake via calorie count for 3 days.
Monitor tryglyceride (BD-1.7.7) 1x/d
Monitor thiamin (BD-1.13.5) 1x/3 dayss
Monitor lipase (BD-1.4.13) 1x/d
Monitor amylase (BD-1.4.12) 1x/d

Nutrition focused physical findings:

F/U in hospital in 3 days.

Signature/credential/date:

Xiaotong Fei, Clinical Nutrition Student, Feb.6.2024

height : 173 cm (5'8")

[(5ft × 12 inch) + 8 inch] × 2.54 cm/inch = 172.27 cm

= 173 cm

Weight : 111.4 kg (245 lb)

245 lb / 2.2 lb/kg = 111.3636 kg

= 111.4 kg

BMI : $\frac{kg}{m^2} = \frac{111.4 kg}{(1.73 m)^2} = 37.2214\ kg/m^2$

$= 37.2\ kg/m^2$

IBW : 106 lbs + 6 lbs × 8 inch = 154 lbs

154 lbs / 2.2 lb/kg = 70 kg

%IBW : $\frac{111.4 kg}{70 kg} \times 100\% = 159.428\ \%$

$= 159\ \%$

Disease factor Method:

25 - 35 kcal/kg

25 kcal/kg × 111.4 kg = 2785 kcal

35 kcal/kg × 111.4 kg = 3899 kcal

range : 2785 kcal - 3899 kcal.

Short-cut method: ✓

20 - 25 kcal/kg

20 kcal/kg × 111.4 kg = 2228 kcal

25 kcal/kg × 111.4 kg = 2785 kcal

range : 2228 kcal/d - 2785 kcal/d based on 111.4 kg BW [20 - 25 kcal/kg BW]

pro : 1.2 g protein/kg BW × 111.4 kg BW = 133.68 g protein

±10% range : 133.68 g protein - 133.68 g protein × 10%

= 133.68 g protein - 13.368 g protein

= 120.312 g protein

133.68 g protein + 133. g protein × 10%

= 133.68 g protein + 13.368 g protein

= 147.048 g protein

$\frac{120.312 \text{ g protein}}{111.4 \text{ kg}} = 1.08 \text{ g protein/kg}$

$\frac{147.048 \text{ g protein}}{111.4 \text{ kg}} = 1.32 \text{ g protein/kg}$

120 g protein/d - 147 g protein/d [1.2 g : 1 kg BW ± 10%]

fluid : 2228 kcal/d × 1 mL fluid/kcal = 2228 mL fluid/d

2785 kcal/d × 1 ml fluid/kcal = 2785 mL fluid/d

2228 - 2785 mL fluid/d [1 mL fluid : 1 kcal feed]