

N431 Care Plan #1

Lakeview College of Nursing

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Demographics (3 points)

Date of Admission 10/01/2019	Patient Initials S.C.	Age 60	Gender Male
Race/Ethnicity Caucasian	Occupation Retired/Disabled	Marital Status M	Allergies Amoxicillin (Nausea) Contrast media (iodine based)(difficulty breathing) Codeine (nausea & vomiting)
Code Status DNR	Height 167 cm	Weight 83.5 kg	

Medical History (5 Points)

Past Medical History: B-complex deficiency; Bipolar 1 disorder; Bradycardia; Cervical stenosis of spine; Chronic abdominal pain; Chronic headache; Cirrhosis of liver; Clostridium difficile; Dental caries; GAD (generalized anxiety disorder); Gastroparesis; GERD (gastroesophageal reflux disease); Heart murmur; Hepatic encephalopathy; Hernia, umbilical; Hyperammonemia; Hypercholesteremia; Hypertension; Obesity; Pancytopenia; Anxiety; Chronic narcotic use; Chronic tension headaches; Headache disorder; Lower GI bleeding; Palpitations; Small bowel obstruction.

Past Surgical History: Esophagogastroduodenoscopy (11/13/2018); Eye Laser – Peripheral Indectomy (PI)(Left)(05/03/2017); Eye Laser – Peripheral Indectomy (PI)(Right)(04/26/2017); Bipolar; Bowel; Bowel Obstruction; Cervical spine; Hemorrhoidectomy; Hernia repair; Neck; Prostate; Tooth extraction, multiple.

Family History: Mother: Other; Ovarian cancer

Social History (tobacco/alcohol/drugs): Denies use of tobacco, alcohol, and illicit drug use.

Assistive Devices: Walker; Dentures

Living Situation: Lives with wife at home and uses assistance.

Education Level: High School

Admission Assessment

Chief Complaint (2 points): Altered Mental Status

History of present Illness (10 points):

A 60-year-old male admitted to the ED from Odd Fellows nursing home for altered mental status on 10/01/2019. The patient has a history of advanced cirrhosis of the liver and frequent hepatic encephalopathy (altered level of consciousness as a result of liver failure). The patient is A&Ox2 and is alert and oriented to person/place, but not time/current situation. The patient cannot hold a conversation and does not make eye contact. The patient was later determined to have worsening hyperammonemia (excess ammonia in the blood) and hepatic encephalopathy, as well as possible colonic obstruction. A chest x-ray comparison to a past CT abdomen and pelvis without contrast determined bowel obstruction. The patient has been given lactulose via a rectal tube to treat hyperammonemia and constipation, as well as hydralazine, to reduce blood pressure. The patient has had bowel movements and some vomiting since administration.

Primary Diagnosis

Primary Diagnosis on Admission (2 points): Worsening hyperammonemia and hepatic encephalopathy

Secondary Diagnosis (if applicable): N/A

Pathophysiology of the Disease, APA format (20 points):

Hyperammonemia is the excess ammonia in the blood. Ammonia is an essential source of nitrogen and required for amino acid synthesis. It is also necessary for a healthy acid-base balance. In high concentrations, ammonia is toxic. Toxic ammonia levels lead to an increased

disturbance of neurotransmission and synthesis in the CNS. Hyperammonemia can cause lethargy, irritability, vomiting, cerebral edema, coma, and death. Ammonia intoxication can occur when there is an impaired capacity of the body to excrete nitrogenous waste. A plethora of environmental causes and medications can cause Hyperammonemia. Hyperammonemia is a clinical condition associated with elevated ammonia levels manifested by a variety of symptoms and signs, including significant central nervous system CNS abnormalities (Auron & Brophy, 2011).

Hepatic encephalopathy is an altered level of consciousness as a result of liver failure. While the precise molecular mechanisms that result in these morphological changes in the brain are yet unknown, many factors are explained, especially the role of ammonia, false neurotransmitters, astrocyte swelling, inflammation, and oxidative stress (Elwir & Rahimi, 2017).

Pathophysiology References (2) (APA):

Auron, A., & Brophy, P. (2011). Hyperammonemia in review: pathophysiology, diagnosis, and treatment. *Pediatric nephrology*, 27(2), 207-22.

Elwir, A., & Rahimi, R. (2017). Hepatic Encephalopathy: An Update on the Pathophysiology and Therapeutic Options. *Journal of Clinical and Translational Hepatology*, 5(2), 142-151.

Laboratory Data (15 points)

CBC Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format.

Lab	Normal Range	Admission Value	Today's Value	Reason for Abnormal Value
RBC	3.9–5	4.04	3.87	Elevated RBC count is associated with high risk of fatty liver disease (Fang et al., 2017).
Hgb	11-15.5	12.3	11.6	
Hct	33.2-45.3%	35.7	34.4	
Platelets	150-400(k)	120	112	Thrombocytopenia is caused by a damaged liver and/or enlarged spleen due to chronic liver disease (Hinkle & Cheever, 2018).
WBC	5-10(k)	5.5	5.2	
Neutrophils	45-80%	73.1	76.7	
Lymphocytes	11.8-46	15.5	13.2	
Monocytes	4.4-12	5.8	7.7	
Eosinophils	0-6.3	4.6	1.4	
Bands	< x 10 ⁹ /L	0.5	1.1	

Chemistry Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format.

Lab	Normal Range	Admission Value	Today's Value	Reason For Abnormal
Na-	135-145	144	139	
K+	3.5-5.0	4.4	3.5	
Cl-	98-107	113	119	Hypochloremia is usually an indication of dehydration, and possibly an underlying cause of liver failure (Hinkle & Cheever, 2018).
CO2	21-34	16	19	
Glucose	70-99	117	90	Hyperglycemia can be associated with liver disease (Hinkle & Cheever, 2018).

BUN	6-20	11	13	
Creatinine	0.5-0.9	1.12	1.13	Elevated creatinine levels can indicate impaired kidney function. In this patient, it can signify dehydration, medication use, or degree of liver failure (Hinkle & Cheever, 2018).
Albumin	3.5-5.2	3.8	3.5	
Calcium	8.6-10.4	9.8	8.7	
Mag	1.6-2.4	1.8	N/A	
Phosphate	2.5-4.5	5.3	5.4	Hyperphosphatemia is often a sign of kidney damage (Hinkle & Cheever, 2018).
Bilirubin	<1.2	1.5	1.6	Elevated levels of bilirubin can indicate a result of medication regimen or liver damage (Hinkle & Cheever, 2018).
Alk Phos	32-100 U/L	54	53	
AST	<32	24	22	
ALT	<33	19	16	
Amylase	50-150	N/A	N/A	
Lipase	10-140 U/L	N/A	N/A	
Lactic Acid	0.4-2.3	N/A	N/A	
Troponin	0-0.4 ng/mL	<0.010	N/A	
CK-MB	5-25 IU/L	N/A	N/A	
Total CK	22-198 U/L	N/A	N/A	

Other Tests **Highlight All Abnormal Labs**—Explanations must be in complete sentences and contain in-text citations in APA format.

Lab Test	Normal Range	Value on Admission	Today's Value	Reason for Abnormal
INR	0.86-1.14	1.14	N/A	
PT	11.9-15	N/A	N/A	
PTT	23-37	N/A	N/A	
D-Dimer	< 500ng/mL	N/A	N/A	
BNP	<100pg/mL	N/A	N/A	
HDL	> 40	N/A	N/A	
LDL	< 100	N/A	N/A	
Cholesterol	< 200	N/A	N/A	
Triglycerides	< 150	N/A	N/A	
Hgb A1c	0-5.7	N/A	N/A	
TSH	0.358-3.740	N/A	N/A	

Urinalysis **Highlight All Abnormal Labs**—Explanations must be in complete sentences and contain in-text citations in APA format.

Lab Test	Normal Range	Value on Admission	Today's Value	Reason for Abnormal
Color & Clarity	Yellow/Clear	Color: Yellow Appearance : Clear	Color: Yellow Appearance : Clear	
pH	4.5-8.0	8.0	N/A	
Specific Gravity	1.005-1.035	1.012	N/A	
Glucose	< 0.8 mmL/L	N/A	N/A	
Protein	6.4-8.4 g/dL	7.2	6.4	
Ketones	0.6-1.5	Negative	N/A	

WBC	5-10(k)	5.5	5.2	
RBC	3.9-5.0	4.04	3.87	
Leukoesterase	4.5-11(k)	Negative	N/A	

Arterial Blood Gas **Highlight All Abnormal Labs**—Explanations must be in complete sentences and contain in-text citations in APA format.

Test	Normal Range	Value on Admission	Today's Value	Explanation of Findings
pH	7.35-7.45	7.35	N/A	
PaO2	75-100	49.8	N/A	Partial pressure of oxygen in the arterial blood is determined by the pressure of inhaled oxygen (Hinkle & Cheever, 2018).
PaCO2	35-45	33.2	N/A	
HCO3	22-26	18.9	N/A	Metabolic acidosis can be caused by kidney damage and/or liver failure (Hinkle & Cheever, 2018).
SaO2		85.3	N/A	

Cultures **Highlight All Abnormal Labs**—Explanations must be in complete sentences and contain in-text citations in APA format.

Test	Normal Range	Value on Admission	Today's Value	Explanation of Findings
Urine Culture	Straw	N/A	N/A	
Blood Culture	N/A	N/A	N/A	
Sputum Culture	N/A	N/A	N/A	
Stool Culture	N/A	N/A	N/A	

Lab Correlations Reference (APA):

Fang, A., Liao, G., Wang, H., Hui, Z., Zhu, H., & Zhu, M. (2017). Red blood cell count has an independent contribution to the prediction of ultrasonography-diagnosed fatty liver disease. *PLoS One*, 12(2). doi: 10.1371/journal.pone.0172027

Hinkle, J.L., & Cheever, K.H. (2018). *Brunner & Suddarth's Textbook of Medical Surgical Nursing (14th ed.)*. Philadelphia, PA: Wolters Kluwer Health Lippincott William & Wilkins.

Normal Lab Values - Common Laboratory Values. (n.d.). Retrieved from <https://www.meditec.com/resourcestools/medical-reference-links/normal-lab-values/>

Diagnostic Imaging

All Other Diagnostic Tests (5 points):

CT abdomen and pelvis without contrast; Chest x-ray

Diagnostic Test Correlation (5 points):

CT abdomen and pelvis without contrast: Impression:

- Dilated loops of large and small bowel up to 8.7cm. Findings are consistent with obstruction (Sarah Bush, 2019).

Chest x-ray: Findings:

- The heart size is normal. The pulmonary vascularity is normal. The lungs are clear. There is no pneumothorax or large effusion (Sarah Bush, 2019).

Diagnostic Test Reference (APA):

Hinkle, J.L., & Cheever, K.H. (2018). *Brunner & Suddarth's Textbook of Medical Surgical Nursing (14th ed.)*. Philadelphia, PA: Wolters Kluwer Health Lippincott William & Wilkins.

Sarah Bush Lincoln Hospital (2019). *Cerner Database*. Unpublished internal document.

Taylor, C., Lynn, P., & Bartlett, J. L. (2019). *Fundamentals of nursing: The art and science of person-centered care*. Philadelphia: Wolters Kluwer

**Current Medications (10 points, 1 point per completed med)
*10 different medications must be completed***

Home Medications (5 required)

Brand/Generic	Celexa (citalopram)	Prilosec (omeprazole)	Seroquel (quetiapine)	Prinivil (lisinopril)	Lithobid (lithium)
Dose	10 mg tablet	40 mg capsule	25 mg ½ tablet	20 mg tablet	300 mg tablet
Frequency	Daily	Daily	HS	Twice per day	Two tabs HS
Route	PO	PO	PO	PO	PO
Classification	Antidepressant	Antiulcer	Antipsychotic	Antihypertensive	Antimanic
Mechanism of Action	Blocks serotonin reuptake by adrenergic nerves, which normally release this	Interferes with gastric acid secretion by inhibiting the hydrogen potassium	May produce antipsychotic effects by interfering with dopamine	May reduce blood pressure by inhibiting conversion of angiotensin I to	May increase presynaptic degradation of the catecholamine neurotrans

	neurotransmitter from their storage sites when activated by a nerve impulse, which may elevate mood and reduce depression.	adenosine triphosphate's enzyme system, or proton pump, in gastric parietal cells.	binding to dopamine type 2 (D2)-receptor sites in the brain and by antagonizing serotonin 5-HT ₂ , dopamine type 1 (D1), histamine H ₁ , and adrenergic alpha ₁ and alpha ₂ receptors.	angiotensin II, which is a vasoconstrictor that also stimulates adrenal cortex to secrete aldosterone that reduces sodium and water reabsorption and increases their excretion, thereby reducing blood pressure.	inhibits dopamine, norepinephrine, and serotonin; inhibits their release at neuronal synapses; and decreases postsynaptic receptor sensitivity. These actions may correct overactive catecholamine systems in patients with mania.
Reason Client Taking	Depression	Reduce GERD symptoms	Reduce depressive episodes of bipolar disorder	Reduce hypertension	To treat or control mania episode of bipolar disorder
Contraindications (2)	1) Congenital long QT syndrome 2) Pimozide therapy, use within 14 days of MAO inhibitor therapy	1) Concurrent therapy with rilpivirine-containing products 2) Hypersensitivity to omeprazole, other proton pump inhibitors, substituted benzimidazoles, or their	1) Hypersensitivity to quetiapine or its component	1) Diabetes 2) Renal impairment	1) Blood dyscrasias 2) Bone marrow depression

		components			
Side Effects/Adverse Reactions (2)	1) CVA 2) Acute renal failure	1) Malaise 2) Hypoglycemia	1) Depression 2) DRESS	1) Depression 2) Orthostatic hypotension	1) Confusion 2) Leukocytosis
Nursing Considerations (2)	1) Monitor patient for possible serotonin syndrome, when dosage increases and which may include agitation, chills, confusion, diaphoresis, diarrhea, fever, hyperactive reflexes, poor coordination, restlessness, shaking, talking or acting with uncontrolled excitement, tremor, and twitching. In its most severe form, serotonin syndrome can resemble neuroleptic malignant syndrome, which includes a	1) Give omeprazole before meals, preferably in the morning for once-daily dosing. 2) Know that because drug can interfere with absorption of vitamin B12, monitor patient for macrocytic anemia.	1) Know that quetiapine shouldn't be used for elderly patients with dementia-related psychosis because drug increases the risk of death in these patients. 2) Monitor patients (particularly children and young adults) closely for suicidal tendencies, especially when therapy starts or dosage changes, because depression may	1) Be aware that Lisinopril should not be given to a patient who is hemodynamically unstable after an acute MI. 2) Monitor blood pressure often, especially during the first 2 weeks of therapy and whenever the dose is increased. If excessive hypotension develops, expect to withhold drug for several days.	1) Administer lithium after meals to slow absorption from GI tract and reduce adverse reactions. Dilute syrup with juice or other flavored drink before giving. 2) Note that 5 ml of lithium citrate equals 8 mEq of lithium ion or 300 mg of lithium carbonate.

	<p>high fever, muscle rigidity, or autonomic instability with possible changes in vital signs, and mental status changes.</p> <p>2) Monitor patient closely for suicidal tendencies, especially when therapy starts.</p>		worsen temporarily during these times.		
Key Nursing Assessment(s)/Lab(s) Prior to Administration	<p>1) Assess for serotonin syndrome (mental changes [agitation, hallucinations, coma], autonomic instability [tachycardia, labile BP, hyperthermia], neuromuscular aberrations [hyperreflexia, incoordination], and/ or GI symptoms [nausea, vomiting, diarrhea]), especially in</p>	<p>1) May cause elevated AST, ALT, alkaline phosphatase, and bilirubin.</p> <p>2) Monitor CBC with differential periodically during therapy.</p>	<p>1) May cause elevated total cholesterol and triglycerides.</p> <p>2) May cause asymptomatic increase in AST and ALT.</p>	<p>1) May cause hyperkalemia</p> <p>2) Monitor renal function. May cause increase in BUN and serum creatinine.</p>	<p>1) Assess patient for signs and symptoms of lithium toxicity (vomiting, diarrhea, slurred speech, decreased coordination, drowsiness, muscle weakness, or twitching). If these occur, report before administering next dose.</p>

	<p>patients taking other serotonergic drugs (SSRIs, SNRIs, triptans).</p> <p>2) Monitor electrolytes (potassium and magnesium) in patients at risk for electrolyte imbalances prior to and periodically during therapy.</p>				<p>2) Evaluate renal and thyroid function, WBC with differential, serum electrolytes , and glucose periodically during therapy.</p>
Client Teaching needs (2)	<p>1) Inform patient that citalopram's full effects may take up to 4 weeks.</p> <p>2) Caution patient not to stop citalopram abruptly because doing so may lead to serious adverse reactions.</p>	<p>1) Advise patient to notify prescriber immediately about abdominal pain or diarrhea.</p> <p>2) Instruct patient to inform all prescribers of omeprazole therapy.</p>	<p>1) Instruct patient to take quetiapine with food to reduce stomach upset.</p> <p>2) Instruct patient to rise slowly from a lying or seated position to reduce the risk of dizziness or fainting.</p>	<p>1) Explain that Lisinopril helps to control, but do not cure, hypertension and that patient may need lifelong therapy.</p> <p>2) Advise patient to take Lisinopril at the same time every day.</p>	<p>1) Advise patient to take lithium with or after meals to minimize adverse reactions.</p> <p>2) Instruct patient to swallow E.R. form whole.</p>

Hospital Medications (5 required)

Brand/Generic	Apresoline (hydralazine)	Cholac (lactulose)	Protonix/p (antoprazole)	Prinivil (lisinopril)	Zofran (ondansetron)
Dose	10 mg = 0.5 mL	200 g = 300 mL	20 mg tablet	20 mg tablet	4 mg = 2 mL Injectable
Frequency	Every 4 hours PRN	Every 6 hours	Daily	Twice per day	Every 6 hours PRN
Route	IV	Rectal tube	PO	PO	IV
Classification	Antihypertensive vasodilator	Ammonia reducer, laxative	Antiulcer	Antihypertensive	Antiemetic
Mechanism of Action	May act in a manner that resembles organic nitrates and sodium nitroprusside, except that hydralazine is selective for arteries. It exerts a direct vasodilating effect on vascular smooth muscle. It interferes with calcium movement in vascular smooth muscle by altering cellular calcium	Arrives unchanged in the colon, where it breaks down into acetic and formic acids, acidifying fecal contents. Acidification leads to increased osmotic pressure in the colon, which, in turn, increases stool water content and softens stool. Also, lactulose makes intestinal	Inhibits the hydrogen-potassium-adenosine triphosphatase enzymes in gastric parietal cells.	May reduce blood pressure by inhibiting conversion of angiotensin I to angiotensin II, which is a vasoconstrictor that also stimulates adrenal cortex to secrete aldosterone that reduces sodium and water reabsorption and increases their excretion, thereby reducing blood pressure.	Blocks serotonin receptors centrally in the chemoreceptor trigger zone and peripherally at vagal nerve terminals in the intestine.

	metabolism. It dilates arteries, not veins, which minimizes orthostatic hypotension and increases cardiac output and cerebral blood flow. It causes reflex autonomic response that increases cardiac output, heart rate, and left ventricular ejection fraction. It has a positive inotropic effect on the heart.	contents more acidic than blood. This prevents ammonia diffusion from intestine into blood, as occurs in hepatic encephalopathy. The trapped ammonia is converted into ammonia ions and is expelled in feces with other nitrogenous wastes.			
Reason Client Taking	Reduce blood pressure	To prevent and treat hepatic encephalopathy	Reduce GERD symptoms	Reduce hypertension	Reduce nausea
Contraindications (2)	1) Coronary artery disease 2) Mitral valve disease	1) Low-galactose diet 2) Hypersensitivity to lactulose or its components	1) Acute interstitial nephritis 2) Bronchospasm	1) Diabetes 2) Renal impairment	1) Concomitant use of apomorphine. 2) Congenital long QT syndrome
Side Effects/Adverse	1) Peripheral	1) Hyperglycemia	1)	1)	1) Dystonia

Reactions (2)	neuritis 2) Dyspnea	mia 2) Hybernatre mia	Confusion 2) <i>Clostridium difficile</i> associated with diarrhea	Depression 2) Orthostatic hypotension	2) Torsade's de pointes
Nursing Considerations (2)	1) Monitor blood pressure and pulse rate regularly and weigh patient daily during therapy. 2) Expect to treat peripheral neuritis with pyridoxine.	1)a When giving lactulose by retention enema, us a rectal tube with a balloon to help patient retain enema for 30 to 60 minutes. If not retained for at least 30 minutes, repeat dose. Be sure to deflate balloon and remove rectal tube after completing administration. 2) Monitor blood ammonia level in patient with hepatic encephalopathy. Also watch for dehydratio	1) Don't give within 4 weeks of testing for <i>Helicobacter pylori</i> because may lead to false-negative results. 2) Expect to monitor PT/INR during therapy if patient takes an oral anticoagulant.	1) Be aware that Lisinopril should not be given to a patient who is hemodynamically unstable after an acute MI. 2) Monitor blood pressure often, especially during the first 2 weeks of therapy and whenever the dose is increase. If excessive hypotension develops, expect to withhold drug for several days.	1) Place disintegrating tablet or oral soluble film on patient's tongue immediately after opening package. It dissolves in seconds. 2) Use calibrated container or oral syringe to measure dose of oral solution.

		n, hypernatremia, and hypokalemia when giving higher lactulose doses to treat this condition.			
Key Nursing Assessment(s)/Lab(s) Prior to Administration	<p>1) Monitor ANA titer, CBC, and lupus erythematosus cell preparation before therapy and periodically as ordered during long-term treatment.</p> <p>2) May cause a positive direct Coombs' test result.</p>	<p>1) Decreases blood ammonia concentrations by 25–50%.</p> <p>2) Expect to monitor diabetic patient for hyperglycemia because lactulose contains galactose and lactose.</p>	<p>1) May cause hypomagnesemia. Monitor serum magnesium prior to and periodically during therapy.</p> <p>2) May cause abnormal liver function tests, including elevated AST, ALT, alkaline phosphatase, and bilirubin.</p>	<p>1) May cause hyperkalemia</p> <p>2) Monitor renal function. May cause increase in BUN and serum creatinine.</p>	<p>1) Monitor ECG in patients with hypokalemia, hypomagnesemia, HF, bradyarrhythmias, or patients taking concomitant medications that prolong the QT interval.</p> <p>2) May cause transient elevation in serum bilirubin, AST, and ALT levels.</p>
Client Teaching needs (2)	<p>1) Instruct patient to take hydralazine tablets with food.</p> <p>2) Instruct patient to immediately notify prescriber about fever,</p>	<p>1) Advise patient to take lactulose with food or dilute with juice to reduce sweet taste.</p> <p>2) Direct patient not to use other</p>	<p>1) Instruct patient to swallow tablets whole and not to chew or crush them.</p>	<p>1) Explain that Lisinopril helps to control, but does not cure, hypertension and that patient may need lifelong</p>	<p>1) Advise patient to use calibrated container or oral syringe to measure oral solution.</p> <p>2) Advise patient to immediately</p>

	joint and muscle aches, and sore throat.	laxatives while taking lactulose.	2) Instruct patient to take 30 minutes before a meal.	therapy. 2) Advise patient to take Lisinopril at the same time every day.	report signs of hypersensitivity, such as rash.
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Medications Reference (APA):

2019 Nurse's Drug Handbook (18th ed.). (2019). Jones & Bartlett Learning.

Up-to-Date Drug Information. (2019). Retrieved from <https://www.drugguide.com/ddo/>

Assessment

Physical Exam (18 points)

<p>GENERAL (1 point): Alertness: A&Ox2 Pt is alert and oriented to person/place, but not time/current situation. Orientation: A&Ox2 Pt is alert and oriented to person/place, but not time/current Distress: No acute distress Overall appearance: Appears stated age</p>	<p>Patient is A&Ox2, lethargic, no acute distress, and appears stated age.</p>
<p>INTEGUMENTARY (2 points): Skin color: Pink Character: PWD Temperature: Warm Turgor: Appropriate for age Rashes: No noted rashes Bruises: No noted bruises Wounds: No noted wounds Braden Score: 12 Drains present: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Type: Rectal tube</p>	<p>Skin is PWD (pink, warm and dry) and intact. Skin turgor is appropriate for age. No noted lesions or rashes. Braden Score of 12 indicates mild risk for developing pressure ulcer.</p>

<p>HEENT (1 point): Head/Neck: Head is normocephalic and atraumatic. Trachea is midline Ears: TMs pearly gray bilaterally. Eyes: PERRLA and EOMI bilaterally Nose: Patient currently has nose bleed in both nares due to unsuccessful NG tube placement. Teeth: Patient has no teeth (multiple tooth extraction)</p>	<p>Patient has no palpable lymph nodes. Head is normocephalic and atraumatic. Eyes are PERRLA and EOMI bilaterally. TMs pearly gray bilaterally. No noted deviated septum, polyps or turbinates. Moist mucus membranes, no noted exudate, lesions, erythema around the head and neck. Patient currently has nose bleed in both nares due to unsuccessful NG tube placement. Trachea is midline. Patient has no teeth, no dentures noted.</p>
<p>CARDIOVASCULAR (2 points): Heart sounds: S1, S2, S3, S4, murmur etc. Cardiac rhythm (if applicable): RRR Peripheral Pulses: dorsalis pedis 2+ bilaterally Capillary refill: <3 seconds upper and lower extremities bilaterally Neck Vein Distention: Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Edema Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Location of Edema:</p>	<p>S1, S2 detected. RRR (regular, rate and rhythm). No noted murmurs, gallops, or rubs. Capillary refill less than 3 seconds. 2+ pedal pulses bilaterally. No noted deformities. No noted edema.</p>
<p>RESPIRATORY (2 points): Accessory muscle use: Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Breath Sounds: Location, character</p>	<p>Lungs CTA (clear to auscultation) bilaterally. No noted wheezes, rhonchi or crackles.</p>
<p>GASTROINTESTINAL (2 points): Diet at home: Regular Current Diet: NPO Height: 167cm Weight: 83.5kg Auscultation Bowel sounds: Present in all four quadrants (hypoactive) Last BM: 10/02/19 at 1700 via rectal tube Palpation: Pain, Mass etc.: Inspection: No noted lesions or rashes Distention: Some distention from lactulose administration Incisions: No noted incisions Scars: No noted scars Drains: Rectal tube Wounds: No noted wounds Ostomy: Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Nasogastric: Y <input type="checkbox"/> N <input checked="" type="checkbox"/></p>	<p>I did not palpate abdomen. Bowel sounds present in all four quadrants (hypoactive). Patient is NPO. Rectal tube administered at 1300. NG tube administration unsuccessful.</p>

<p>Size: Feeding tubes/PEG tube Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Type:</p>	
<p>GENITOURINARY (2 Points): Color: Yellow Character: Yellow color, no foul odor Quantity of urine: 700 mL Pain with urination: Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Dialysis: Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Inspection of genitals: I did not inspect genitals Catheter: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Type: Straight catheter Size: 16 FR</p>	<p>Patient retains urine and uses a straight catheter.</p>
<p>MUSCULOSKELETAL (2 points): Neurovascular status: All 4 extremities are atraumatic, well developed, and move without difficulty (MAEW). No noted erythema, cyanosis, or edema. ROM: Intact in the upper and lower extremities bilaterally and moves without difficulty Supportive devices: Walker Strength: 5/5 in upper and lower extremities bilaterally ADL Assistance: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Fall Risk: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Fall Score: 85 Activity/Mobility Status: Patient is bedrest Independent (up ad lib) <input type="checkbox"/> Needs assistance with equipment <input type="checkbox"/> Needs support to stand and walk <input type="checkbox"/></p>	<p>Patient uses assistive devices at home. Hand grips equal bilaterally. DTRs intact. ROM intact in the upper and lower extremities bilaterally, 5/5 musculoskeletal strength in upper and lower extremities bilaterally and moves without difficulty (MAEW). No noted erythema, cyanosis, or edema. Patient is a fall risk as evidenced by Morse Fall Scale of 85. Patient is bedrest.</p>
<p>NEUROLOGICAL (2 points): MAEW: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> PERLA: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Strength Equal: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> if no - Legs <input type="checkbox"/> Arms <input type="checkbox"/> Both <input type="checkbox"/> Orientation: Mental Status: Altered mental status Speech: Normal Sensory: Intact</p>	<p>Patient is A&Ox2 and lethargic. He is able to orient person/place, but not time/current situation. Muscle strength and sensation intact in upper and lower extremities bilaterally. No noted nuchal rigidity or meningeal signs.</p>

LOC: Lethargic	
PSYCHOSOCIAL/CULTURAL (2 points): Coping method(s): Listening to music Developmental level: Appropriate for age Religion & what it means to pt.: Patient states that he is of Christian faith. Personal/Family Data (Think about home environment, family structure, and available family support): Pt lives with wife at home where he feels safe; however, worsening altered mental status had him transferred to Odd Fellow nursing home.	Patient's coping method is listening to music. Patient states that he is of Christian faith and to be kind towards others. Patient is married, and lives with his wife where he feels safe. He was recently transferred to Odd Fellow nursing home for his altered mental status. His wife seems to be concerned of his welfare.

Vital Signs, 2 sets (5 points)

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
1210	85	178/86	16	37.2 C	97%
1315	100	179/94	20	37.4 C	99%

Vital Sign Trends:

Pain Assessment, 2 sets (2 points)

Time	Scale	Location	Severity	Characteristics	Interventions
1210	0 out of a 0-10 pain scale	N/A	N/A	N/A	N/A
1430	0 out of a 0-10 pain scale	N/A	N/A	N/A	N/A

IV Assessment (2 Points)

IV Assessment	Fluid Type/Rate or Saline Lock
Size of IV: 18 gauge	

Location of IV: Right peripheral Date on IV: 10/01/2019 Patency of IV: Patent, no phlebitis/infiltration present, infusing without difficulty Signs of erythema, drainage, etc.: No noted signs of erythema, drainage, etc. IV dressing assessment: Dry and intact	0.9% NS IV solution 1,000 mL IV drip.
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Intake and Output (2 points)

Intake (in mL)	Output (in mL)
385 mL	700 mL

Nursing Care

Summary of Care (2 points)

Overview of care: The patient in room #443 is 60 year old male with a history of advanced cirrhosis of the liver and frequent hepatic encephalopathy (altered level of consciousness as a result of liver failure). Patient was later determined to have worsening hyperammonemia (excess ammonia in the blood) and hepatic encephalopathy, as well as possible colonic obstruction. He was not talkative and showed signs of discomfort, but stated he had no pain. He did answer questions pertaining to his name, pain level, and location, but unable to hold conversation. Patient is NPO and has 18 gauge in right peripheral that is dry and intact. A rectal tube was placed at 1300 and placement of an NG tube was scheduled but unsuccessful. The unsuccessful NG tube placement resulted in nasal bleeding and caused the patient to vomit. At 1315, the patient's vital signs were taken, and show an elevated blood pressure of 179/94. At 1330 hydralazine was administered to reduce his blood pressure. A bladder ultrasound was also performed, and found 20 mL of urine. At approximately 1500 1L of lactulose with normal saline flush was rectally administered for the elevated ammonia level found in the patient's blood. At 1515 Zofran was administered for nausea. At 1539 hydralazine was administered again to

reduce blood pressure. Abdominal x-ray results revealed that the patient has a bowel obstruction between the small and large intestines. Patient is also retaining urine requiring the need for straight catheterization. Patient complained of being hungry.

Procedures/testing done: Rectal tube; Unsuccessful NG tube; Bladder ultrasound; X-ray abdomen series and chest

Complaints/Issues: Unable to administer NG tube, and patient complaining of being hungry

Vital signs (stable/unstable): Elevated blood pressure

Tolerating diet, activity, etc.: Patient is NPO

Physician notifications: Unsuccessful NG tube placement

Future plans for patient: Radiology may have to place NG tube. Patient may be placed in hospice.

Discharge Planning (2 points)

Discharge location: Odd Fellows nursing home

Home health needs (if applicable): Assistance with ADLs

Equipment needs (if applicable): Wheelchair, walker, gait belt

Follow up plan with family support:

- Slow or reverse the cause of the liver disease
- Prevent, identify, and treat the complications of hepatic encephalopathy
- Protect the liver from other sources of damage
- Manage symptoms and blood abnormalities
- Determine if and when a liver transplant is needed
- Provide assistance with ADLs at home

Hepatic encephalopathy can sometimes be treated and normal brain function restored. Treatment involves getting other stressors, such as infections and bleeding under control, or taking certain medicines, such as lactulose (which will cause softening of the stool) or an antibiotic (Hinkle & Cheever, 2018).

Education needs:

Patient education: Hepatic Encephalopathy

- Teach patient what is hepatic encephalopathy.
- Characteristics:
 - Confusion
 - Mood changes
 - Poor memory
 - Shakiness of hands and balance problems
 - Trouble speaking, drawing, and writing clearly
 - Moving, talking, and thinking more slowly than normal
- What causes hepatic encephalopathy?
 - Bleeding in the stomach, intestines, or digestive tract
 - Infection
 - Constipation
 - Taking certain medicines
 - Dehydration
 - Surgery
- Lab tests for encephalopathy:
 - Ammonia levels in the blood may be high
 - BMP/CMP
 - PT/INR
 - PTT
- What can prevent hepatic encephalopathy?
 - Follow special diet
 - Medication compliance
 - Inform provider of other medications taken
 - Check with provider before starting a new medicine
 - Never use alcohol or illicit drugs
 - Inform medical team if feeling drowsy or forgetful or trouble thinking clearly
- Provide assistance with ADLs at home
 - Educate patient and wife/family
 - Medication compliance

Nursing Diagnosis (15 points)

Must be NANDA approved nursing diagnosis and listed in order of priority

<p>Nursing Diagnosis</p> <ul style="list-style-type: none"> • Include full nursing diagnosis with “related to” and “as evidenced by” components 	<p>Rational</p> <ul style="list-style-type: none"> • Explain why the nursing diagnosis was chosen 	<p>Intervention (2 per dx)</p>	<p>Evaluation</p> <ul style="list-style-type: none"> • How did the patient/family respond to the nurse’s actions? • Client response, status of goals and outcomes, modifications to plan.
<p>1. Risk for acute confusion related to liver failure as evidence by worsening hepatic encephalopathy.</p>	<p>The patient was admitted for altered mental status.</p>	<p>1. Observe for signs and symptoms of behavioral change and mentation: lethargy, confusion, drowsiness, slurring of speech, and irritability.</p> <p>2. Review current medication regimen . Note adverse drug reactions and effects of medication to the patient.</p>	<p>* The patient is cooperative and wife agrees with intervention.</p> <p>* The patient and family understand that the assessment of behavior and mental status is important because of fluctuating nature of impending hepatic coma. Initiating behavioral/lifestyle changes can prevent or minimize recurrence of problem.</p>
<p>2. Risk for injury related to environmental conditions interacting with patient’s impaired immune system as evidence by having a low platelet count.</p>	<p>The patient has an impaired immune system as evidence by lab results.</p>	<p>1. Observe for presence of petechiae, ecchymosis, bleeding from one or more sites.</p> <p>2. Monitor Hgb/Hct and clotting factors</p>	<p>* The patient is cooperative and wife agrees with intervention.</p> <p>* The patient and family understand that subacute disseminated intravascular coagulation (DIC) may develop secondary to altered clotting factors. Also, indicators of anemia, active bleeding, or impending complications may occur. The goal is to maintain homeostasis with absence</p>

			of bleeding.
<p>3. Risk for imbalanced nutrition: Less than body requirements: related to insufficient intake of nutrients to meet metabolic needs as evidence by vomiting.</p>	<p>The patient had vomited several times, incurred blood loss, and is NPO without tube feeding.</p>	<p>1. Provide tube feedings, TPN, and lipids if indicated.</p> <p>2. Monitor laboratory studies: serum glucose, albumin, total protein, and ammonia levels.</p>	<p>* The patient is cooperative and wife agrees with intervention.</p> <p>* The patient and family understand that tube feedings may be required to supplement diet or to provide nutrients when patient is too nauseated or anorexic to eat or when esophageal varices interfere with oral intake. Glucose may be decreased because of impaired gluconeogenesis, depleted glycogen stores, or inadequate intake. Protein may be low because of impaired metabolism, decreased hepatic synthesis, or loss into peritoneal cavity (ascites). Elevation of ammonia level may require restriction of protein intake to prevent serious complications. The goal is experience no signs of malnutrition.</p>
<p>4. Fatigue related to decreased metabolic energy production as evidence by changes in liver function.</p>	<p>The patient is severely lethargic.</p>	<p>1. Observe physiological reaction to activities such as any alterations in BP, respiratory rate, or heart rate.</p> <p>2. Assess the patient's routine recommendation and over-the-counter drugs.</p>	<p>* The patient is cooperative and wife agrees with intervention.</p> <p>* The patient and family understand that tolerance varies significantly, depending on the phase of the disease progression, nutrition condition, fluid balance, and quantity or sort of opportunistic</p>

			<p>diseases that patient has been subjected to. Fatigue may be a medication side effect or an indication of a drug interaction. The patient, family, and nurse must perform particular notice to the patient's utilization of beta-blockers, calcium channel blockers, tranquilizers, alcohol, muscle relaxants, and sedatives. The goal and outcome is to have the patient explain an energy conservation plan to offset his fatigue.</p>
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Other References (APA):

Hinkle, J.L., & Cheever, K.H. (2018). *Brunner & Suddarth's Textbook of Medical Surgical Nursing (14th ed.)*. Philadelphia, PA: Wolters Kluwer Health Lippincott William & Wilkins.

Swearingen, P. L. (2016). *All-in-one nursing care planning resource: Medical-surgical, pediatric, maternity, psychiatric nursing care plans*. St. Louis, MO: Elsevier/Mosby.

Concept Map (20 Points):

Subjective Data

Fatigue
Nausea/vomiting

Objective Data

Confusion
Bruising and bleeding easily
Malaise
Anemia
Labs

Patient Information

A 65-year-old male admitted to the ED from Odd Fellows nursing home for altered mental status on 10/01/2019. The patient has a history of advanced cirrhosis of the liver and frequent hepatic encephalopathy. The patient was later determined to have worsening hyperammonemia (excess ammonia in the blood) and hepatic encephalopathy.

Nursing Diagnosis/Outcomes

Risk for acute confusion related to liver failure as evidence by worsening hepatic encephalopathy.
Outcome: To initiate behavioral/lifestyle changes that prevents or minimizes the recurrence of problem.

Risk for injury related to environmental conditions interacting with patient's impaired immune system as evidence by having a low platelet count.
Outcome: to maintain homeostasis with absence of bleeding.

Risk for imbalanced nutrition: Less than body requirements: related to insufficient intake of nutrients to meet metabolic needs as evidence by vomiting.
Outcome: To experience no signs of malnutrition.

Fatigue related to decreased metabolic energy production as evidence by changes in liver function.
Outcome: To have the patient explain energy conservation plan to offset his fatigue.

Nursing Interventions

- * **Observe** for signs and symptoms of behavioral change and mentation: lethargy, confusion, drowsiness, slurring of speech, and irritability.
- * Review current medication regimen. Note adverse drug reactions and effects of medication to the patient.
- * Observe for presence of petechiae, ecchymosis, bleeding from one or more sites.
- * Monitor Hgb/Hct and clotting factors
- * Provide tube feedings, TPN, and lipids if indicated.
- * Monitor laboratory studies: serum glucose, albumin, total protein, and ammonia levels.
- * **Observe** physiological reaction to activities such as any alterations in BP, respiratory rate, or heart rate.
- * Assess the patient's routine recommendation and over-the-counter drugs.

