

Chest & Lower Respiratory Tract Disorders

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Atelectasis

- Etiology
- S/S
 - Dyspnea, cough, sputum production, pleural pain, tachypnea, tachycardia, resp. distress, central cyanosis, anxious, ↓ BS, crackles
- Dx
 - CXR, pulse ox
- Prevention

Treatment/ Nursing Care of Atelectasis

- Prevention- intervention
- Remove secretion
- Chest PT
- Nebulizer
- Deep breathing exercises
- PEEP, CPPB
- Bronchoscopy
- Intubation/ mechanical ventilation
- Thoracentesis
- Radiation if due to lung cancer

Tracheobronchitis

- Etiology
- S/S
- Treatment/Management
 - Antibiotics
 - ↑ fluids
 - Suctioning & bronchoscopy
 - Cool vapor therapy/ steam inhalations
 - Moist heat to chest

Pneumonia

- Classifications
 - Community-Acquired pneumonia (CAP)
 - Health care associated pneumonia
 - Hospital Acquired pneumonia
 - Ventilator associated pneumonia
 - Pneumonia in immunocompromised host
 - Aspiration pneumonia
- Risk factors
- S/S

Pneumonia

- Diagnostic Tests
 - CXR, blood cultures, sputum cultures, pulse ox
- Prevention
 - Pneumococcal vaccine
 - Education
- Treatment
 - Airway, O2, pulse ox
 - Antibiotics within 4 hrs
 - Antipyretics, antitussives, decongestants, antihistamines
 - Hydration, rest
 - CPT
- Complications

Nursing Process: Interventions

- ❖ Oxygen with humidification to loosen secretions
 - Face mask or nasal cannula
- ❖ Coughing techniques
- ❖ Chest physiotherapy
- ❖ Position changes
- ❖ Incentive spirometry
- ❖ Nutrition
- ❖ Hydration
- ❖ Rest
- ❖ Activity as tolerated
- ❖ Patient teaching
- ❖ Self-care

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Collaborative Problems

- ❖ Continuing symptoms after initiation of therapy
- ❖ Sepsis and septic shock
- ❖ Respiratory failure
- ❖ Atelectasis
- ❖ Pleural effusion
- ❖ Delirium

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Expected Outcomes

- ❖ Demonstrates improved airway patency
- ❖ Rests and conserves energy and then slowly increasing activities
- ❖ Maintains adequate hydration; adequate dietary intake
- ❖ Verbalizes increased knowledge about management strategies
- ❖ Complies with management strategies
- ❖ Exhibits no complications

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Aspiration

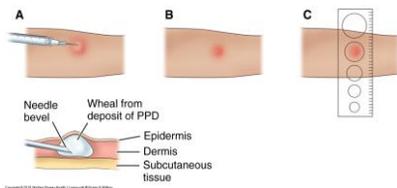
- Risk Factors
- S/S
 - Tachycardia, dyspnea, cyanosis, HTN, ↓ bp, death
- Dx
- Treatment
- Prevention

Tuberculosis

- M. tuberculosis
- Sites of infection
- Risk Factors
- Associated factors
- S/S
 - Weight loss, fever, night sweat, cough, hemoptysis, fatigue
- Dx
 - CXR

Tuberculosis

- Con't of Dx
 - Mantoux- tuberculin/ PPD skin test
 - Quantiferon- TB Gold test (QFT-G)



Tuberculosis

- Bacille Calmette- Guerin (BCG) vaccine
- Classifications (0-5)
- Treatment
 - Initial phase- multiple meds daily x 8 weeks
 - Continuation- INH & rifampin or INH & rifapentine 4-7 months
 - Prophylactic treatment

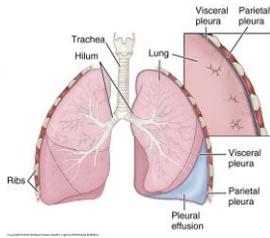
Tuberculosis

- Concerns
 - Airway
 - Transmission
 - Adherence to treatment
 - Adequate nutrition

Lung Abscess

- Necrosis of lung parenchyma
- Etiology
 - S. aureus, klebsiella
- S/S
 - ↓ / absent BS, pleural friction rub, crackles
- Dx
 - CXR, sputum cx, bronchoscopy
- Treatment/ Nursing Care
 - Prevention
 - Antibiotics
 - Drainage
 - Surgery- rare

Pleural



- Fluid in pleural space
- Secondary process
 - HF, TB, pneumonia, pulmonary infections, nephrotic syndrome, connective tissue dz, PE, tumors
- S/S
- Dx
 - CXR, chest CT, thoracentesis
- Treatment/ Nursing Care

Empyema

- Accumulation of purulent fluid
- Etiology
- S/S
 - ↓ or absent BS, ↓ fremitus
- Dx
 - Chest CT, thoracentesis
- Treatment/ Nursing Care
 - Drain
 - Antibiotic
 - Tube thoracostomy
 - Open chest drainage- ? Rib resection

Pulmonary Edema

- Fluid accumulation
- Etiology/pathophysiology
- S/S
 - Dyspnea, cyanosis, anxious, agitated, frothy sputum- blood tinge/pink, tachycardia, ↓ O2 sat, hypoxia
- Dx
 - CXR
- Treatment/ Nursing Care

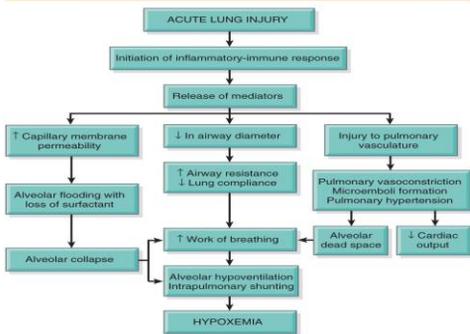
Acute Respiratory Failure

- Sudden, life threatening impairment in ventilation & perfusion
- ↓ PaO₂ < 50 mmHg, ↑ PaCO₂ > 50 mmHg & arterial pH < 7.35
- Etiologies
- S/S
 - Restlessness, fatigue, headache, dyspnea, air hunger, tachycardia, ↑ bp → confusion, lethargy, tachycardia, tachypnea, central cyanosis, diaphoresis → resp arrest
- Dx
 - ABG, CXR
- Treatment

Acute Respiratory Distress Syndrome (ARDS)

- Sudden, progressive pulmonary edema, hypoxemia (unresponsive to O₂) and absence of ↑ left arterial pressure
- Etiology- lung injury
- Death- multi-system organ failure
- Dx
 - BNP (brain natriuretic peptide), ECG,
 - Pulmonary artery catheterization
- Treatment
 - Ventilator- PEEP

Physiology ■ ■ ■ Pathophysiology



ARDS Medical Management

- ❖ Identification and treatment of underlying cause
- ❖ Intubation, mechanical ventilation with PEEP to keep alveoli open
- ❖ Hypovolemia treated
- ❖ Prone positioning is best for oxygenation, frequent repositioning to safeguard integumentary system
- ❖ Nutritional support, enteral feedings preferred
- ❖ Reduce anxiety

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Pulmonary Hypertension

- Right ventricular enlargement
- Etiology
 - Lung condition causing hypoxemia
- S/S
- Treatment/ Nursing Care
 - O₂
 - Pulse ox, ECG
 - Chest PT and bronchial hygiene
 - Bronchodilators
 - Bedrest, ↓ Na, diuretics, digoxin,

Pulmonary Embolism

- Occlusion of pulmonary artery- thrombus (i)
- Etiology
- S/S
 - dyspnea
- Dx
- Prevention
 - Leg exercises, SCD's, prophylaxis anticoagulant
- Treatment/ Nursing Care
 - Improve respiratory and vascular status
 - Anticoagulation and thrombolytic therapy
 - Surgery

Sarcoidosis

- Etiology- unknown
- Hypersensitivity
 - bacteria, fungi, viruses, chemicals → granuloma and fibrosis
- Multisystem
- S/S
- Dx
 - CXR, CT, biopsy
- Treatment/ Nursing Care
 - Corticosteroids, cytotoxic drugs, immunosuppressants

Pneumoconioses

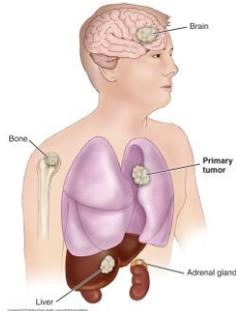
- Occupational
 - Asbestosis
 - Silicosis
 - Coal worker's pneumoconiosis
"Black Lung Disease"
- Prevention
- Not treatable

Lung Cancer

- 2nd most common
- Risk Factors
 - Tobacco- pack years
 - Secondhand smoke
 - Environmental/ occupational exposure
 - Genetics

Lung Cancer

- Classifications
 - Small cell lung cancer
 - Non-small cell lung cancer
 - Squamous cell carcinoma
 - Large cell carcinoma
 - Adenocarcinoma
 - Lung carcinoid tumor
- Staging
 - I
 - II
 - III
 - IV



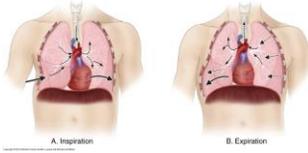
Lung Cancer

- S/S
- Dx- CXR, CT, bronchoscopy, biopsy, fine needle aspiration, MRI, PET scan, PFT's, ABG's
- Treatment/ Nursing Care
 - Surgery
 - Radiation'
 - Chemotherapy
 - Palliative care
 - Manage symptoms
 - Airway & breathing

Chest Trauma

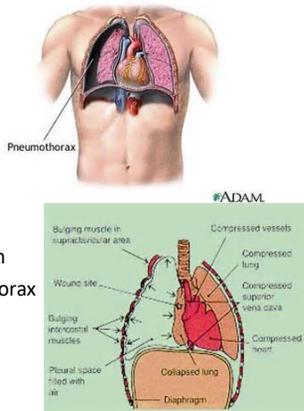
- ❖ Blunt trauma
- ❖ Sternal, rib fractures
- ❖ Flail chest
- ❖ Pulmonary contusion
- ❖ Penetrating trauma
- ❖ Pneumothorax
 - Spontaneous or simple
 - Traumatic
 - Tension pneumothorax

Blunt Chest Trauma

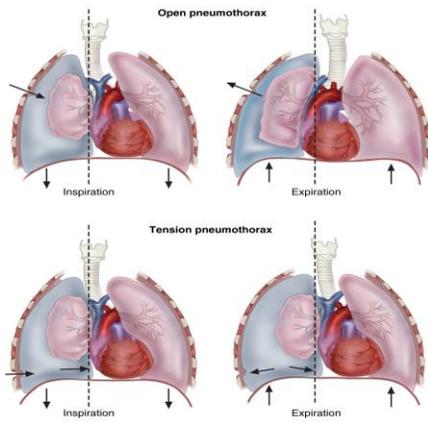


- Etiology
- Complications
- Dx
- Sternal & Rib fractures
- Flail chest
- Pulmonary contusion

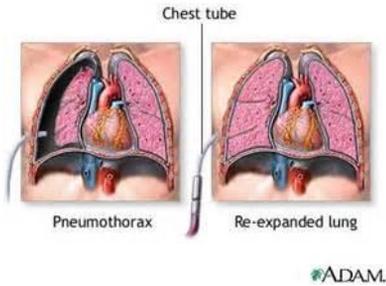
Pneumothorax



- Simple
- Traumatic
- Tension
- S/S
 - Sudden chest pain
 - Size of pneumothorax
- Dx
- Treatment
 - Chest tube



Chest Tube



Other

- Cardiac Tamponade
- Subcutaneous Emphysema

Novel Coronavirus (Covid-19)/ SARS-CoV-2 Infection

- Epidemiology
- March 20th 2020
 - United States
 - Total cases: 15,219
 - Total deaths: 201
- Global
 - Week of March 30, 2021
 - 3.8 million new cases
 - 64,000 new deaths
- [Coronavirus Disease \(COVID-19\) Situation Reports \(who.int\)](#)
- [CDC COVID Data Tracker](#)

CDC, WHO

Novel Coronavirus (Covid-19)/ SARS-CoV-2 Infection

- Clinical Presentation

- PUI

- Risk Assessment

- Travel history
- Contact with known + COVID-19



- Diagnostic Testing

- Prevention

- Hand hygiene, face mask
- Vaccine

Clinical Spectrum

- Asymptomatic

- Mild illness

- Moderate illness

- SpO2 >94%

- Severe illness

- SpO2 <94%, RR >30

- Critical illness

- Respiratory failure, septic shock, and or MODS

Treatment/ Care COVID

- Infection control measures

- Isolate
- PPE

- Oxygenate/ ventilate

- Hemodynamics

- Crystalloids, vasopressor (levo), dopamine only if renal protection, dobutamine if cardiac dysfunction with vasopressor, corticosteroid therapy

- Acute kidney injury

- Sepsis

- Extracorporeal Membrane oxygenation- no evidence

Con't Treatment/Care

- Antiviral
 - Remdesivir
- Antithrombotic therapy
- Convalescent plasma
 - Donor plasma from recovered COVID-19 infection
- Monoclonal antibodies
- Supplements
