Medications

Metoprolol succinate (Toprol) extended release tablet 50mg, hold if SBP <90 , HR<50

Pharmacological class: Beta-1- adrenergic blocker (Jones & Bartlett Learning, 2022). **Therapeutic class**: Antianginal, antihypertensive (Jones & Bartlett Learning, 2022). **The reason for taking:** To control high blood pressure. **Key nursing assessment:** Assess patient for worsening of heart failure because patient needs to be stabilized. Assess patient for glucose control, because metoprolol interferes with therapeutic effect of antidiabetic drugs (Jones & Bartlett Learning, 2022).

Continued on page 4.

Lab values/ Diagnostics

BUN 50 mg/dL **Normal:** 10-20mg/dl (Pagana et al., 2022). **Reason for abnormal**: Due to renal disease, excretory function of the kidneys decreases (Pagana et al., 2022).

Creatinine: 9.79mg/dL **Normal**: 0.5-1.2mg/dL (Pagana et al., 2022). **Reason for abnormal**: Due to renal disease (Pagana et al., 2022).

Troponin: 287 ng/L **Normal:** 0-4 ng/L **Reason for abnormal:** damage to myocardial muscle cells (Pagana et al., 2022).

Phosphorus 7.6 mg/dL **Normal**: 2.34-4.8 g/dL **Reason for abnormal**: advanced kidney disease (Pagana et al., 2022).

B natriuretic peptide: 10,710 **Normal**: 0-100.0 pg/mL **Reason for abnormal**: renal failure (Pagana et al., 2022).

Demographic Data

Date of Admission: 4/3/24 0301
Admission Diagnosis/Chief Complaint: ESRD/ /shortness of breath, weakness
Age: 47
Gender: female
Race/Ethnicity: African American
Allergies: Morphine (anaphylactic reaction)
Code Status: full
Height in cm: 160 cm

Admission History

The patient was brought to ED on stretchers on 4/3/24 early in the morning. The patient was short of breath with decreased LOC. The patient had oxygen mask on. Her Oxygen saturation was 70-75% per EMS. Her LOC was declining even with the oxygen on. She was in severe distress. The patient had several health problems: HTN, acute on chronic HF, ac.pulmonary edema, Increased troponin, ESRD , Sepsis (unknown cause), lactic acidosis.

OLD CARTS: The patient came to ED because she wwas short of breath, weak, with low LOC. The symptoms were not managed in any special way prior to coming to ED. The patient was taking home medications mostly for HTN. She is on hemodialysis. It seems that medication, renal diet and hemodialysis was not followed regularly. For that reason, the patient developed so many health problems. Other information was not available in the comp

Medical Hi

Previous Medical History: Hypert
disease, myocardial infarct (unknov
CHF compensated, obesity (BMI 3

Prior Hospitalizations: The patien
hospitalizations. No other informati

Previous Surgical History: two C
1999), Artificial heart valve in (202

Social History: Patient denies use
vapes. She denies use of alcohol an

Pathophysiology

Disease process: This student wrote about **end-stage renal disease (ESRD)** because the assigned patient has this problem**. End-stage renal disease** is the last stage of chronic renal failure. There are five stages of renal disease, and they are based on GFR in mL/min. That means how much of blood plasma can be cleared of a specific substance per minute. It usually is more than 90ml /min. GFR becomes lower with every stage of renal disease. At the last stage, less than 15ml of blood plasma can be cleaned from any substance. The deterioration/death of nephrons is up to 95%, and kidneys cannot correctly filtrate nitrogenous wastes/metabolites or excrete fluid. This disease develops slowly through the years. Chronic renal failure is mainly caused by hypertension and diabetes mellitus (Cappriotti,2020). Other causes are glomerulonephritis, pyelonephritis, hereditary reasons, polycystic kidneys, and renal cancers (Cappriotti, 2020). The disease develops through five stages. The first stages do not give symptoms. The only change that occurs is in GFR or glomerular filtration rate. Glomerular filtration rate can be tested to show how good kidney function is. (GFR is the amount of blood plasma cleared of some substance per unit of time). Creatinine is the most commonly used substance to test GFR (Hinkle, 2022). That means the kidney function is better when more blood plasma is cleared of creatinine. GFR usually is more than 90-120 mL/min in young people. It naturally decreases with age but not less than 60mL/min. This index is less than 15mL/min at stage five of ESRD. The patient this student had to examine is in the last stage of ESRD.

S/S of disease: Patient can have weakness and fatigue, loss of muscle

Active Orders

Diet orders: Cardiac diet: The patient is on cardiac diet because she has a heart condition and HTN. Thi limits on salt, carbs and fat intake.

Renal diet: The patient is on renal diet because she has end stage renal disease (ESRD) and needs low so protein diet.

Weight daily before breakfast: Body weight is taken to check if fluid overload occurred. For ESRD is i maintain healthy body weight. Excess of sodium, carbs and proteins in diet can keep too much water in th cause edema .(Hinkle et al., 2022).

Vitals Q 2H. It is very important to maintain normal level of vitals to preserve renal function (Hinkle et a

Intake & output strict Q6H.fluids This procedure will check if there is good balance between intake of elimination. This is important to know in order to prevent dehydration and fluid overload

Bladder scan PRN for output if not voided after 6H strait catheter. Bladder has to be emptied to get a This scan will also show if there is retention of urine in the bladder or not (Hinkle et al., 2022).

Pulse oximeter continuous per protocol. It is necessary to control oxygen level in within normal values. saturation can damage heart and brain (Hinkle et al., 2022).

Low oxygen saturation can lead to serious condition and damage like brain (LOC) and heart.

Physical Exam/Assessment

General: Patient is alert, responsive, oriented x4 to place, time, person and situation. Patient is not in distress or pain. Appearance was appropriate for the situation.

Integument: Skin is dark brown color, dry and warm on palpation. No rashes, bruising or lesions were noted. There are scars on the chest from cardiac surgery, and a scar on upper right arm from hemodialysis port. Hair quantity, distribution, and texture is as expected. Nails w/o clubbing or cyanosis. Skin turgor is good, skin recoils fast. A bilaterally capillary refill on fingers and toes is good and takes less than 3 seconds.

HEENT: Head and neck are symmetrical, trachea is midline without deviation, thyroid is not palpable, no noted nodules bilaterally. Bilateral carotid pulses are palpable and 2+. No lymphadenopathy in the head or neck is noted**. Eyes**: Bilateral sclera white, bilateral cornea clear, bilateral conjunctiva pink. Bilateral lids moist without discharge or lesions noted. PERRLA bilaterally. EOMs intact bilaterally**.** The patient wears glasses. **Ears**: Bilateral auricles no visible or palpable deformities, lumps or lesions. Bilateral canals clear no discharge noted. Person hears normal tone of voice and has no hearing aids. **Nose:** Septum is in midline; turbinates are moist and pink without exudate noted and no visible polyps. Bilateral frontal and maxillary sinuses nontender to palpation. **Throat**: Buccal mucosa and tongue pale pink, no lesions noted. Dentition good.

Cardiovascular: Clear S1 an S2 . No gallops or rubs. Some murmurs present. PMI palpable at 5th intercostal space at MCL. Normal rate and rhythm. No chest pain at this time.

Peripheral pulses all palpable. No edema on the lower legs.

Respiratory: Normal rate and pattern of respirations and non-labored, lung sound clear throughout anterior chest bilaterally (posteriorly not listened because patient was laying in the bed), no wheezes, crackles, or rhonchi noted. No use of accessory muscles.

Genitourinary: The patient stated that her urine is clear and yellow, denied burning/pain on urination or urgency. The patient is on hemodialysis 3x per week for ESRD. Strict input and output Q 6HR to prevent fluid overload.

Gastrointestinal: On abdominal inspection noticed that skin has old scars from gall bladder removal and Cesarean sections. There are no rashes wounds or unusual growths. On auscultation, bowel sounds are normoactive in all four quadrants. On palpation the abdomen is soft, no hard masses, organomegaly, rebound or pain. Last BM was on 4/8/24. The patient is on cardiac diet and on renal diet.

Musculoskeletal: All extremities have active range of motion. Hand grips and pedal pulls/pushes demonstrate normal and equal strength bilaterally.

Neurological: Patient's LOC is alert and awake. PERRLA. Normal cognition on assessment. Patient denies HA, dizziness, weakness, numbness.

Most recent VS (include date/time and highlight if abnormal): 4/8/24 1206 125/95, 62 P, 18 R, 95% O2 on room air, 36.4C (97.5F).

1500 126/84, 72P, 16R, 99% O2 on room air, 36.4C (97.5F).

Pain and pain scale used: patient denies pain (pain = 0 on scale 1-10)

Nursing Diagnosis 1 **Activity intolerance related to fatigue, anemia, retention of waste products, and dialysis (Hinkle et al., 2022).**	**Nursing Diagnosis 2** **Deficient knowledge regarding condition and treatment of ESRD related to noncompliance with the treatment as evidenced by nutritional imbalance (Hinkle et al., 2022).**	**Nursing Diagnosis 3** **Imbalanced nutrition less than body requirements related to nausea, vomiting , and dietary restrictions, evidenced by low albumin and low energy (Hinkle et al., 2022).**
Rationale Indicate factors that contribute to severity of fatigue (Hinkle et al., 2022).	**Rationale** The patient can learn about the disease and treatment and become more proactive regarding her disease (Ackley et al., 2022).	**Rationale** Patient needs to reduce amount of restricted foods and proteins and provide high calory food for energy (Hinkle et al., 2022)
Interventions **Intervention 1:** Promote adequate rest after dialysis treatment (Hinkle et al., 2022) **Intervention 2**: Promote alternate activity with rest.	**Interventions** **Intervention 1:** Provide explanation of renal function and what happens when kidneys do not work any more at patient's level of understanding. **Intervention 2:** Assist the patient to find the way how to incorporate ESRD Into its life and deal with its problems.	**Interventions** **Intervention 1:** Provide patient with preferred food inwithin non-restricted food. **Intervention 2:** Promote intake of high biologic value protein foods like eggs and deary (Hinckle et al., 2022).
Evaluation of Interventions Patient has energy to participate in self care activities during this shift.	**Evaluation of Interventions** This was a good trial. The patient started asking more questions about her disease and what to do about it in order to improve some things.	**Evaluation of Interventions** Patient is choosing high protein foods for lunch that will give her more energy.

Medications continuation:

Prochlorperazine (Compro) 10mg tablet Q 6H

Pharmacologic class: Piperazine phenothiazine (Jones & Bartlett Learning, 2022)**..**

Therapeutic class: Antiemetic (Jones & Bartlett Learning, 2022)..

The reason for taking: for nausea/vomiting related to hemodialysis and high BUN and creatinine level (Jones & Bartlett Learning, 2022)..

Key nursing assessment: assess for involuntary movements**.** Assess patient for orthostatic hypotension (Jones & Bartlett Learning, 2022)..

Sevelamer carbonate (Renvela) 800mg tab. PO3xdaily w/meals

Pharmacologic class: Polymeric phosphate binder (Jones & Bartlett Learning, 2022).

Therapeutic class: phosphate binder (Jones & Bartlett Learning, 2022).

Reason for taking: to control serum phosphate level in patients with chronic kidney disease on dialysis.

(Patient's Phosphorus was 7.6 mg/dL) (Jones & Bartlett Learning, 2022).

Key nursing assessment: monitor phosphorus level to check effectiveness. Assess for blood pressure frequently (Jones & Bartlett Learning, 2022).

Acetaminophen (Paracetamol): 500mg tab PO PRN Q4HR pain 1-3

Pharmacologic class: Nonsalicylate, paraaminophenol derivative (Jones & Bartlett Learning, 2022).

Therapeutic class: Antipyretic, nonopioid analgesic (Jones & Bartlett Learning, 2022).

Reason for taking: for pain 1-3 (related to ESRD) (Jones & Bartlett Learning, 2022).

Key nursing assessment: monitor renal function and watch for decreased urine output. Does not exceed daily dose limit (hepatotoxic) (Jones & Bartlett Learning, 2022).

Clonidine (Catapres): 0.1mg tab Q8HR PO. Hold if SBP<90 HR<50. Report if held >2x in 48HR.

Pharmacologic class: centrally acting alpha agonist (Jones & Bartlett Learning, 2022).

Therapeutic class: Analgesic, antihypertensive behavior modifier (Jones & Bartlett Learning, 2022).

Reason for taking: Decreases BP in renal disease. Pain management in chronic kidney disease and in ESRD. (Jones & Bartlett Learning, 2022).

Key nursing assessment: assess BP and HR, it can cause bradycardia. Monitor for dry mouth and drowsiness if that becomes a problem. (Jones & Bartlett Learning, 2022).

Lab values/Diagnostics continued

Sodium: 135 mmol/L **Normal:** 136-145 mmol/L **Reason for abnormal:** heart and kidney disease(Pagana et al., 2022).

CO2: 21.0 Normal: (22.0-29.0) Reason for abnormal: renal failure (Pagana et al., 2022).

INR: 1.4 ratio **Normal:** 0.9-1.1 ratio **Reason for abnormal:** Patient is on Eliquis, blood thinner (Pagana et al., 2022).

Prothrombin time: 16.8 sec **Normal:** 11.7-13.8sec **Reason for abnormal:** Patient is on Eliquis (Pagana et al., 2022).

PTT: 65.0sec **Normal:** 22.4-35.9sec **Reason for abnormal**: patient is on blood thinner (Pagana et al., 2022).

Albumin: 2.8 g/dL **Normal**: 3.4-4.8g/dL **Reason for abnormal:** Improper diet or loss in the urine due to kidney disease (Pagana et al., 2022).

ALT: 76 U/L **Normal:** 0-55 U/L **Reason for abnormal:** liver damage (Pagana et al., 2022).

RBC 3.99 $x10^6$/uL **Normal:** 3.50-5.20 $x10^6$/uL **Reason for abnormal:** low erythropoietin due to renal disease (Pagana et al., 2022).

Hb: 10.5 g/dL **Normal:** 11-16g/dL **Reason for abnormal:** anemia due to renal disease (Pagana et al., 2022).

Hct: 32.7% **Normal:** 34.0-47.0% **Reason for abnormal:** anemia due to renal disease (Pagana et al., 2022).

RDW: 17.2% **Normal**: (12.0-15.0%) **Reason for abnormal:** anemia, low Iron (Pagana et al., 2022).

Platelets: 129x10^3 Normal 140-400x10^3 Reason for abnormal: possibly due to hemodialysis/ESRD (Pagana et al., 2022).

Urinalysis:

WBC: 37 Normal: (0-25) Reason for abnormal: infection/some bacteria present (Pagana et al., 2022)

Leucoesterase: trace **Normal:** negative **Reason for abnormal:** it is an enzyme produced by leucocytes, some WBC are present in the urine (Pagana et al., 2022).

PH: >=9.0 **Norma**l: 5.0-7.0 **Reason for abnormal:** may be caused by some bacteria splitting urea (Pagana et al., 2022)

Protein: 300!mg/L **Normal**: negative **Reason for abnormal:** possibly due to renal failure (Pagana et al., 2022)

Squamous epithel : 97 µL **Normal:** 0-30 µL **Reason for abnormal:** possible light inflammation (Pagana et al., 2022)

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