**FULL NAME: Sania Khan**

**DATE:**

**NUTR 703. Spring 2025. Case 2**

**Instruction:**

Review the case in Section I and complete the following sections.

All assignments should be in Times New Roman and 12-point font; black.

1. **Nutrition Assessment:** Complete the ADIME sheet. Fill in all information highlighted in yellow and include calculation steps at the end.
2. **Disease States:** Write about the following conditions, covering 1) pathophysiology (definition, causes/mechanism of disease, and clinical manifestations), 2) statistics (prevalence, which year the data is based on, gender/age differences if applicable), and 3) Medical Nutrition Therapy (MNT) or key nutritional considerations. Include references and use proper citation in AMA or APA format:
   1. SKIP FOR THIS CASE
3. **Medications:** Complete the table with all pertinent medications.
4. **Labs:** Complete the table with all pertinent lab values
5. **References**: Ensure all references are formatted consistently in AMA or APA style.

# I. Nutrition Assessment

**NUTRITION FOLLOW UP**

**Assessment:** "Patient is a 75 y.o. female with history of non-obstructive CAD, HFpEF, CKD 5, DM, PVD, HTN, HLD, cataracts, esophageal dyskinesis, gastroparesis, possible gastric carcinoid, admitted on 11/2020 s/p cardiac arrest at home."

**Nutrition Interval:**

* Pt extubated on 12/03/2020.
* Pt seen this morning with in-house Spanish Interpreter. Pt reports an "okay" appetite and endorses consuming fruit for breakfast. Pt endorses consuming "little" bit of meals yesterday
* Pt denies N/V and endorses constipation, last BM per pt 4 days ago.
* Pt denies issues chewing or swallowing current diet
* Pt seen by SLP
  + SLP eval 12/02: recommended minced & moist/ moderately thick liquids
  + SLP eval 12/03: recommended c/w current diet

**Current Diet:** minced & moist/moderately thick liquids

**Allergies:** NKA

**Anthropometric Measurements**

Ht: 154.9 cm/5’1”

Current wt: 153 lbs/69.5 Kg – via bed scale

Admit wt: 60.8 Kg/150 lbs

IBW: \_**47.7**\_\_ Kg +/- 10%

% IBW:\_\_**146**\_\_%

BMI**: 28.9** kg/m²

*(Round to one decimal point for weight, BMI; whole number for percent)*

**Physical Findings**

Skin: stage 2 sacrum/coccyx pressure injury, DTI R location not specified (Epic 12/3/2020)

Edema: +1 generalized, +1RUE, +1LUE, +1RLE

**Pertinent Medications:**

lipitor, precedex, pepcid, fentanyl, haldol (prn), lantus, humalog, synthroid, propofol (off), renvela, sodium bicarbonate

**Pertinent Data - Labs:**

|  |  |
| --- | --- |
|  |  |
| GLUCOSE | 81 |
| NA | 150 |
| K | 3.5 |
| CHLOR | 112 |
| CO2 | 25.0 |
| BUN | 104 |
| CA | 7.5 |
| CREAT | 1.56 |

|  |  |
| --- | --- |
| MAGNESIUM | 2.1 |
| PHOSP | 6.0 |

 FS x 24 hours: 114-261 mg/dL

HbA1c (12/2020): 8.3%

**Re-Estimated Nutrient Needs**

Energy: \_**1431 - 1670**\_ kcals/day (**30-35kcals**/ kg IBW)

Protein: **60 – 72** g/day (**1.25-1.5g**/ kg IBW)

Fluid: 1 mL/Kcal or per med team discretion

*(Round to whole number for kcals, grams, mL)*

**Nutrition Diagnosis:**

*(write two PES statements with one about malnutrition)*

1. Moderate malnutrition (NC 4.1.2.1) related to chronic illness (CAD, CHF< CKD5) as evidenced by ~10% weight loss in 4 months, mild to moderate muscle wasting, and history of inadequate oral intake of <75% nutrient needs x >1 month. ~ continues
2. Altered nutrition related lab values (NC-2.2) related to DM as evidenced by FS x 24 hours of 114-261 mg/dL and A1c of 8.3% CKD5 as evidenced by hypernatremia and hyperphosphatemia. - updated, continues
3. Swallowing difficulty (NC-1.1) related to oropharyngeal dysphagia as evidenced by pt unable to tolerate solid foods and thin liquids at this time per SLP assessment.

**Nutrition Intervention:**

* Recommend Renal, minced and moist/ moderately thick liquids diet plus no concentrated sweets
* Recommend Gelatein (sugar free) BID (provide 80 kcals and 20g of PRO) to optimize PO intake
* Recommend renal multivitamin (Nephrovite) to optimize wound healing, if not contraindicated
* Continue to monitor SLP re-eval; diet to remain consistent with recs
* Consider bowel regimen given pt c/o constipation
* Sevelamer TID w/ meals and insulin per med team; adjust prn

\*Communicated to team

**Monitoring and Evaluation:**

* Encourage and monitor PO intake
* Monitor renal Lytes and fluid status
* Monitor Blood Glucose
* Monitor GI function
* Monitor labs, weights, skin integrity and GI status
* Will f/u

**Nutrition Education:**

Nutrition education: renal diet guidelines, food-drug interactions

**Level of Care**:

Level III/ High

# III. Medications

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Drug** | **Indication** | **Contraindication** | **Effect of Drug on Nutrient Absorption & Utilization and Effect of Nutrient on Drug Absorption & Utilization** | **Side Effects** |
| **Lipitor** | Antihyperlipidemic; decrease total and LDL cholesterol or triglycerides | **C**ategory X for pregnancy; not with lactation; caution with alcohol; caution in patients with active liver disease or unexplained persistent elevations of liver enzymes | Grapefruit and grapefruit juice can inhibit the metabolism of atorvastatin, leading to increased blood levels and risk of side effects. May lower Coenzyme Q10 levels in the body, potentially leading to muscle pain or weakness. | Nausea, dyspepsia, abdominal pain, constipation, diarrhea, flatulence, edema, decrease risk of fracture due to bone resorption, myopathy, backpain |
| **Precedex (** Dexmedetomidine) | Used for sedation in intensive care settings and procedural sedation in non-intubated patients. | Contraindicated in patients with significant hypotension, advanced heart block (unless paced), and severe bradycardia. Caution in hepatic impairment and hypovolemia. | Dexmedetomidine has minimal direct impact on nutrient absorption, but prolonged sedation may contribute to decreased oral intake, leading to nutritional deficiencies. No significant known food-drug interactions; however, electrolyte imbalances (e.g., low potassium or magnesium) may exacerbate cardiac side effects. | Hypotension, bradycardia, dry mouth, nausea, respiratory depression (less severe than other sedatives), dizziness, and withdrawal symptoms if discontinued abruptly after prolonged use. |
| **Pepcid (famotidine)** | Antiulcer, anti-GERD, antisecretory | Contraindicated in patients with hypersensitivity to famotidine or other H2 antagonists. Use caution in patients with renal impairment, as dose adjustments may be necessary. | May reduce B12 absorption over long-term use by altering gastric pH, which affects intrinsic factor production and vitamin B12 absorption. It may also interfere with the absorption of certain minerals like calcium, magnesium, and iron. | headache, dizziness, constipation, diarrhea, and in rare cases, confusion or agitation, especially in elderly patients or those with renal impairment. |
| **Fentanyl** | Analgesic, narcotic, pain management; Severe pain | severe respiratory disease, acute respiratory disease and respiratory depression; not with lactation, may be habit forming 8,9 | can cause constipation, which may affect nutrient absorption and gastrointestinal motility. 8This slowed gastrointestinal transit can lead to decreased nutrient absorption and may contribute to digestive discomfort and issues.  No significant interactions between nutrients and fentanyl absorption. | Dry mouth, dyspepsia (indigestion), nausea and vomiting, hiccups, constipation, abdominal pain, flatulence, diarrhea, respiratory depression, drowsiness, confusion, weakness, dizziness, anxiety, mental depression |
| **Haldol** | Antipsychotic, Tourette’s syndrome; treat hyperactivity or behavioral problem in children | Avoid alcohol. Not with lactation, increase risk of dental problem. Caution with HTN, decrease hepatic function, cardiac disease or seizures." Caution with geriatric. Not with Parkinson's disease | Take with food or milk to decrease GI distress;Do not mix conc with coffee or tea- drug may precipitate.13 Dilute concentrate with more than or equal to 60 ml milk, pudding, carbonated drinks," acidic beverage or water | DRY MOUTH, increase salivation, dyspepsia, nausea and vomiting, constipation, diarrhea. |
| **Lantus** | Long-acting insulin – diabetes | Do not mix with other insulins; Use alcohol with caution, pregnancy C; caution with lactation; Caution with decrease hepatic function, decrease renal func, hyperthyroidism or hypothyroidism. | Diabetic meal plan to balance carbohydrate c insulin | Hypoglycemia, transient edema, vision changes, rare-allergic reaction |
| **Humalog** | Antidiabetic, hypoglycemic, rapid-acting bolus insulin | Hypoglycemia, allergy to insulin; caution with lactation, decreased hepatic or renal function, hyper/hypothyroidism | Alcohol increases hypoglycemic effect of insulin. Exercise, stress, illness, pregnancy, heavy smoking or large weight gain increases insulin needs | Hypoglycemia, Transient edema, vision changes, injection site reactions, weight gain |
| **Synthroid** | Thyroid hormone (T4); For hypothyroidism | Caution with lactation- adjust dose. Caution with diabetics on medication-increases glucose. Caution with CVD, HTN or geriatric; More than 99% serum pro bound. Pregnancy: Category A. increase dose | Take Fe, Ca, or Mg suppl separately from drug by more than or equal to 4 hours (may decrease tabs). Decrease absorption reported with soy, soy milk, soy infant formula, walnuts, cottonseed meal & high fiber foods. Caution with grapefruit/related Citrus. Take drug 2-3 hours before soy | Appetite changes, decrease in weight. nausea, diarrhea, headache, tremor, insomnia, increase BP, increase pulse. |
| **Propofol** | Anesthetic, | known allergy to propofol or any of the other ingredients of propofol injection including egg and soybean protein; avoid alcohol, not with lactation or pediatric ICU use, caution with hyperlipidemia, acute pancreatitis, lipid nephrosis, diabetes cardiac arrest, HIV/AIDS, seizures.8,9 | Provides significant calories (1.1 kcal/mL as fat), which must be accounted for in total calorie intake. No significant nutrient effects on the drug | Hypotension, bradycardia, increases triglycerides and cholesterol, decreases pulmonary function. |
| **Renvela** | Phosphate binder; use in ESRD | Caution with lactation, dysphagia, severe decreased GI motility, GI surgery. Not with hypophosphatemia or bowel obstruction. | To be used with low phosphate diet Decreases phosphorus, LDL, cholesterol, and PTH. Increases calcium | Nausea, dyspepsia, diarrhea, constipation, flatulence Decrease phosphorus, increase Ca, decrease LDL, decrease cholesterol, decrease PTH |
| **Sodium bicarbonate** | Antacid, alkalizing agent; Heartburn, acid indigestion | Caution with severe decrease renal function, CHF, HTN. Caution with decrease hepatic function with IV | Taken after meals with water; Consider the Na content with decrease Na diet. Take Fe suppl separately, 1 hr before or 2 hr after drug. Caution with Ca suppl or high milk intake with long term use | Increased thirst, increase weight (edema), Belching, gastric distention, cramps, flatulence. Peripheral edema. Rare- alkalosis, fluid overload. |

# IV. Labs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Labs** | **Patient lab values** | **Reference Range** | **Elevated or Depressed or**  **WNL?** | **Reasons for Elevation** | **Reasons or Depression** |
| GLUCOSE | 81 | < 200 mg/dL  70-110 fasting | WNL | DM, acute stress response, Cushing syndrome, CRF, acute pancreatitis, corticosteroid therapy | Insulinoma, hypothyroidism, hypopituitarism, Addison dz, extensive liver dz, insulin overdose, starvation |
| NA | 150 | 136-145 mEq/dL | Elevated | Diuretics, fluid loss, dehydration, diabetes insipidus, excessive sweating, steroids | Diuretics, SIADH, CHF, cirrhosis, renal failure, NSAIDS |
| K | 3.5 | 3.5-5 mEq/L | WNL | Hemolysis, excessive intakes (oral or IV), ARF/CRF, aldosterone-inhibiting diuretics, crush injury to tissues, infection, acidosis, dehydration | Deficient intake (oral or IV), burn, GO disorders (vomiting, diarrhea), diuretics, Cushing syndrome, renal tubular acidosis, ascites, CF, trauma, surgery |
| CHLOR | 112 | 96-106 mEq/L | Elevated | Dehydration, metabolic acidosis, hyperventilation which can lead to respiratory alkalosis | Overhydration, prolonged vomiting or gastric suction, diarrhea or high output fistula, metabolic alkalosis |
| CO2 | 25.0 | 24-28.8 mEq/L | Depressed | Respiratory alkalosis, metabolic acidosis, renal failure, ketoacidosis | Metabolic alkalosis, hypoventilation |
| BUN | 104 | 5-20 mg/dL | Elevated | Pre-renal (hypovolemia, shock, burns, dehydration, CHF), MI, GI bleed, excessive protein ingestion, starvation, sepsis, renal dz/failure, post-renal (urethral obstruction from stone) | Inadequate protein, malnutrition, liver failure, overhydration, SIADH, nephrotic syndrome |
| CA | 7.5 | 9-11 mg/dL | Depressed | Hyperparathyroidism, hyperthyroidism, breast/lung/kidney CA, vitamin A toxicity | Hypoalbuminemia, hypomagnesemia, hyperparathyroidism, hyperphosphatemia, renal failure, med (steroids) |
| CREAT | 1.56 | 0.6-1.2 mg/dL | Elevated | Reduce renal blood flow (shock, dehydration, CHF, atherosclerosis), pyelonephritis, acute tubular necrosis | Debilitation, decreased muscle mass (muscular dystrophy, myasthenia gravis) |
| MAGNESIUM | 2.1 | 1.3-2.1 mEq/L | WNL | Renal failure, dehydration, acidosis, hypothyroidism, adrenal insufficiency, prolonged intake of Milk of Mag | Malabsorption, diarrhea, fistula, GI surgery, renal losses, alcoholism, meds (diuretics), refeeding syndrome, acute pancreatitis |
| PHOSP | 6.0 | 3-4.5 mg/dL | Elevated | Renal impairments, laxatives, vitamin D excess, acidosis | Impaired absorption, vitamin d deficiency, diarrhea, meds (Phos-binders, insulin), alcoholism, refeeding syndrome |

# V. References

1. Nahikian-Nelms M. Nutrition Therapy and Pathophysiology. Fourth edition. Cengage;
2. Pronsky, Z. M. (2012). Food medication interactions (17th Ed.). Food Medication
3. Medsafe Home Page. (n.d.). Retrieved September 28, 2024, from <https://www.medsafe.govt.nz/index.asp10>.
4. Calcium chloride. Accessed February 22, 2025. <https://go.drugbank.com/drugs/DB01164>