

### Medications

**Aspirin 81 mg oral tab, daily**  
 Pharmacologic class: salicylate (Nurse's drug handbook, 2023).  
 Therapeutic class: NSAID (Nurse's drug handbook, 2023).  
 Reason: antiplatelet coagulation.  
 Assessment prior: assess client Hx for GI bleeds (Nurse's drug handbook, 2023).

**Atorvastatin (Lipitor) 40 mg oral tab, nightly**  
 Pharmacologic class: HMG-CoA reductase inhibitor (Nurse's drug handbook, 2023).  
 Therapeutic class: antihyperlipidemic (Nurse's drug handbook, 2023).  
 Reason: client has medical Hx of hyperlipidemia.  
 Assessment prior: assess lipid levels (Nurse's drug handbook, 2023).

**Calcitriol (rocaltrol) 0.5 mcg, oral capsule, daily, do not crush or puncture**  
 Pharmacologic class: vitamin D analogue (Nurse's drug handbook, 2023).  
 Therapeutic class: antihypocalcemic (Nurse's drug handbook, 2023).  
 Reason: calcium supplement d/t renal failure.  
 Assessment prior: ensure client receives enough calcium and does not take any other Vitamin D supplements (Nurse's drug handbook, 2023).

**Clopidogrel (Plavix) 75 mg oral tab, daily**  
 Pharmacologic class: P2Y12 platelet inhibitor (Nurse's drug handbook, 2023).  
 Therapeutic class: platelet aggregation inhibitor (Nurse's drug handbook, 2023).  
 Reason: reduce the risk of another MI d/t client history of NSTEMI (Nurse's drug handbook, 2023).  
 Assessment prior: genetic test to ensure the client does not have CYP2C19 enzyme (Nurse's drug handbook, 2023).

**Famotidine (Pepacid) 10 mg oral tab, indications stress ulcer prophylaxis**  
 Pharmacologic class: histamine-2 blocker (Nurse's drug handbook, 2023).  
 Therapeutic class: antiulcer agent (Nurse's drug handbook, 2023).  
 Reason: client is taking d/t heartburn.  
 Assessment prior: assess client's heartburn before giving.

**Heparin (heparine) 5,000 units subq every 8 hours 3x daily**  
 Pharmacologic class: anticoagulant (Nurse's drug handbook, 2023).  
 Therapeutic class: anticoagulant (Nurse's drug handbook, 2023).  
 Reason: prevent PE and DVT (Nurse's drug handbook, 2023).  
 Assessment prior: obtain aPTT before administering (Nurse's drug handbook, 2023).

**Sodium bicarb 1300 mg oral tab 4x daily**  
 Pharmacologic class: electrolyte (Nurse's drug handbook, 2023).  
 Therapeutic class: antacid, electrolyte replenisher, systemic and urinary alkalinizer (Nurse's drug handbook, 2023).  
 Reason: risk for metabolic acidosis d/t renal failure.  
 Assessment prior: monitor the client's sodium and calcium intake (Nurse's drug handbook, 2023).

**Tamsulosin (Flomax) 0.4 mg capsule 1x nightly, can be opened and put in applesauce, do not crush or chew granules**  
 Pharmacologic class: alpha-1 adrenergic antagonist (Nurse's drug handbook, 2023).  
 Therapeutic class: benign prostatic hyperplasia (BPH) agent (Nurse's drug handbook, 2023).  
 Reason: treat symptoms of enlarged prostate.  
 Assessment prior: assess client for symptoms of BPH (Nurse's drug handbook, 2023).

### Demographic Data

**Date of Admission:** 1/26/2024  
**Admission Diagnosis/Chief Complaint:** Renal failure  
**Age:** 63  
**Gender:** Male  
**Race/Ethnicity:** White/Caucasian  
**Allergies:** Lisinopril, high severity, causes throat swelling. Codeine, medium severity, causes hallucinations.  
**Code Status:** Full code  
**Height in cm:** 172.7cm  
**Weight in kg:** 73.8kg  
**Psychosocial Developmental Stage:** Erikson's stage 7, generativity vs. stagnation  
**Cognitive Developmental Stage:** Piaget's formal operational stage  
**Braden Score:** 20  
**Morse Fall Score:** 53  
**Infection Control Precautions:** None

### Pathophysiology

**Disease process:** In stage 1 and 2 renal failure, nephrons are damaged and killed but the side effects are not noticeable yet due to the amount of nephrons within the kidneys. Stage 3 the kidney function begins to drastically decrease because of the existing nephrons becoming overwhelmed. This then leads to a decreased GFR and fibrosis of the nephrons, which leads to stage 4. The kidneys begin to shut down thus leading to improper filtration, uncontrolled blood pressure, electrolytes, and acid-base balance, and affecting other organs in the body (Capriotti, 2020).

**S/S of disease:** Depending on which stage the client is in, there may be no signs or symptoms. In stage 1 and 2, the client may have no symptoms with normal labs. In the later phases, the client will likely develop encephalopathy, anemia, confusion, and hypocalcemia. Without proper filtration of the bloodstream, RBC's are killed d/t a high nitrogen content within the blood (Capriotti, 2020). My client did not have any other physical symptoms but had low RBC's, HGB, HCT, and GFR with an elevated BUN and creatinine.

**Method of Diagnosis:** Laboratory tests can indicate if there is renal impairment and how severe the damage is. Blood work will include albumin, BUN, creatinine, and a CBC with differential. A urinalysis will also be performed to detect the filtration within the urine (Capriotti, 2020). All these labs were performed for my client with indications of renal failure.

**Treatment of disease:** Blood pressure and fluid and electrolyte control is important for a client in renal failure. If a client has a GFR within the 10-20 range, they will be recommended for dialysis and a kidney transplant (Capriotti, 2020). My client has not begun dialysis nor is on a transplant list, however, he is taking medications such as clopidogrel for antiplatelet control and receives fluids to keep his fluid volume levels intact.

### Lab Values/Diagnostics

**Chloride (98-107 mmol/L) 121**  
 Reason: Chloride is used to monitor the body's fluid and acid-base balance. An elevation in chloride indicates an improper loss of fluids, which occurs with renal failure (Risicher, 2022).

**CO2 venous (22-30 mmol/L) 15**  
 Reason: CO2 is an indicator of the acid-base balance within the body. A decrease in CO2 indicates an increase of HCO3. An improper acid-base balance is a side effect of renal impairment (Risicher, 2022).

**BUN (8-26 mg/dL) 45**  
 Reason: BUN assess renal function and hydration status. An elevation of BUN coincides with renal failure (Risicher, 2022).

**Creatinine, blood (0.7-1.3 mg/dL) 2.48**  
 Reason: creatinine is a specific indicator of renal function. Since my client has a diagnosis of renal failure, the decreased creatinine agrees with the diagnosis in representing poor renal function (Risicher, 2022).

**GFR, estimated (90-120mL/min) 28**  
 Reason: With decreased GFR, the glomerulus within the kidneys is likely damaged. This lab is common with clients who experience chronic hypertension, which we see with my client who has a PMH of hypertension (Risicher, 2022).

**Calcium (8.7-10.5 mg/dL) 8.4**  
 Reason: The most likely reason this client's calcium is decreased in d/t a lack of calcium within the diet, since they already take a calcium supplement. The client also experiences electrolyte imbalances d/t renal failure (Risicher, 2022).

**Phosphorus (2.5-4.5 mg/dL) 2.3**  
 Reason: Phosphorus is relevant in renal function and determines metabolism within the cells. Since my client is in renal failure, phosphorus will be off (Risicher, 2022).

**RBC (4.4-5.8) 2.75**  
 Reason: RBC's decrease when anemia or blood loss is present. Since my client is not losing blood, it is likely he is experiencing anemia (Risicher, 2022).

**HGB (13-16.5 g/dL) 9.6**  
 Reason: Similar to RBC's, low hemoglobin can be an indicator of anemia. It is likely my client is experiencing anemia (Risicher, 2022).

**HCT (38-50%) 28.6**  
 Reason: Hematocrit is used to monitor the hydration status within the client. The decrease in hematocrit could be d/t too many fluids within the body that are not excreted properly (Risicher, 2022).

**MCV (82-96 fL) 103.8**  
 Reason: An elevation of MCV with a decrease in RBC's indicate anemia.

**MCH (26-32 pg) 35**  
 Reason: An elevation of MCH with a decrease in RBC's indicate anemia.

**Neutrophils (40-68%) 75.8**  
 Reason: An increase in neutrophils with a decrease in lymphocytes indicates a possible exposure to infection. My client has been hospitalized for degenerative arthritis in the past, which is an inflammatory disease, and that could explain the reasoning behind these two labs since the client has no known infection at this time (Risicher, 2022).

**Lymphocytes (19-49%) 15.9**  
 Reason: Lymphocytes are typically used to determine infection if they are elevated. Since my client's lymphocytes are decreased, this could be an indicator of malnutrition, exposure to infection, an inflammatory disease, or improper digestion (Risicher, 2022).

**Absolute neutrophils (1.4-5.3) 5.8**  
 Reason: Absolute neutrophils are considered when lymphocytes are low, which is typically seen in chemotherapy patients or those who take immunosuppressants. Inflammation and stress can cause an increase in absolute neutrophils. My client's body is under a great deal of stress and may be experiencing inflammation d/t renal failure and arthritis (Risicher, 2022).

1/25/2024: Chest Xray single view, no abnormalities detected.  
 1/29/2024 0000: ECG rhythm strip, normal.

### Admission History

Client presents to the ED with complaints of chest pain in the midsternal region that began one week prior to admission. The client describes the pain as sharp and intermittent, as it gets worse when he coughs. No previous treatment for the chest pain and client states "not really" when asked if anything at home helps the pain. The severity of the pain is rated as a 1/10 on the numeric pain scale.

### Medical History

**Previous Medical History:** chronic kidney disease, chronic obstructive pulmonary disease (COPD), hyperlipidemia, hypertension, obstructive sleep apnea, and tobacco use (no dates provided)

**Prior Hospitalizations:** ED admit 8/31/2023 for degenerative arthritis in the hip. ED admit 12/4/2022 for non-ST-elevation myocardial infarction (NSTEMI). ED admit 11/26/2022 for an upper respiratory infection (URI).

**Previous Surgical History:** heart catheterization (no date provided)

### Social History:

Client denies usage of alcohol, vape, or drugs. Client started smoking tobacco at the age of 6yrs with an average of 2.5 packs per day (ppd) for 50 years. Client is single and is on disability.

### Active Orders

Diet renal: d/t renal failure.

IP consult to nephrology: d/t acute on chronic renal insufficiency.

BMP w/ calcium total: routine monitor for kidney function.

Aerosol and MDI treatment: d/t COPD.

Oxygen therapy: maintain O2 saturation between 92-96%.

Pulse oximeter SPH: monitor O2 saturation.

Admission weight: one time for baseline vitals.

Insert/maintain peripheral IV: client receives IV fluids and in case of an emergency.

Monitor intake and output: monitor for kidney function and bowel movements.

Patient may shower: demonstrate activity level.

Up as tolerated: ensure proper transfer devices and encourage client to be mobile.

Vitals per unit routine: Q4 to assess client.

**Physical Exam/Assessment****General:**

Client is alert and oriented to person, place, time, and situation. Client is in no acute distress, slightly **disheveled** and appears **older than stated age**.

**Integument:**

Skin color is normal for ethnicity, pale, warm to the touch, with **dry skin** on lower extremities and no apparent bruises or lesions. Peripheral IV placed in right AC. Skin turgor recoils immediately.

**HEENT:**

Head is normocephalic with no JVD or noted nodules, PERRLA and EOMS intact, no vision or hearing deficits. Pupil size at 3mm with white sclera and pink conjunctiva. Oral mucosa and dentition is healthy and pink. Uvula and septum are midline.

**Cardiovascular:**

S1 and S2 heard without murmur. Peripheral and carotid pulses are palpable and present +2 bilaterally. Capillary refill is less than 3 seconds. No edema noted. Apical impulse is palpable and present +2.

**Respiratory:**

**Diminished breath sounds located at the bases of the lungs bilaterally**. Respirations are regular and **deep**. **Retractions and SOB noticed on exertion**. Client is without cough or wheeze.

**Genitourinary:**

Client voids spontaneously without difficulty, pain, or burning using a urinal independently. Urine is clear, yellow, and without odor. Genitals intact. Urine output was charted at 1300 mLs for 24hr.

**Gastrointestinal:**

Last BM was recorded 1/29 as medium, normal, and formed. Abdomen is without distention or discomfort on palpation. No masses or organomegaly were noted on palpation. Bowel sounds are **hypoactive**. Client is on a renal diet with a 100% intake of meals within the past 24hrs.

**Musculoskeletal:**

Hand grips and pedal pushes were noted 5/5 bilaterally. ROM fully intact active and bilaterally. Client uses a walker and is up as tolerated with a standby assist. Client's fall score is recorded at **53**.

**Neurological:**

Client is A/O x4 and aware of surroundings. Pupils are equal, round, and reactive to light and accommodation. Client appears content.

**Most recent VS (include date/time and highlight if abnormal):**

1/29/2024 1432: BP **148/71**, HR 62, O2 95% on RA, RR 20, T 97.9 deg F

**Pain and pain scale used:**

1/29/2024 1432: Numeric pain scale rated 0/10.

<b>Nursing Diagnosis 1</b>  Risk for imbalanced fluid volume (Phelps, 2023)	<b>Nursing Diagnosis 2</b>  Risk for unstable blood pressure (Phelps, 2023)	<b>Nursing Diagnosis 3</b>  Decreased activity tolerance (Phelps, 2023)
<p align="center"><b>Rationale</b></p> <p>The client is at risk for imbalanced fluid volume related to renal failure as evidenced by decreased GFR.</p>	<p align="center"><b>Rationale</b></p> <p>The client is at risk for unstable blood pressure related to renal failure and HX of hypertension as evidenced by improper function of the kidneys and elevated blood pressure.</p>	<p align="center"><b>Rationale</b></p> <p>The client has a decreased activity intolerance related to COPD as evidenced by SOB on exertion.</p>
<p align="center"><b>Interventions</b></p> <p><b>Intervention 1:</b> Maintain IV access to administer fluids.</p> <p><b>Intervention 2:</b> Frequent labs to monitor electrolyte levels.</p> <p>(Phelps, 2023)</p>	<p align="center"><b>Interventions</b></p> <p><b>Intervention 1:</b> Assess BP, HR, RR, and O2 sat every 4 hours.</p> <p><b>Intervention 2:</b> Treat hyper/hypotension in a timely manner.</p> <p>(Phelps, 2023)</p>	<p align="center"><b>Interventions</b></p> <p><b>Intervention 1:</b> Discuss importance of exercise and tolerance with the client.</p> <p><b>Intervention 2:</b> Promote autonomy and allow the client to make decisions about their comfortable activity levels.</p> <p>(Phelps, 2023)</p>
<p align="center"><b>Evaluation of Interventions</b></p> <p>The client was aware that he needed his IV to keep his fluid and electrolyte level stable. The client was understanding of the importance of having stable electrolytes and frequent blood draws.</p>	<p align="center"><b>Evaluation of Interventions</b></p> <p>The client was comfortable with frequent vitals assessment and receiving medications to treat any abnormalities. The client said, "Do what you need to do to keep me healthy."</p>	<p align="center"><b>Evaluation of Interventions</b></p> <p>The client showered independently and requested to rest in bed after. The client was accepting of gradually increasing his activity level but not say he would stay active when he went home.</p>

**References (3) (APA):**

Capriotti, T. M. (2020). *Davis advantage for pathophysiology introductory concepts and clinical preservatives* (2nd ed.). F. A. Davis.

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*Nurse's drug handbook*. (2023). Jones & Bartlett Learning.

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Rischer, K. (2022). *Think like a nurse: Vol. II. Building the knowledge for professional practice*.