**FULL NAME:**

**DATE:**

**NUTR 703. Spring 2025. Case 5. PPN**

**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. AKI
   2. colostomy
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

**INITIAL NUTRITION ASSESSMENT**

Verbal consult from surgery team re: PPN initiation.

**Assessment:** 76 y.o. male with a history of type B aortic dissection s/p TEVAR in 2015 requiring multiple revisions 2016-2017 with residual endoleak admitted for thoracoabdominal aneurysm repair completed 10/2020. Post-op course complicated by bleeding/coagulopathy, shock, AKI, fevers, and failed extubating 10/25 requiring re-intubation 10/26. Has been on antibiotics since his surgery, initially vanc/cefepime à broadened to meropenem for possible tracheobronchitis in the setting of significant secretions (sputum cxs now growing MSSA). Had tracheostomy 10/29. 10/30 morning noted to have feculent drainage from his left abdominal incision. Underwent bedside wound opening and irrigation. Found to have colocutaneous fistula on imaging now s/p Reopening of left lateral abdominal component of wound with washout and resection of descending colon with transverse colostomy and smead-jones closure of wound.

**Nutrition History:**

Pt previously receiving Vital AF 1.2 @ 70 mL/hr via PEG. 🡪 \*calculate how much this provides:

**1680 mL total volume, 2016 kcal, 126 g protein, 134% RDIs**

Total volume: 70 x 24 = 1680mL

Energy: 1680x1.2 = 2016kcal

Protein: 1680 x (75/1000) = 126g

RDIs 1680/1250= 134%

Per team, "Surgery reconsulted due to pt self-removing PEG trach and wound vac. PEG replacement attempted and appeared acceptable at bedside after xray, however further imaging revealed misplacement. Some tube feeds had been initiated. Pt with mild tenderness, no pain at rest. Not peritonitic. NG tube placed to suction, PEG tube removed."

**GI:** x 1 loose BM via colostomy

**Current Diet:** NPO

**Allergies:** No Known Allergies

**Anthropometric Measurements**

Ht: 5’8”/172.7 cm

Wt: 64.2 Kg – via bed scale

IBW: 70 Kg/154 lbs +/- 10%

% IBW: 92 %

BMI: 21.5 kg/m²

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

**Physical Findings**

Skin: intact per RN flow sheets

Ext: +1 edema @ abdominal, sacral, perineal, and facial area; +1 edema @ b/l upper and lower ext; +1 generalized edema

Pertinent Medications: epoetin alfa, nystatin, ondansetron

**Pertinent Labs:**

|  |  |
| --- | --- |
| GLUCOSE | 77 |
| NA | 134 |
| K | 4.5 |
| CHLOR | 96 |
| CO2 | 22.0 |
| BUN | 54 |
| CA | 9.1 |
| CREAT | 3.27 |
| CA | 9.1 |
| MAGNESIUM | 2.2 |
| PHOSP | 5.9 |

**Estimated Nutrient Needs**

Energy: 1890 - 2100 kcals/day (27-30kcals/70 kg IBW)

Protein: 105 - 140 g/day (1.5-2.0g/ 70kg IBW)

Fluid:  1 mL/Kcal or per med team discretion

**Nutrition Diagnosis:**

Inadequate oral intake related to s/p PEG removal for bowel rest as evidenced by pt requiring PPN to meet nutrition needs at this time.

Altered nutrition related lab values related to medical course as evidenced by hyponatremia and hyperphosphatemia.

**Nutrition Intervention:**

1. Recommend PPN initiation tonight @6pm x 72 hours. Per surgery team, pt to be initiated on PPN and maintained NPO.

**Recommend PPN to start tonight @ 6 pm x 72 hours:**

                        D70%             214 mL (= 150g, 510Kcal)

                        AA15%          400 mL (= 60 g, 240 Kcal)

                        H20/Lytes         1386 mL

                        Total Volume   2000 mL @ rate of 83.3 mL/hr x 24 hours

                        Lipid 20%:       94 mL x 12 hours        188 Kcal, 19g

Total Regimen provides: **2094mL of total volume,** **938 Kcal, 60 g PRO based on 70kg of IBW. Meeting 13 Kcal, 0.9g PRO per 70kg of IBW.**

1L: 375 kcal, 30 g PRO

**2L**: 750 Kcal, 60 g PRO (PPN base solution)

1. Protein

60 x 4 = 240 kcals

60/0.15 = 400 ml

1. Dextrose

750-240 = 510 kcal

510/3.4 =150 g

150/0.7=214 ml

1. H2O

2000-400-214 = 1386mL

1. Lipid (20%)

240+510= 750kcal (=80% of total kcal)

750/0.8 = 938kcal total

938 x 0.2 = 188kcal

188/10kcal/g = 19g

188/2kcal/mL = 94mL

\*Communicated to team

* Monitor renal lytes and PPN tolerance; will c/w monitoring and adjust, prn.
* \*\*of note, current regimen does not meet pt estimated nutrition needs; will c/w monitoring tolerance and GI status and adjust regimen, prn.

 Osmolality is limited to <900 mosm/L, thus difficult to provide adequate calories without high fluid volume

**Monitoring and Evaluation:**

1. Recommend PPN initiation tonight @6pm x 72 hours. Per surgery team, pt to be initiated on PPN and maintained NPO.

>> Total Regimen provides: 2094mL of total volume, 938 Kcal, 60 g PRO based on 70kg of IBW. Meeting 13 Kcal, 0.9g PRO per 70kg of IBW.

1. Continue to monitor PPN tolerance/adequacy
2. Continue to monitor daily BMPs, Phos, electrolytes, renal indices, fluid status; fluids per team
3. Continue to monitor weekly TG levels; hold PPN if TG>/= 400mg/dL
4. Monitor skin integrity, wt trends, GI status/tolerance and output.
5. Pain and bowel regimen per team.
6. Will continue to monitor and f/u

**Level of Care**: High

# II. Disease States

# III. Medications

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Drug** | **Indication** | **Contraindication** | **Effect of Drug on Nutrient Absorption & Utilization and Effect of Nutrient on Drug Absorption & Utilization** | **Side Effects** |
| Epoetin alfa |  |  |  |  |
| Nystatin |  |  |  |  |
| Ondansetron |  |  |  |  |

# IV. Labs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pt Labs** | **Patient Value** | **Reference Range** | **Elevated or Depressed or**  **WNL?** | **Reasons for Elevation** | **Reasons or Depression** |
| GLUCOSE | 77 | 70-110 mg/dL | WNL | Diabetes Mellitus, acute stress response, excessive consumptions of carbohydrates, Cushing syndrome, acute pancreatitis, and/or corticosteroid therapy | Insulinoma, hypothyroidism, hypopituitarism, extensive liver disease, and/or insulin overdose |
| NA | 134 | 136-145 mEq/L | Depressed | Diuretics, fluid loss, dehydration, excessive sodium intake, diabetes insipidus, excessive sweating, and/or steroids | Diuretics, Syndrome of inappropriate antidiuretic hormone secretion (SIADH), cirrhosis, renal failure, and/or NSAIDS |
| K | 4.5 | 3.5-5 mEq/L | WNL | Excessive intake, hemolysis, infection, crush injury to tissues, aldosterone-inhibiting diuretics, acidosis, and/or dehydration | Diuretics, inadequate intake, burns, Cushing syndrome, renal tubular acidosis, ascites, trauma, and/or surgery. |
| CHLOR | 96 | 96-106 mEq/L | WNL | Dehydration, metabolic acidosis, and/or respiratory alkalosis from hyperventilation | Overhydration, prolonged vomiting or gastric suction, diarrhea or high output fistula, and/or metabolic alkalosis |
| CO2 | 22.0 | 24-29 mEq/L | Depressed | Respiratory alkalosis, metabolic acidosis, renal failure, and/or ketoacidosis | Metabolic alkalosis, and/or hypoventilation |
| BUN | 54 | 5-20 mg/dL | Elevated | Shock, sepsis, burns, dehydration, GI bleed, hypovolemia, excessive protein ingestion, starvation, and/or renal disease or failure. | Inadequate protein, malnutrition, overhydration, SIADH, liver failure, and/or nephrotic syndrome |
| CA | 9.1 | 9-11 mg/dL | WNL | Hyperparathyroidism, hyperthyroidism, breast/lung/kidney cancer antigen, and/or vitamin A toxicity | Hypoalbuminemia, hypomagnesemia, hyperparathyroidism, hyperphosphatemia, renal failure, and/or steroid use |
| CREAT | 3.27 | 0.6-1.2 mg/dL | Elevated | Acute tubular necrosis, pyelonephritis, and/or reduced renal blood flow | Debilitation, and/or decreased muscle mass from muscular dystrophy or myasthenia gravis |
| MAGNESIUM | 2.2 | 1.3-2.1 mEq/L | Elevated | 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 | 5.9 | 3-4.5 mEq/L | Elevated | Vit D excess, acidosis, laxatives, renal impairment | Impaired absorption, vit D deficiency, diarrhea, meds (phos binders, insulin), alcoholism, refeeding syndrome |

# V. References