N321 Care Plan # 2

Lakeview College of Nursing

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Demographics (3 points)

Date of Admission 11/2/21	**Patient Initials** W.J.W.	**Age** 59 y/o	**Gender** Female
Race/Ethnicity Caucasian	**Occupation** Homemaker (Retired)	**Marital Status** Divorced	**Allergies** **-Toradol:** urticaria **-Trace Metals:** severe inflammation **-Tramadol:** urticaria
Code Status Full Code	**Height** 160 cm	**Weight** 92.6 kg	

Medical History (5 Points)

Past Medical History:

Abdominal pain (epigastric), abnormal gait, acidosis, acute flank pain, acute kidney injury, anxiety, asterixis, confusion, essential hypertension, gastric ulcer, hematuria, hepatic steatosis, hyperammonemia, hypertension, hypokalemia, iron deficiency anemia, kidney stones, low blood pressure, morbid obesity, NASH, near syncope, perirectal abscess, rectal fistula, right bundle branch block, traumatic rhabdomyolysis

Past Surgical History

Esophagogastroduodenoscopy biopsy x4, colonoscopy x2, hemorrhoidectomy, debridement perirectal abscess, removal of stent via transurethral, cystoscopy retrograde pyelogram, cysto/uretero stricture, cystouretero w/stone removal, ureteroscopy and laser lithotripsy, cesarean section, tubal ligation, loss of teeth due to extraction

Family History:

Mother: breast cancer

Father: COPD

Child: brain cancer

Social History (tobacco/alcohol/drugs):

No prior alcohol, tobacco, or recreational drug use noted by the patient.

Assistive Devices:

The patient wears corrective lenses, no contacts.

Living Situation:

The patient lives with grandchildren at home.

Education Level:

Highschool. No learning barriers.

Admission Assessment

Chief Complaint (2 points):

Abdominal pain

History of present Illness (10 points):.

On November 2nd, a 59-year-old female with a past medical history of cirrhosis of the liver, chronic acidosis, and stomach ulcers arrived at the ER to be evaluated after she was having stomach problems for the past few months. Her granddaughter called EMS because she was concerned about the patient's shakiness and weakness. The pain was localized to the epigastric abdominal region. The patient reports having stomach problems for the "past few months". The patient described the pain as causing a lot of "nausea and vomiting" and reported a weight loss of 15-20 lbs over the past 2 months. The patient claimed that "sitting upright" helped a bit with her nausea and vomiting and that "moving around to much" made her more fatigued and shakier. The patient stated she took her prescribed medication ondansetron to help with her nausea and vomiting which did provide symptom relief. The patient stated the severity of her pain as being "very bad" during nausea and vomiting episodes, but that her pain was intermittent and would come and go.

Primary Diagnosis

Primary Diagnosis on Admission (2 points): Acute metabolic acidosis

Secondary Diagnosis (if applicable): Acute hepatic encephalopathy

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

Metabolic acidosis is due to an excess of acid in the body not related to CO2 (Capriotti, 2020). The primary contributor to metabolic acidosis is any metabolic condition that can lead to acidic end products. Examples of these acidic end products include ketones or lactic acid (Capriotti, 2020). Bicarbonate is essentially the opposite of acid and can balance it. Bicarbonate is what keeps our blood from becoming too acidic. Problems can occur when bicarbonate is lost due to kidney or GI tract disorders, which can ultimately reduce pH levels (Capriotti, 2020). PH in metabolic acidosis usually is under 7.35, while CO2 levels remain normal or lower than average. Chronic kidney disease can cause metabolic acidosis due to impaired ammonia excretion, reduced bicarbonate reabsorption, and the overproduction of synthesized acids concerning inadequate renal bicarbonate making (Capriotti, 2020). Bicarbonate losses can also be caused by GI tract disorders such as prolonged diarrhea. When these acids build up in the body, bicarbonate levels drop, and CO2 builds up in the lungs (Capriotti, 2020). A compensatory mechanism for this acid buildup is made up of the lungs along with the kidneys. This is due to high H+ ion levels triggering chemoreceptors, which stimulate the respiratory center to increase the patient's respiratory rate and begin the elimination of CO2, which increases the blood's pH (Capriotti, 2020). If the kidneys are healthy, they may help reabsorb HCO3- and excrete H+. Another major contributor to metabolic acidosis is diabetic ketoacidosis which involves an accumulation of keto-acids, resulting from the body not having enough insulin to allow blood sugar into your cells for energy. Instead, the liver breaks down fat for fuel (Capriotti, 2020).

Some common signs and symptoms of metabolic acidosis include rapid and shallow breathing, confusion, fatigue, headache, sleepiness, lack of appetite, jaundice, increased heart rate, and breath that smells fruity, a sign of diabetic ketoacidosis (Allen, 2018). The compensatory lung mechanism is the leading cause of respiratory distress. Symptoms of metabolic acidosis are often widespread due to abnormal serum potassium and calcium levels. The neurological symptoms can even include seizures, twitching, and coma (Capriotti, 2020). Along with lack of appetite, GI symptoms often include nausea and vomiting. The cardiovascular system's effects often present as hypotension, dysrhythmias, and decreased cardiac contractility (Capriotti, 2020). In a physical assessment, patients may be tachypneic, have weak pulses, have signs of dehydration, and have confusion and lethargy.

Treatment for metabolic acidosis is focused on solving the underlying cause of the condition. Fixing the root issue and restoring electrolytes and fluid balances is critical. In the hospital, sodium bicarbonate is utilized in severe cases of acidosis when pH is lower than 7.20 (Capritotti, 2020). However, caution must be taken when administering bicarbonate because if given too much, a rebound effect is possible and can lead to metabolic alkalosis. Electrolytes such as potassium and calcium may also need to be given if the patient is deficient. A serum electrolyte and an arterial blood gas test must be done to diagnose metabolic acidosis, which shows deficiencies, pH, PaCO2, and HCO3- (Capriotti, 2020).

The patient I treated displayed fatigue, lack of appetite, nausea, and vomiting. She was diagnosed with a serum electrolyte and an arterial blood gas test. The results showed a low calcium and potassium, along with a diagnosis of metabolic acidosis. Her potassium level was 2.8 mmol/L, and her calcium level was 7.7 mmol/L, so it is just barely lowered. The patient's vitals were not affected. However, it is common for respiration rates to increase and blood

pressure to decrease or increase metabolic acidosis. The treatment used on this patient initially was IV ceftriaxone, an antibiotic, likely for the patient's urinalysis, and a bicarbonate drip. She was later put on potassium citrate, morphine, and Bentyl. Potassium citrate helps remove acidity, and morphine was used for pain relief.

Pathophysiology References (2) (APA):

Allen, S. (2018, October 6). *Acidosis: Symptoms, causes, and treatment for Blood PH Levels*. Healthline. Retrieved November 14, 2021, from https://www.healthline.com/health/acidosis#symptoms.

Capriotti, T. (2020). *Davis Advantage for pathophysiology: Introductory concepts and clinical perspectives* (2nd ed.). F.A. Davis.

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	3.90-4.98	4.94	2.86	This low value could be due to nutritional deficiencies, the patient does have a hx of iron deficiency anemia, which is often linked to kidney and liver problems (Cafasso, 2018).
Hgb	12.0-15.5	14.6	8.4	Low Hgb levels in this patient could be the result of bleeding, the patient does have a history of stomach ulcers. This low value could also be caused by an iron deficiency anemia linked to kidney and liver problems (Davis, 2021).
Hct	35-45	43.1	25.4	Low Hct levels could be from bleeding but may also be related to the patient’s hx of iron deficiency anemia

				(Mayo Clinic, 2021).
Platelets	140-400	267	119	Low platelets may be due to the patient's hx of liver problems, which can cause platelet sequestration (Cleveland Clinic, 2020). Low platelets can also be due to the patient taking the medication losartan.
WBC	4.0-9.0	8.4	3.2	Low WBC levels may be due to nutritional deficiencies, or possibly a severe infection, and the patient's urinalysis did show signs of a possible infection (Mayo Clinic, 2020).
Neutrophils	40-70	76.1	60.9	Inflammation caused by the patient's hepatic steatosis or other chronic conditions may increase the patient's neutrophil levels (Xu et al., 2014).
Lymphocytes	10-20	16.9	26.0	Chronic inflammation possibly caused by the patient's hepatic or renal problems may increase lymphocyte levels (Mayo Clinic, 2021).
Monocytes	4.4-12.0	6.0	9.6	
Eosinophils	0.0-6.3	0.5	3.2	
Bands	0-700	N/A	N/A	

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	138	140	
K+	3.5-5.1	2.3	4.2	Low potassium levels can be due to the patients hx of NASH, or the patient's renal issues (Tabbaa, 2015).
Cl-	98-107	107	101	
CO2	22-29	8	36	The patient had metabolic acidosis which lowered her CO2 on admission, and high levels may be due the treatment for her metabolic acidosis (National Kidney Foundation, 2021).

Glucose	70-99	120	88	High glucose can be caused by an unhealthy diet or physical stress and pain. The patient also has a history of morbid obesity, so diet and lifestyle are likely the cause of glucose increase (Cleveland Clinic, 2020).
BUN	6-20	24	7	Increased BUN levels may be due to the patient's liver and kidney issues (Michigan Medicine, 2020).
Creatinine	0.50-1.00	1.88	0.98	Increased creatinine levels are also indicative of kidney issues, which the patient does have a hx of acute kidney injury (Michigan Medicine, 2020).
Albumin	3.5-5.2	4.1	N/A	
Calcium	8.4-10.5	7.7	7.4	Renal issues, a diet low in calcium, and hormonal menopausal changes may all contribute to lowered calcium levels in this patient (Kahn, 2019). The patient is also on amlodipine which can lower calcium levels.
Mag	1.6-2.6	2.4	N/A	
Phosphate	2.5-4.5	N/A	N/A	
Bilirubin	0.0-1.2	0.3	N/A	
Alk Phos	35-105	82	N/A	
AST	0-32	25	N/A	
ALT	0-33	13	N/A	
Amylase	30-110	N/A	N/A	
Lipase	10-140	32	N/A	
Lactic Acid	4.5-19.8	2.1	N/A	Liver and renal issues may cause a decreased lactic acid lab which disrupts a patient's acid-base pH balance (Whelan, 2018).

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	2-3	N/A	N/A	
PT	9.6-11.8 sec	N/A	N/A	
PTT	30-40 sec	N/A	N/A	
D-Dimer	≤ 250	N/A	N/A	
BNP	<125	N/A	N/A	
HDL	>60	N/A	N/A	
LDL	<130	N/A	N/A	
Cholesterol	<200	N/A	N/A	
Triglycerides	<150	N/A	N/A	
Hgb A1c	4-5.5%	N/A	N/A	
TSH	0.4-4.0	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 and clear	Yellow	N/A	
pH	5.0-8.0	6.0	N/A	
Specific Gravity	1.005-1.034	1.018	N/A	
Glucose	Normal	Normal	N/A	
Protein	Negative	2+	N/A	Protein found in urine normally indicates kidney issues, and the patient does have a hx of acute

				kidney injury (Mayo Clinic, 2020).
Ketones	Negative	Negative	N/A	
WBC	≤ 5	6	N/A	WBC in the urine may indicate inflammation in the urinary tract or kidneys, possibly caused by bacterial infection (Mayo Clinic, 2020).
RBC	0-3	4	N/A	Blood in the urine may be caused by a UTI, however in this patient it could also be caused by a kidney stone (Mayo Clinic, 2020).
Leukoesterase	Negative	2+	N/A	Positive leukocyte esterase in the urine often indicates infection or inflammation somewhere in the urinary tract, possibly caused by a kidney stone (Mayo Clinic, 2020**).**

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	Negative growth	Negative	N/A	
Blood Culture	Negative growth	Negative	N/A	
Sputum Culture	Negative growth	N/A	N/A	
Stool Culture	Negative growth	N/A	N/A	

Lab Correlations Reference (1) (APA):

Blood urea nitrogen (BUN) test. Blood Urea Nitrogen (BUN) Test | Michigan Medicine. (2020, December 17). Retrieved November 14, 2021, from https://www.uofmhealth.org/health-library/aa36271#:~:text=Urea%20is%20made%20in%20the,normally%2C%20your%20BUN%20level%20rises.

Cafasso, J. (2018, November 2). *Red Blood Cell Count (RBC): Purpose, procedure, and preparation*. Healthline. Retrieved November 14, 2021, from https://www.healthline.com/health/rbc-count#low-count.

Davis, C. P. (2021, February 18). *Hemoglobin: Normal, high, low levels, causes & symptoms*. MedicineNet. Retrieved November 14, 2021, from https://www.medicinenet.com/hemoglobin/article.htm.

Hyperglycemia: Causes, symptoms, treatments & prevention. Cleveland Clinic. (2020, February 11). Retrieved November 14, 2021, from https://my.clevelandclinic.org/health/diseases/9815-hyperglycemia-high-blood-sugar.

Kahn, A. (2019, July 31). *Hypocalcemia: Causes, symptoms, and treatment*. Healthline. Retrieved November 14, 2021, from https://www.healthline.com/health/calcium-deficiency-disease#causes.

Mayo Foundation for Medical Education and Research. (2020, April 21). *Protein in urine causes*. Mayo Clinic. Retrieved November 14, 2021, from https://www.mayoclinic.org/symptoms/protein-in-urine/basics/causes/sym-20050656.

Mayo Foundation for Medical Education and Research. (2020, November 24). *Low white blood cell count causes*. Mayo Clinic. Retrieved November 14, 2021, from https://www.mayoclinic.org/symptoms/low-white-blood-cell-count/basics/causes/sym-20050615.

Mayo Foundation for Medical Education and Research. (2021, July 22). *Hematocrit Test*. Mayo Clinic. Retrieved November 14, 2021, from https://www.mayoclinic.org/tests-procedures/hematocrit/about/pac-20384728.

Mayo Foundation for Medical Education and Research. (2021, July 22). *Lymphocytosis (high lymphocyte count) causes*. Mayo Clinic. Retrieved November 14, 2021, from https://www.mayoclinic.org/symptoms/lymphocytosis/basics/causes/sym-20050660.

Metabolic acidosis. National Kidney Foundation. (2021, February 11). Retrieved November 14, 2021, from https://www.kidney.org/atoz/content/metabolic-acidosis.

Tabbaa, A. (2015). *Low serum potassium levels associated with disease severity in children with nonalcoholic fatty liver disease*. Pediatric gastroenterology, hepatology & nutrition. Retrieved November 14, 2021, from https://pubmed.ncbi.nlm.nih.gov/26473136/.

Thrombocytopenia: Causes, symptoms & treatment. Cleveland Clinic. (2020, November 23). Retrieved November 14, 2021, from https://my.clevelandclinic.org/health/diseases/14430-thrombocytopenia.

Whelan, C. (2018, November 1). *Lactic acidosis: Symptoms, causes, treatment, and more*. Healthline. Retrieved November 14, 2021, from https://www.healthline.com/health/lactic-acidosis#:~:text=Lactic%20acidosis%20is%20a%20form,excess%20acid%20from%20their%20body.

Xu, R., Huang, H., Zhang, Z., & Wang, F.-S. (2014, May). *The role of neutrophils in the development of liver diseases*. Cellular & molecular immunology. Retrieved November 14, 2021, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4085492/.

Diagnostic Imaging

All Other Diagnostic Tests (5 points):

11/2/21: A 12 lead EKG was performed which showed a normal sinus rhythm and rate.

11/3/21: Another 12 lead EKG was performed which also showed a normal sinus rhythm and rate.

11/2/21: A CT of the patient's abdomen and pelvis was done with contrast, which showed small nonobstructive bilateral kidney stone.

11/9/21: The patient had a NM gastric emptying study done which showed delayed gastric emptying.

11/6/21: The patient had an ultrasound of the abdomen done which showed a fatty liver, which the patient had already been diagnosed with NASH.

Diagnostic Test Correlation (5 points):

-The EKGs were done to detect any heart abnormalities that could result from the effects of an electrolyte imbalances such as hypokalemia that may result from metabolic acidosis (Quinn, 2020).

-The CT was done to observe the kidneys, and find the source of the patient's abdominal pain, and poor urinalysis results.

-Gastric emptying studies are performed to determine the time is takes a meal to move through a person's stomach. It is used frequently in patients with symptoms of vomiting, gastroparesis, abdominal pain, early satiety, and pre-operative evaluation (Cleveland Clinic, 2020).

-Ultrasounds can help detect fatty livers, kidney stones, and other causes of stomach pain

(Mayfair Diagnostics, 2020).

Diagnostic Test Reference (1) (APA):

Gastric emptying solid scan: Imaging Institute. Cleveland Clinic. (2020). Retrieved November 14, 2021, from https://my.clevelandclinic.org/health/diagnostics/17017-gastric-emptying-solid-study.

Quinn, A. (2020, December 6). *What is the role of ECG in the diagnosis of metabolic acidosis?* Latest Medical News, Clinical Trials, Guidelines - Today on Medscape. Retrieved November 14, 2021, from https://www.medscape.com/answers/768268-156592/what-is-the-role-of-ecg-in-the-diagnosis-of-metabolic-acidosis.

What can an ultrasound see? What can an ultrasound see? | Mayfair Diagnostics. (2020, May 5). Retrieved November 14, 2021, from https://www.radiology.ca/article/what-can-ultrasound-see.

Current Medications (10 points, 1 point per completed med)
10 <u>different</u> medications must be completed

Home Medications (5 required)

Brand/Generic	Norvasc, amlodipine besylate	Cozaar, losartan potassium	Sellymin, sodium bicarbonate	Zofram, ondansetron hydrochloride	Protonix, pantoprazole sodium
Dose	5 mg	100 mg	1,950 mg (3 tabs)	4 mg	40 mg
Frequency	Daily	Daily	Daily	Every 8 hrs as needed for nausea and vomiting	Twice daily
Route	Orally	Orally	Orally	Orally	Orally
Classification	Pharm: calcium channel blocker Thera: antianginal, antihypertensive	Pharm: angiotensin II receptor blocker Thera: antihypertensive	Pharm: electrolyte Thera: antacid, electrolyte replenisher, systemic and urinary alkalizer	Pharm: selective serotonin receptor antagonist Thera: antiemetic	Pharm: proton pump inhibitor Thera: antiulcer
Mechanism of Action	Binds to cell membrane receptor sites on myocardial	Blocks binding of angiotensin II to receptor sites in many tissues,	Buffers excess hydrogen ions,	Blocks serotonin receptors centrally in the	Interferes with gastric acid secretion by inhibiting the

	and vascular smooth-muscle and inhibits influx of extracellular calcium ions across slow calcium channels. This leads to decreases in Bp, decreases in myocardial workload, and decreased oxygen demand.	including adrenal glands and vascular smooth muscle. It is a potent vasoconstrictor that also stimulates the adrenal cortex to secrete aldosterone. The inhibiting effects reduce blood pressure.	increases plasma bicarbonate level, and raises blood pH, thereby reversing metabolic acidosis	chemoreceptor trigger zone and peripherally at vagal nerve terminals in the intestines. This reduces nausea and vomiting by preventing serotonin release in small intestines, and by blocking signals to the CNS.	hydrogen-potassium-adenosine triphosphatase enzyme system or proton pump. Also inhibits the final step in gastric acid production.
Reason Client Taking	The patient is taking this medication to control her hypertension.	The patient is taking this medication to control her hypertension.	The patient takes this medication to treat her metabolic acidosis.	The patient takes this medication to help with her nausea and vomiting.	The patient takes this medication to help with the acidity of her stomach, to help her gastric ulcer heal.
Contraindications (2)	-Hypersensitivity to amlodipine -Hepatic impairment	-Hypersensitivity to losartan -NSAIDs, especially in the renally impaired elderly	-Hypocalcemia -In patients with excessive vomiting	-Hypersensitivity to ondansetron -Low potassium and magnesium levels	-Hypersensitivity to pantoprazole -Low magnesium levels
Side Effects/Adverse Reactions (2)	CNS: arrhythmias, hypotension GI: pancreatitis	CV: hypotension HEME: thrombocytopenia	CV: irregular heartbeat EENT: dry mouth	CNS: serotonin syndrome, hypotension CV: arrhythmias, prolonged QT interval	GI: c-diff associated diarrhea, hepatotoxicity MS: rhabdomyolysis
Nursing Considerations (2)	-Monitor patient with impaired hepatic function closely and expect to titrate dosage slowly when administrating. -Monitor blood pressure while adjusting dosage.	-In some patients this medication is more effective when given in 2 divided doses daily. -Monitor blood pressure and renal function studies to evaluate drug effectiveness.	-Monitor patient's sodium intake. -This medication should not be taken with dairy and should be taken 2 hrs away from other oral drugs.	-In hypokalemia or hypomagnesemia patient's, these imbalances should be corrected before ondansetron is started. -This medication may mask underlying conditions so monitor patient for decreased	-Monitor urine output because this medication may cause acute interstitial nephritis. -Monitor patient for bone fractures because proton pump inhibitors increase the risk of osteoporosis.

				bowel activity.	

Hospital Medications (5 required)

Brand/Generic	Bentyl, dicyclomine hydrochloride	Lovenox, enoxaparin sodium	Urocit-K, potassium citrate	MS Contin, morphine sulfate	Ativan, lorazepam
Dose	10 mg	40 mg = 0.4 ml	30 mEq	2 mg = 1 ml	1 mg
Frequency	4 times daily	Daily	Twice daily	Every 2 hrs as needed for severe pain	Every 6 hrs as needed for anxiety
Route	Orally	Subcutaneous	Orally	IV Push	Orally
Classification	Pharm: anticholinergic Thera: antispasmodic	Pharm: low-molecular-weight heparin Thera: anticoagulant	Pharm: electrolyte cation Thera: electrolyte replacement	Pharm: opioid Thera: opioid analgesic	Pharm: benzodiazepine Thera: anxiolytic

Mechanism of Action	Inhibits acetylcholine's muscarinic actions at postganglionic parasympathetic receptors in CNS, secretory glands, and smooth muscles. These actions relax smooth muscles and diminish and biliary, GI, and GU tract secretions.	Potentiates the action of antithrombin III, a coagulation inhibitor. By binding with antithrombin III, enoxaparin rapidly binds with and inactivates clotting factors. Without thrombin, fibrinogen can't convert to fibrin and clots can't form.	Acts as the major cation in intracellular fluid, activating many enzymatic reactions essential for physiologic processes, including nerve impulse transmission and cardiac and skeletal muscle contraction. Also helps maintain normal renal function and acid-base balance.	Binds with and activates opioid receptors in brain and spinal cord to produce analgesia and euphoria.	May potentiate the effects of gamma-aminobutyric acid and other inhibitory neurotransmitters by binding to specific benzodiazepine receptors in cortical and limbic areas of CNS. GABA inhibits excitatory stimulation, which helps control emotional behavior.
Reason Client Taking	The client takes this medication to treat irritable bowel syndrome.	The client takes this medication in the hospital to prevent DVT's due to restricted mobility during acute illness.	The patient is taking this medication to treat her hypokalemia.	The patient is taking this medication for severe pain relief related to her abdomen.	The patient is taking this medication to treat her anxiety.
Contraindications (2)	-Hypersensitivity to dicyclomine -GI obstruction	-Active bleeding -History of heparin induced thrombocytopenia	-Acute dehydration -Concurrent use with other forms of potassium.	-Use with anticholinergics may lead to severe constipation and urine retention -Use with antihypertensives may increase hypotension, and orthostatic hypotension risk	-Hypersensitivity to lorazepam -Concurrent use with opioids may increase the risk of respiratory depression.
Side Effects/Adverse Reactions (2)	GU: urine retention GI: heartburn, vomiting	HEME: hemorrhage, thrombocytopenia GI: hepatocellular liver injury	CV: arrhythmias, bradycardia GI: GI bleeding, bloody stools	RESP: respiratory depression, apnea CV: bradycardia, cardiac arrest	CNS: seizures, suicidal ideation HEME: thrombocytopenia
Nursing Considerations (2)	-Assess patient for tachycardia before giving	-The patient needs to notify prescriber if	-Administer with food to prevent	-Use extreme caution in patients with	-Before starting lorazepam therapy in a

	because this medication may increase heart rate. -Patient should not take an antacid or an antidiarrheal within two hours of this medication.	bleeding occurs, NSAIDs may increase the risk of bleeding. -When taking this drug, you should rotate injection sites and monitor for bruising.	gastric irritation. -Teach patient how to take her own radial pulse and advise her to notify prescriber about any changes in heart rate or rhythm.	conditions accompanied by hypercapnia, hypoxia, or a decreased respiratory reserve because this will increase the patient's risk of developing respiratory depression. -Morphine may have a prolonged duration and cumulative effects in patients with impaired hepatic or renal function.	patient with depression, make sure they already take an antidepressant, because of the increased risk of suicide in patients with untreated depression. -Use extreme caution when giving lorazepam to elderly patients, especially those with compromised respiratory function, because this drug can cause hypoventilation, respiratory depression, sedation, and unsteadiness.

Medications Reference (1) (APA):

Jones & Bartlett Learning. (2020). *2020 Nurse's Drug Handbook* (19th ed.).

Assessment

Physical Exam (18 points)

GENERAL (1 point): **Alertness:** **Orientation:** **Distress:** **Overall appearance:**	**Patient alert and responsive to verbal and painful stimuli.** **Patient is alert to person, place, time and situation.** **Patient did not appear to be in any pain or distress.** **Patients' appearance was appropriate for age.** **Patient appeared clean and well groomed.**
INTEGUMENTARY (2 points): **Skin color:** **Character:**	**Skin color was usual for ethnicity. No cyanosis, ecchymosis, jaundice, or erythema**

Temperature: **Turgor:** **Rashes:** **Bruises:** **Wounds:** . **Braden Score:** **Drains present: Y☐ N ☒** **Type:**	**noted.** **Patient's skin was dry.** **Patient was warm to the touch.** **Skin turgor was elastic.** **No rashes noted.** **Bruising on sides of abdomen noted (Sub-Q injection sites).** **No wounds noted.** **Braden: 20** **No drains present**
HEENT (1 point): **Head/Neck:** **Ears:** **Eyes:** **Nose:** **Teeth:**	**Head and neck were symmetrical** **No trauma to the head** **No tracheal deviation was presented, thyroid and lymph nodes were not palpable** **Eyes were symmetrical, sclera was white, no erythema, discharge, or conjunctiva.** **Patient does have vison problems. The patient uses glasses.** **Six cardinals were preformed, and pupils were equal round and reactive to light and accommodation.** **No discharge or erythema on the nose. Nose was midline of the face. No turbinate's, polyps, deviated symptom was seen.** **Patient had good dental care. The mucosa membrane was pink and moist. Rise and fall of the soft palate were seen. Some teeth were missing but the remaining are in good shape**
CARDIOVASCULAR (2 points): **Heart sounds:** **S1, S2, S3, S4, murmur etc.** **Cardiac rhythm (if applicable):** **Peripheral Pulses:** **Capillary refill:** **Neck Vein Distention: Y ☐ N ☒** **Edema Y ☐ N ☒** **Location of Edema:**	**Sinus Rhythm, Heart sounds S1 and S2 were heard.** **No murmurs or gallops detected. S3 and S4 were not heard.** **Peripheral pulses: 2+ and symmetric** **Capillary refill: After nail was blanched nail bed returned to normal in less than 2 secs** **No neck vein distention** **No edema**
RESPIRATORY (2 points): **Accessory muscle use: Y☐ N ☒** **Breath Sounds: Location, character**	**No use of accessory muscles.** **Respirations were unlabored.** **Respiration patter was normal.** **Breath sounds were clear.** **Lung sounds equal bilaterally in all lobes, including the right middle lobe, anterior and posterior**

GASTROINTESTINAL (2 points): **Diet at home:** **Current Diet** **Height:** **Weight:** **Auscultation Bowel sounds:** **Last BM:** **Palpation: Pain, Mass etc.:** **Inspection:** **Distention:** **Incisions:** **Scars:** **Drains:** **Wounds:** **Ostomy: Y ☐ N ☒** **Nasogastric: Y ☐ N ☒** **Size:** **Feeding tubes/PEG tube Y ☐ N ☐** **Type:**	**Regular** **Fat restricted diet** **160 cm** **92.6 kg** **Bowel sound active in all four quadrants.** **Last bowel movement was 11/9, pt denies having any diarrhea** **No masses or tenderness was felt upon palpitation** **No distention** **No incision** **No scars** **No drains** **No wounds** **No nasogastric, feeding, or PEG tubes**
GENITOURINARY (2 Points): **Color:** **Character:** **Quantity of urine:** **Pain with urination: Y ☐ N ☒** **Dialysis: Y ☐ N ☒** **Inspection of genitals:** **Catheter: Y ☐ N ☒** **Type:** **Size:**	**Patient's urine appeared light yellow.** **Patient's urine was clear.** **Patient urinated x1 150 ml** **No pain noted during urination.** **No dialysis.** **Genitals appeared clean with no odors noted.**
MUSCULOSKELETAL (2 points): **Neurovascular status:** **ROM:** **Supportive devices:** **Strength:** **ADL Assistance: Y☐ N ☒** **Fall Risk: Y ☒ N☐** **Fall Score:** **Activity/Mobility Status:** **Independent (up ad lib) ☐** **Needs assistance with equipment ☐** **Needs support to stand and walk☐**	**All extremities are warm to the touch with no edema noted. Nail beds are intact and appear pink with a <3 second cap refill.** **Patient has active range of motion. Patient can move all extremities well** **The patient does not use any supporting devices such as canes or walkers** **Patient does wear glasses** **Patient's strength is a 5 with active motion against full force resistance** **No ADL Assistance** **Fall Risk Score: 45** **Patient is independent and up ad lib** **Patient does not need any assistance with equipment.** **Patient does not need support to stand or walk**

NEUROLOGICAL (2 points): **MAEW: Y ☒ N☐** **PERLA: Y ☒ N☐** **Strength Equal: Y ☒ N ☐ if no -** **Legs ☐ Arms ☐ Both ☐** **Orientation:** **Mental Status:** **Speech:** **Sensory:** **LOC:**	**Patient moves all extremities well without assistance.** **Patients' pupils are equal, round, reactive to light and accommodation.** **Patient's strength is a 5 in all extremities.** **Patient is alert to person, place, situation and time.** **Cognition is normal and appropriate for age.** **Speech is clear and easy to understand.** **Sensory: Patient could feel when I assessed all her pulses as well as when I palpated her abdomen.** **Patient was alert, awake, and able to answer all questions.**
PSYCHOSOCIAL/CULTURAL (2 points): **Coping method(s):** **Developmental level:** **Religion & what it means to pt.:** **Personal/Family Data (Think about home environment, family structure, and available family support):**	**The patient states that spending time with her grandchildren helps her cope.** **Patients' development is appropriate for her age and education level. She has no problem reading or writing.** **Patient is not religious** **The patient is well supported at home, and lives with her grandchildren.**

Vital Signs, 2 sets (5 points)

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
0700	**67 beats per minute**	**102/60 mmHg**	**18 breaths per minute**	**37 degrees Celsius**	**96% on room air**
0900	**74 beats per minute**	**110/60 mmHg**	**19 breaths per minute**	**36.5 degrees Celsius**	**97% on room air**

Pain Assessment, 2 sets (2 points)

Time	Scale	Location	Severity	Characteristics	Interventions
0700	**Numeric**	**N/A**	**0/10**	**N/A**	**N/A**

0900	**Numeric**	**N/A**	**0/10**	**N/A**	**N/A**

IV Assessment (2 Points)

IV Assessment	**Fluid Type/Rate or Saline Lock**
Size of IV: **Location of IV:** **Date on IV:** **Patency of IV:** **Signs of erythema, drainage, etc.:** **IV dressing assessment:**	18 gauge Left peripheral forearm 11/2/21 IV is patent and flushes easily, no signs of phlebitis, infiltration, erythema, or drainage IV dressing clean, dry, and intact IV is saline locked

Intake and Output (2 points)

Intake (in mL)	**Output (in mL)**
250 ml water	**Urinated x1 150 mL**

Nursing Care

Summary of Care (2 points)

Overview of care:

The patient was fatigued, so she was resting most of the time I was at clinical. She was very kind and did not mind me being in her room while I asked her questions. I did perform a head-to-two assessment on her, along with giving her medications for the day, and taking her vitals. The patient only made small requests for water and for her room made darker.

Procedures/testing done:

The patient did not leave the floor during clinical for any testing or procedures.

Complaints/Issues:

The only complaint the patient had was that she was very fatigued, and that she is not a big fan of needles**.**

Vital signs (stable/unstable):

The patient's vital signs were stable throughout clinical.

Tolerating diet, activity, etc.:

The patient did not want to have physical therapy that day because she was very fatigued, but she did ambulate to the rest room once. The patient is also having a hard time keeping an appetite, but she did eat about half her breakfast.

Physician notifications:

The patient did not have any changes of status to notify the physician about.

Future plans for patient:

Future plans for this patient include monitoring her NASH and kidneys and getting her labs back in order so she can be discharged home to her family. She should also be educated on nutrition for her stomach issues, and hypertension. Education on metabolic acidosis and how to lower her risk of it happening again.

Discharge Planning (2 points)

Discharge location:

The patient will be discharged to her home in Mattoon where she lives with her grandchildren.

Home health needs (if applicable):

The patient requires no home health needs.

Equipment needs (if applicable):

The patient has no equipment needs.

Follow up plan:

The patient should continue to take her prescribed medications and attend all future appointments as scheduled.

Education needs:

The patient should be educated on taking her medications properly at home.

Nursing Diagnosis (15 points)
Must be NANDA approved nursing diagnosis and listed in order of priority

Nursing Diagnosis • Include full nursing diagnosis with "related to" and "as evidenced by" components	**Rational** • Explain why the nursing diagnosis was chosen	**Intervention (2 per dx)**	**Evaluation** • How did the patient/family respond to the nurse's actions? • Client response, status of goals and outcomes, modifications to plan.
1. Impaired gas exchange related to patient's metabolic acidosis as evidenced by the patient's abnormal arterial blood gases**.**	This nursing diagnosis was chosen because in metabolic acidosis the body often tries to compensate for acidity with respiratory effort so patients may breathe faster and deeper even leading to hypoventilation as the body tries to remain balanced.	1.Monitor oxygen saturation continuously using pulse oximeter and try to stay in 95-100% range. 2.Sit patient up in bed if breathing becomes difficult laying down.	The patient kept the pulse oximeter on, and the percent stayed within range, so this goal was met. The patient did not mind wearing the pulse oximeter. The patient did not want to sit up in bed because she was very fatigued, so I provided comfort measures and let her rest and she was happy to do so.
2. Risk for electrolyte imbalance related to the patient's metabolic acidosis as evidenced by patient's labs and her stating she has been "nauseous and vomiting with stomach pain" for the past few months.	This nursing diagnosis was chosen because metabolic acidosis commonly effects electrolytes, such as potassium, and causes it to move from cells to extracellular fluid, which can cause hypokalemia. Nausea and vomiting often accompanies metabolic acidosis which can lead to further electrolyte imbalances.	**1.** Administer electrolyte replacements, specifically potassium citrate which is an electrolyte replacement that treats hypokalemia. 2.Educate the patient on dietary sources of electrolytes such as legumes, leafy green vegetables, whole grains, nuts, and fruits, along with vitamin D being necessary for calcium absorption.	The patient enjoyed learning about why she is on certain medications, and she took all her prescribed medications, so this goal was met. After informing the patient on the importance of receiving enough electrolytes, she repeated back to me some good food choices, so I feel the patient was listening and understood most of what I taught her.

3. Acute pain related to the patient's metabolic acidosis as evidenced by the patient stating that she has had "nausea and vomiting" for the past few months.	This nursing diagnosis was chosen because the patient sought out medical attention for her abdominal pain.	1.Administer pain medication, morphine when the patient's pain is severe. 2Teach the patient appropriate diversional activities and relaxation techniques.	The patient was no longer in pain today, just fatigued so she requested no pain medication. The patient informed me that she often uses movies and TV to keep her mind off her pain when it gets severe. I also taught her the breathing technique of 4-5 sec inhale and 4-5 sec exhale which we did together.

Concept Map (20 Points):

Subjective Data

The patient reports “stomach pain” with “nausea and vomiting” for the past few months. She stated that her pain was “very bad” during episodes of nausea and vomiting, but that her pain was intermittent and not horrible all the time.

Objective Data

Vitals:
Pulse: 67 beats per min
Bp: 102/60
RR: 18 breaths per min
Temp: 37 C
Oxygen: 96% room air
Labs & diagnostics:
-Arterial blood gas-showed **metabolic acidosis**
-EKG-showed no heart disturbances
-CT of abdomen-showed kidney stones
-Gastric emptying study
-Ultrasound of abdomen to rule out other sources of patient’s pain
-Urinalysis showed protein, WBC, RBC, and leukoesterase in urine
-RBC related labs came back decreased
-Low calcium, K+, CO2, and lactic acid
-Increased BUN and creatinine

Patient Information

The patient is a 59 y/o female with a history of liver cirrhosis, and chronic acidosis, who reported to ER after a few months of abdominal pain accompanied by nausea and vomiting.

Nursing Diagnosis/Outcomes

- Impaired gas exchange related to patient’s metabolic acidosis as evidenced by the patient’s abnormal arterial blood gases.
The patient kept the pulse oximeter on, and the percent stayed within range, so this goal was met. The patient did not mind wearing the pulse oximeter.

The patient did not want to sit up in bed because she was very fatigued, so I provided comfort measures and let her rest and she was happy to do so.

-Risk for electrolyte imbalance related to the patient’s metabolic acidosis as evidenced by patient’s labs and her stating she has been “nauseous and vomiting with stomach pain” for the past few months
The patient enjoyed learning about why she is on certain medications, and she took all her prescribed medications, so this goal was met.
After informing the patient on the importance of receiving enough electrolytes, she repeated back to me some good food choices, so I feel the patient was listening and understood most of what I taught her.

- Acute pain related to the patient’s metabolic acidosis as evidenced by the patient stating that she has had “nausea and vomiting” for the past few months.
The patient was no longer in pain today, just fatigued so she requested no pain medication.
The patient informed me that she often uses movies and TV to keep her mind off her pain when it gets severe. I also taught her the breathing technique of 4-5 sec inhale and 4-5 sec exhale which we did together.

Nursing Interventions

- Monitor oxygen saturation continuously using pulse oximeter and try to stay in 95-100% range.
- Sit patient up in bed if breathing becomes difficult laying down
- Administer electrolyte replacements, specifically potassium citrate which is an electrolyte replacement that treats hypokalemia.
- Educate the patient on dietary sources of electrolytes such as legumes, leafy green vegetables, whole grains, nuts, and fruits, along with vitamin D being necessary for calcium absorption.
- Administer pain medication, morphine when the patient’s pain is severe.
- Teach the patient appropriate diversional activities and relaxation techniques.