- pleural membrane: lungs are covered with visceral pleural. thoracic cavity is covered in parietal pleural. between is parietal space w/ pleural fluid, lubricates for smooth movement

Inspiration: diaphram contract
Expiration: diaphram relax

- negative pressure to prevent atelectasis
- external respiration: O2 diffuses into capillaries, CO2 from blood to alveoli to be exhaled/excreted
- gas transport: O2 bound to hemoglobin in RBC = oxyhemoglobin

internal respiration: O2 from blood in to cells & CO2 from cells to blood to be brought to alveoli.

capacity) which is residual air + loss of elastic recoil = dyspnic: due to difficulty exhaling & inhaling (bc pt. now inhales when lungs are "overinflated")
- hypoxemia usually is a problem late into disease. along w/ hypercapnia (↑CO2) as air trapped ↑, alveoli walls are destroyed. Bullae (large air spaces) & blebs (air spaces next to pleura) may form. These have no capillaries so no gas exchange = hypoxemia & hypercapnia.
- not all COPD pt. have productive cough but common!
- pulmonary vascular changes may occur late into COPD. small pulmonary artery vasoconstrict due to hypoxia. leads to thickening of vascular smooth muscle ↓ alveolar walls & capillaries = ↑ pressure in pulmonary circulation. may progress to R ventricle hypertrophy which may lead to R HF

Student Name: [illegible]

Medical Diagnosis/Disease: Chronic Obstructive Pulmonary Disease

NCLEX IV *(8)*: Physiological Integrity/Physiological Adaptation

Anatomy and Physiology

Normal Structures

- gas exchange, supply O2, remove CO2
- pharynx: shared passage, air & food
  larynx: vocal cords, epiglottis
  trachea: windpipe, lined w/ mucous & cilia to move debris & bacteria out
- alveoli sacs are surrounded by capillary beds which move O2 & CO2 as needed: gas exchange
- surfactant: ↓ surface tension/friction w/ alveoli, prevent atelectasis

Pathophysiology of Disease

- limitation of airflow due to loss of elastic recoil & air obstruction from hypersecretion, mucosal edema, & bronchospasm. repeated exposure = chronic inflammation = tissue destruction. inflammatory cells (neutrophils, macrophages, lymphocytes) attract others such as inflammatory cytokines. The inflammatory response is worsened by cig smoke etc. The oxidants (smoke, chems, etc) stim mucus secretion & ↑ fluid in lungs. oxidants also ↑ proteases (breakdown lung connective tissue) & ↓ antiproteases (protect) leading to ↑ alveolar destruction & ↓ lung elasticity.
- Inability to expire air as peripheral airways become obstructed. too much trapped air leads to chest being hyper-expanded & barrel chest (resp muscles cannot function properly) = FRC (functional residual

Anticipated Diagnostics

Labs

serum antitrypsin test
- ↓ ATT protein in blood

sputum culture
ABGs

Additional Diagnostics

6min walk test
CXR CT
spirometry
pulmon func. test

cont. ↑

NCLEX II *(3)*: Health Promotion and Maintenance

Contributing Risk Factors

Smoking
gender (men)
women 50% ↑ likely to develope (smaller lungs)
infection
air pollution
asthma

Signs and Symptoms

Chronic cough
Chronic sputum Production
dyspnea
Itx or expose to risk factors
- chest heaviness
- inability to take deep breath
- wheezing
- fatigue
- Chest tightness

NCLEX IV *(7)*: Reduction of Risk

Possible Therapeutic Procedures

Non-surgical

oxygen therapy
breathing exercises

Surgical transplant
lung volume reduction surgery (LVRS)
bronchoscopic lung vol reduction surgery
bullectomy

Prevention of Complications

(What are some potential complications associated with this disease process)

avoid oxidants
- smoke, pollutants, chemicals

exercise

NCLEX IV *(6)*: Pharmacological and Parenteral Therapies

Anticipated Medication Management

bronchodialator
anticholinergics
- 4D block acetylcholine

mucolytics

NCLEX IV *(5)*: Basic Care and Comfort

Non-Pharmacologic Care Measures

- pursed-lip breathing
- diaphragmatic breathing
- proper nutrition
- IS

NCLEX III *(4)*: Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?

activity intolerance
discomfort/dyspnea
impaired resp function

Client/Family Education

List 3 potential teaching topics/areas

- proper coughing exercises
- prope IS uses
- educate on risk factors & triggers

NCLEX I *(1)*: Safe and Effective Care Environment

Multidisciplinary Team Involvement

(Which other disciplines do you expect to share in the care of this patient)

PT, RT, pulmonologist, micriobio, phorm, radiologist

tnight

ACTIVE LEARNING TEMPLATE: *Medication*

STUDENT NAME Layla Espenolakeel

MEDICATION Ceftriaxone : Rocephin REVIEW MODULE CHAPTER _____

CATEGORY CLASS anti-infectives, antibiotic

PURPOSE OF MEDICATION

Expected Pharmacological Action

inhibits bacterial cell wall synthesis by binding to penicillin binding proteis thus inhibiting proper cell wall production
cell eventualy lyse due to ongoing cell wall actulytic enzymes

Therapeutic Use

fight infection

↓ s/s of infection

Complications

Derm: rash urticaria
GI: diarrhea, pancreatitis
hemat: bleeding, eosinophilic, hemolytic anemia thrombocytopenia
local: pain at IM site, phlebitis at IV site

Medication Administration

Adults IM/IV: 1-2g q12-24hr
- periop prophylaxis: 1g 30min-2hr pre-op
- hepatic impairment: 2g/daily max

~~Contraindications/Precautions~~ Interactions

drug-drug: NOt administer concominantly with any calcium-containg solutions
may ↑ risk of bleeding w/ warfarin

~~Interactions~~. Contraindications/ Precautions

hypersensitivity: penicillins, cephalosphorins

caution: Combined severe hepatic/renal impairment
may ↑ risk of neurological adrx
- hx of GI disease
  - colitis!

Nursing Interventions

- monitor bowel function
- injection site reaction
- anaphylaxis
- vitals: temp! HR, BP
-

Labs
- false + for coombs
- ↑ AST, ALT, alkaline phosphate UPH BUN & creat

Client Education

- report diarrhea, abdominal cramping fever, bloody stool
- report vaginal itching discharge loose foul-smelling stool
- notify PCP if Fever & diarrhea develops

Evaluation of Medication Effectiveness

- ↓ of infection symptoms
  - Fever/temp. HR, BP,

overdose: N-acetylcysteine
↳ antidote

ACTIVE LEARNING TEMPLATE: Medication

STUDENT NAME Layla Espinola-Keel

MEDICATION Acetaminophen : Tylenol REVIEW MODULE CHAPTER _____

CATEGORY CLASS antipyretics, non-opiod analgesic

PURPOSE OF MEDICATION

Expected Pharmacological Action

Inhibits synthesis of prostaglandins that cause pain & fevers, especially in CNS. not anti inflammatory

Therapeutic Use

↓ pain & fever

Complications

CV: hyper/hypotension
Derm: acute generalized exanthemous pustulosis
rash, SJS,
GI: ↑ liver enzymes, constipation
Hemat: neutropenia
MS: muscle spasms Neuro: fatigue, insomnia

Medication Administration

PO adults: max 4g/daily
- 325-650 mg q4-6 or 1g 3-4x daily or 1300mg q8
- without or with food

IV adults:

≥50kg: 650mg q4 or 1g q6
- max: 4g/day

<50kg: 12.5mg/kg q4 or 15mg/kg q6
max 75mg/kg/day

Contraindications/Precautions

prev. sensitivity to products with: alcohol, sugar yellow dyes,
↳ may lead to severe hepatic impairment or acute liver disease

Caution: ↓ dose for hepatitic/renal disease, alcoholism, severe hypovolemia, malnutrition

Nursing Interventions

- asses pain level
- assess weight
- assess alcohol usage (↑ risk of hepatotoxic with chronic dose)
- rash, blisters, fever malaise, conjuctivitis, muscle joint aches

Labs: ↑ serum bilirubin, LDH, AST ALT, prothrombin time
may = hepatotoxicity

Interactions

drug-drug: chronic ↑ dose >2g/day may ↑ risk of bleeding w/ warfarin
concurrent use may ↑ risk of adverse reaction effects
↳ isoniazid, rifampin, rifapentin, phenytoin, barbiturates & NSAIDS!

Client Education

- chronic excessive use >4g/day may = hepatotoxicity, renal, ♡ damage
- do not take longer than 10 days unless dr. order
- avoid alcohol
- discontinue if rash occurs notify Dr
- do not take concurrently w/ salicylate or NSAIDS for >3days

Evaluation of Medication Effectiveness

reduction of fever
relief of mild-moderate pain

Name: [signature]

Nursing Problem Worksheet

Anticipated Patient Problem and Goals	Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include frequencies	Multidisciplinary Team Intervention (Prework) What will you do if your assessment is abnormal?
Problem: Impaired gas exchange	Monitor & ensure O2 levels are stable : >92%	encourage IS, deep breathing, respiratory consult, O2 therapy
Reasoning:	auscultate lungs q 2-4 for Respiratory status/func.	encourage fluids & ambulation
	repositioning freq. & high fowlers	encourage movement to break up fluids & expand lungs
Goal:		
Goal:		

Anticipated Patient Problem and Goals	Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include frequencies	Multidisciplinary Team Intervention (Prework) What will you do if your assessment is abnormal?
Problem: fatigue w/ activity intolerance	assess O2 levels before & after ambulation	encourage breaks & deep breathing when ambulated
Reasoning: SOB, dizziness fatigue	assess pt. perception of discomfort/fatigue when ambulating	Respiratory compliance pacing self during exercise notify PCP
	assess pt ability to utilize assistive devices q shift	educate on safe ambulation PT consult
Goal: pt. will ambulate several times during my TOC		
Goal: Pt. will use IS for 6-10 reps q hourly by EOC		