

Demographic Data

Medications (Page 2)

- Albuterol: 2.5 mg nebulization 3xs daily
- Amantadine: capsule 100 mg oral 2xs daily
- Aspirin: chewable tablet 81 mg oral daily
- Ceftriaxone: injection 2g IV daily 9 doses
- Doxycycline hydrate: Tablet 100 mgs 2xs daily 8 doses
- Enoxapam: Injection 40 mg subq daily
- Famotidine: Tablet 20 mg oral daily
- Kepra: tablet 500 mg oral 3xs daily
- Miconazole 2% powder: Topical 2xs daily
- Phenytoin extended release: Capsule 200 mg oral 2 times
- Prednisone: Tablet 40 mg oral daily w/ breakfast
- Ropinirole: Tablet 1 mg oral 3xs daily
- Tiotropium-olodaterol 2.5-2.5 mcg/actuation: Inhaler 2 puff daily

Date of Admission: 9/13/2023
Admission Diagnosis/Chief Complaint: **Hypercapnic Respiratory Failure & Community Acquired Pneumonia**
Age: 68
Gender: Female
Race/Ethnicity: Caucasian
Allergies: Augmentin, Avelox, Biaxin, Carbamazepine, Daypro, Erythromycin, Levaquin, Penicillin, Sulfa Antibiotics
Code Status: Full
Height in cm: 172.7 cm
Weight in kg: 125.6 kg
Psychosocial Developmental Stage: Intensity vs. Despair
Cognitive Developmental Stage: Formal Occupational Stage
Braden Score: 35
Morse Fall Score: 90
Infection Control Precautions: N/A

Pathophysiology

Disease process: Respiratory failure is a condition where the gasses in your body are out of equilibrium. Respiratory failure occurs when a person either has too much carbon dioxide in their system, which is known as hypercapnia, or doesn't have enough oxygen, known as hypoxic. Hypercapnic respiratory failure, also known as Type 2 respiratory failure, has two known causes. One is increased CO2 production and the other is decreased CO2 secretion (Melanson, 2023). There are quite a few physiological reasons as to why hypercapnia may occur. In terms of the patient, it is believed that her hypercapnia was secondary to not having access to the CPAP machine, causing her to have to work harder to breathe. Respiratory failure occurs when there is an imbalance between the amount of work needed for the lungs to do to pump out adequate CO2 vs the amount of work that the lungs can do (Melanson, 2023). When this happens, the lungs must work harder, causing respiratory fatigue and eventually failure (Melanson, 2023).
S/S of disease: Signs and symptoms of hypercapnic respiratory failure include change of behavior, headache, warm extremities, asterixis (inability to maintain sustained posture), fever, cough, sputum production, and chest pain in cases involving pneumonia (Physiopedia, 2023). Patient presented to the hospital with chronic COPD, difficulty breathing, lethargy, low O2 saturation, seizures, and chest pain (patient had a secondary diagnosis of community acquired pneumonia).
Method of Diagnosis: A chest x-ray was done on the patient. Findings included a calcified nodule in the left upper lobe that was measured to be about 1.7 cm in size. Nodules in the lungs can be caused by inflammation stemming from fungal or bacterial infections, with one of those being pneumonia (Northwestern Medicine, 2023). Pneumonia can also cause hypercapnic respiratory failure, which presents as the patients admission diagnosis.
Treatment of disease: Treatments of the disease include medications to minimize airway obstruction, supplemental oxygen, noninvasive ventilation, and mechanical ventilation (Northwestern Medicine). The patient received supplemental oxygen, medication, and non-invasive ventilation while at the hospital.

Lab Values/Diagnostics (Martin, 2023) – all labs cited

BUN: 29 mg/dL (10-20 mg/dL) due to possible renal failure
 BUN/Creatinine Ratio: 31 (12-20) due to possible renal failure
 Glucose: 68 mg/dL (70-99 mg/dL) due to possible extensive liver disease
 Alkaline Phosphatase 222 u/L (40-150 u/L) due to possible liver cirrhosis
 GFR, EST NONAFRICAN: 59 (>60) due to possible renal dysfunction
 RBC: 3.24 mcl (3.80-5.30 mcl) due to possible kidney disease
 Hgb: 10 g/dL (12-15.8 g/dL) due to possible kidney disease
 Hct: 31.2% (36-47) due to possible liver cirrhosis
 MCV: 96.5 fL (82-96 fL) due to possible anemia
 RDW 16% (11.8-15.5) due to possible anemia
 MPV: 7.5 fL (9.7-12.4 fL) due to possible anemia
 X-Ray: Patient had a x-ray done upon admission. Findings were a a calcified granuloma and some atelectatic changes/infiltrate. These both can be related to respiratory failure. Nodules in lungs can be caused by infections in the lung that lead to pneumonia and eventually respiratory failure (Northwestern Medicine, 2023). Atelectatic changes means that there is some lung collapse, which forces the lungs to work harder on inspiration and expiration, which can eventually lead to respiratory failure.

Admission History

Patient who is 68 y/o arrived at OSF SHMC on 9/13/2023 complaining of low o2 saturation which had begun that day. Patient's home health nurse went to check on patient when the nurse noticed difficulty breathing along with confusion as these were some associated symptoms. Prior to hospitalization patient managed symptoms w/ a CPAP machine. Symptoms started after patient's machine broke and was unable to use it for a few days. Patient felt tightness in the chest area which was related to being unable to get enough oxygen to the lungs. Duration of the pain lasted a few days after the onset, while patient was hospitalized. There were no relieving factors. Patient was instructed to take deep breaths by the home health nurse, but the symptoms could not be alleviated, which caused the nurse to call the ambulance.

Active Orders

- General Diet – Patient's labs were mostly normal and isn't lacking in any electrolytes
- IP Consult to Tele-critical Care Team – b/c patient is on 4L of O2 @ home, on bipap, & is lethargic
- CMP daily a.m. – to check body function
- CBC daily a.m. – to check body function
- Magnesium daily a.m. – to check & maintain mag
- PT/INR daily am – to check clotting factor/time
- OT & PT evaluate and treat discharge planning – to assist w/ recovery at home
- Aerosol nebulizer (initial -> subsequent) – assist w/ respiratory symptoms
- MDI treatment (initial -> subsequent) – assist w/ respiratory symptoms
- Oxygen therapy – assist w/ respiratory symptoms
- Pulse Oximetry – monitor patient's perfusion
- Admission weight & daily weight – monitor patient's weight
- RT assessment for albuterol and ipratropium treatment plan – assist w/ respiratory symptoms
- Insert/maintain peripheral IV - administer medications
- I&O every 8 hrs & Strict I&O- ensure patient is body is functioning
- RT Therapy Assessment score – create a plan to help patient
- Up w/ assistance – limit bed sores
- Vitals per unit – check homeostasis
- Notify Physician – So Physician can make discharge plans

Medical History

Previous Medical History: Abdominal Aortic Aneurysm without rupture, abnormal uterine bleeding, actinic keratosis, arthritis, asthma, BMI 40 – 44.9, Adult HCC, Carcinoma, Chronic low back pain, compulsive disorder, COPD, Abdominal pain, GERD, Gross hematuria, malignant melanoma, hematuria, history of nonmelanoma skin cancer, hypertension, intractable nausea and vomiting, migraines, neoplasm of ureter, non-recurrent inguinal hernia of right side w/ obstruction w/o gangrene, Parkinson disease, restless leg syndrome, seizures, sleep apnea, total knee replacement status, uterine mass and ventral hernia without obstruction of gangrene
Prior Hospitalizations: Acute respiratory failure w/ hypoxia & hypercapnia (8/8/2023), Generalized weakness (7/4/2023), Acute Chronic Respiratory Failure (5/26/2023)
Previous Surgical History: Dilatation and Curettage of uterus, orthopedic surgery, appendectomy, tonsillectomy, cholecystectomy, total knee arthroplasty, upper gi endoscopy exam, biopsy of a skin lesion, laparoscopic hysterectomy, cystoscopy, hysterectomy, carpal tunnel release, wrist ganglion excision (right), hc dmh endo carpel tunnel kit dyonic and hernia repair
Social History: Stopped smoking 6 years ago, no alcohol or drinking history

- **Albuterol:** 2.5 mg nebulization 3xs daily to treat and prevent bronchospasm (NDH, 2023)
 - Pharmacological Class: Adrenergic (NDH, 2023)
 - Therapeutic Class: Bronchodilator (NDH, 2023)
 - Key Nursing Assessment: Monitor patient's breathing pattern before administration (NDH, 2023)
- **Amantadine:** capsule 100 mg oral 2xs daily to help control uncontrolled movements (NDH, 2023)
 - Pharmacological Class: Dopamine agonist (NDH, 2023)
 - Therapeutic Class: Antidyskinetic, antiviral (NDH, 2023)
 - Key Nursing Assessment: Advise the patient to change positions slowly to minimize effects of orthostatic hypotension (NDH, 2023)
- **Aspirin:** chewable tablet 81 mg oral daily to help relieve pain or fever (NDH, 2023)
 - Pharmacological Class: Salicylate (NDH, 2023)
 - Therapeutic class: NSAID (anti-inflammatory, antiplatelet, antipyretic, nonopioid analgesic) (NDH, 2023)
 - Key Nursing Assessment: Advise patient to take aspirin w/ food/after meals because it can upset an empty stomach (NDH, 2023)
- **Ceftriaxone:** injection 2g IV daily 9 doses to help treat infection (NDH, 2023)
 - Pharmacological Class: 3rd Gen cephalosporin (NDH, 2023)
 - Therapeutic Class: Antibiotic (NDH, 2023)
 - Key Nursing Assessment: Tell patient to report evidence of blood dyscrasia or superinfection to prescriber immediately (NDH, 2023)
- **Doxycycline hydrate:** Tablet 100 mgs 2xs daily 8 doses to treat inhalation anthrax post exposure (NDH, 2023)
 - Pharmacological class: Tetracycline (NDH, 2023)
 - Therapeutic Class: Antibiotic (NDH, 2023)
 - Key Nursing Assessment: Monitor patient for symptoms of intracranial hypertension (NDH, 2023)
- **Enoxapam:** Injection 40 mg subq daily to prevent the formation of thrombus (NDH, 2023)
 - Pharmacologic Class: Low molecular weight heparin (NDH, 2023)
 - Therapeutic class: anticoagulant (NDH, 2023)
 - Key nursing assessment: Monitor for site bleeding (NDH, 2023)
- **Famotidine:** Tablet 20 mg oral daily to provide short term treatment of active duodenal ulcer (NDH, 2023)
 - Pharmacological Class: Histamine-2 blocker (NDH, 2023)
 - Therapeutic Class: Antiulcer agent (NDH, 2023)
 - Key Nursing Assessment: Check if patient has phenylketonuria, medication can be dangerous for those w/ that disease (NDH, 2023)
- **Levetiracetam:** tablet 500 mg oral 3xs daily to treat seizures (NDH, 2023)
 - Pharmacological Class: Pyrrolidine derivative (NDH, 2023)
 - Therapeutic class: Anticonvulsant (NDH, 2023)
 - Key Nursing Assessment: Monitor patient for hypersensitivity and skin reactions (NDH, 2023)
- **Miconazole 2% powder:** Topical 2xs daily to treat and prevent fungal skin infections (Medline, 2022)
 - Pharmacological Class: Imidazoles (Medline, 2022)
 - Therapeutic class: Antifungal (Medline, 2022)
 - Key Nursing Assessment: Make sure the patient isn't pregnant (Medline, 2022)

- **Phenytoin extended release:** Capsule 200 mg oral 2 times to treat psychomotor seizures (NDH, 2023)
 - Pharmacological Class: Hydantoin derivative (NDH, 2023)
 - Therapeutic Class: Anticonvulsant (NDH, 2023)
 - Key Nursing Assessment: Monitor patient for severe skin reactions (NDH, 2023)
- **Prednisone:** Tablet 40 mg oral daily w/ breakfast to help treat inflammatory diseases (NDH, 2023)
 - Pharmacological Class: Glucocorticoid (NDH, 2023)
 - Therapeutic Class: Immunosuppressant (NDH, 2023)
 - Monitor the patient for hypertension (NDH, 2023)
- **Ropinirole:** Tablet 1 mg oral 3xs daily to treat seizure symptoms (NDH, 2023)
 - Pharmacological Class: Nonergot alkaloid dopamine agonist (NDH, 2023)
 - Therapeutic class: Antiparkinsonian (NDH, 2023)
 - Key Nursing assessment: Assess patient for hypersensitivity reactions (NDH, 2023)
- **Tiotropium-olodaterol 2.5-2.5 mcg/actuation:** Inhaler 2 puff daily to help with patient's breathing (NDH, 2023)
 - Pharmacological Class: HMG-CoA reductase inhibitor (NDH, 2023)
 - Therapeutic Class: Antihyperlipidemic (NDH, 2023)
 - Key nursing assessment: Monitor the patient's pulmonary function (NDH, 2023)

Physical Exam/Assessment

General: AxOx4, In no acute distress, and well groomed

Integument: Normal hair color, quantity, and distribution. No rashes or lesions noted on the skin. Bruising present on legs and arms. No clubbing or cyanosis noted on nails. Skin turgor slightly slow to return to normal. Capillary refill is less than 3 second bilaterally on upper and lower extremities

HEENT: Head and neck are symmetrical, and trachea is midline. Thyroid is nonpalpable w/ no nodules or lesions present. Sclera is white, conjunctiva is pink, eyelids are moist and pink without lesions, all bilaterally. No visible drainage present. PERRLA is intact bilaterally, red light reflex present, and EOMs are intact, Nasal septum is midline w/ no visible nodules or bleeding. Small bruise on right ear. Uvula is midline and soft palate rises and falls symmetrically. Tonsils are 0+ (Patient doesn't have tonsils). Hard palate is intact and oral mucosa is moist and pink with no exudate.

Cardiovascular: All pulses present bilaterally. Pulse on right wrist is 1+, while pulse on left wrist is 2+ (May be due to wrist ganglion excision and carpal tunnel release).

Respiratory: Breath sounds are normal and clear bilaterally. Chest rises and falls equally with each breath. No labored breathing noted. Noted that at the time of assessment patient had just finished her daily breathing treatment, which may have assisted with positive respiratory findings.

Genitourinary: Normal findings; no pain or changes in flow and frequency noted. Last urination was 6 hours before exam

Gastrointestinal: Bowel sounds are active and there are a normal number of clicks and gurgles, abdomen is soft and tender with no pain noted upon palpation. No bruising, lesions, or rashes noted. Patient is currently on a general diet.

Musculoskeletal: Hand grips along with pedal push and pull are both 5+ bilaterally. Extremities were warm and dry upon palpation Did not test gait and ROM due to preserve patients' strength/energy. Lymph nodes are non-palpable bilaterally

Neurological: Normal and clear speech and cognition.

Most recent VS (include date/time and highlight if abnormal): Temp - 92.4; Heart Rate - 77; Respiration Rate - 20; Blood Pressure - 150/79; O2 - 96%

Pain and pain scale used: Pain rated 0-10 on a scale of 0-10 (Numerical Rating Scale).

<p style="text-align: center;">Nursing Diagnosis 1</p> <p>Risk for impaired gas exchange related to respiratory failure as evidenced by low O2 saturation (NANDA 2015-2017).</p>	<p style="text-align: center;">Nursing Diagnosis 2</p> <p>Risk for ineffective breathing pattern related to shortness of breath as evidenced by ABG assessment findings (CO2-54//O2-79) (NANDA 2015-2017).</p>	<p style="text-align: center;">Nursing Diagnosis 3</p> <p>Risk for bleeding related to Low RBC count as evidenced by low Hgb and Hct (NANDA 2015-2017).</p>
<p style="text-align: center;">Rationale</p> <p>Patient had a low O2 saturation upon admission to the hospital</p>	<p style="text-align: center;">Rationale</p> <p>Patient was noted to have a rapid breathing pattern upon admission to the hospital</p>	<p style="text-align: center;">Rationale</p> <p>Patient has had a few low Hgb and Hct readings which indicates a slower coagulation time for the blood in the body</p>
<p style="text-align: center;">Interventions</p> <p>Intervention 1: Maintain oxygen administration to maintain oxygen saturation @ 90% or higher (Wayne, 2023). Intervention 2: Keep the head of the bed upright to encourage better breathing and circulation</p>	<p style="text-align: center;">Interventions</p> <p>Intervention 1: Initiate breathing exercises Intervention 2: Administer medications as prescribed.</p>	<p style="text-align: center;">Interventions</p> <p>Intervention 1: Avoid activities that might cause bleeding, such as shaving or using hard toothbrushes Intervention 2: Put pressure on puncture site when IVs are removed/Blood sugars are taken.</p>
<p style="text-align: center;">Evaluation of Interventions</p> <p>Patient maintained 2-4L of oxygen throughout her stay at the hospital.</p>	<p style="text-align: center;">Evaluation of Interventions</p> <p>Patient took medications as ordered with no complications.</p>	<p style="text-align: center;">Evaluation of Interventions</p> <p>Patient allowed me to keep pressure on the site for 3-5 minutes after I removed the IV.</p>

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