IM 1 Pharm Immersion Lab – Scenario 3 Pathophysiology Sheets (Ingalls, Laura)

1. Disease Process & Brief Pathophysiology

• **Influenza** highly contagious respiratory virus communicable through humans

2. Factors for the Development of the Disease/Acute Illness (Influenza)

Risk factors include exposure to influenza droplets via inhalation of particles or direct contact through contaminated surfaces. More likely to develop illness if immunocompromised

3. Signs and Symptoms (Influenza)

Chills, fever, myalgia, headache, cough, sore throat, fatigue.

Complications of illness include pneumonia (either primary viral pneumonia or secondary bacterial pneumonia), ear infections, sinus infections.

4. Diagnostic Tests pertinent or confirming of diagnosis (Influenza)

History, physical assessment, viral nasal swab

5. Lab Values that may be affected (Influenza)

Viral nasal swab

If secondary infection, may see elevated white blood cell counts

6. Current Treatment (Influenza)

Oseltamivir

Encourage fluids

Ibuprofen or acetaminophen for fever and body aches

Nasal decongestants

1. Disease Process & Brief Pathophysiology

• **Pneumonia** is an acute infection of the lung, usually involving accumulation of extra fluid in

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2. Factors for the Development of Disease/Acute Illness (Pneumonia)

Weakened immune system, poor swallow reflexes

3. Signs and Symptoms (Pneumonia)

Fatigue, dyspnea, fever, pleuritic pain, crackles

lungs | (risk of aspiration), extended respiratory infection, prolonged illness leading to immobility, atelectasis, poor airway clearance (inability to cough up secretions) | and/or wheezes to lung fields, cough

4. Diagnostic Tests pertinent or confirming of diagnosis (Pneumonia)

Arterial blood gases (ABGs)

Chest X-ray

Pulmonary Function Tests

5. Lab Values that may be affected (Pneumonia)

Complete blood count

Arterial blood gases (ABGs)

Albumin level

Sputum culture and sensitivity

6. Current Treatment (Pneumonia)

Antibiotics

Cough suppressants

Guaifenesin

Antipyretics

Bronchodilators

1. Disease Process & Brief Pathophysiology

● **Atrial Fibrillation** (A-fib) is characterized by a total disorganization of atrial electrical activity caused by

2. Factors for the Development of the Disease/Acute Illness (Atrial Fibrillation)

Atrial fibrillation usually occurs in the patient with

3. Signs and Symptoms (Atrial Fibrillation)

Atrial heart rate (how many times the atria contract per minute) as high as 350-600 beats/minute. P

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multiple ectopic foci resulting in loss of effective atrial contraction. As a result, irregular heart rhythm occurs.

underlying heart disease, such as coronary artery disease (CAD), valvular heart disease, cardiomyopathy, hypertension, heart failure, and pericarditis. It also can develop acutely with thyrotoxicosis, alcohol intoxication, caffeine use, electrolyte disturbances, stress, and cardiac surgery.

waves are replaced by chaotic, fibrillatory waves. Ventricular rate (how many times the ventricle contracts per minute) varies and is usually irregular.

Dyspnea, chest pain, feeling of "fluttering" or heart "flip-flopping", low blood pressure, irregular pulse rate, decreased oxygen saturation, weakness, fatigue

Risk of blood clot formation puts patient at a high risk for stroke (cerebral vascular accident)

4. Diagnostic Tests pertinent or confirming of diagnosis (Atrial Fibrillation)

Electrocardiogram (ECG/EKG)

Echocardiogram

5. Lab Values that may be affected (Atrial Fibrillation)

Potassium

Magnesium

Risk of blood clots – watch coagulation labs (PT, INR, PTT, Platelets)

6. Current Treatment (Atrial Fibrillation)

Cardiac glycosides (digoxin)

Beta-blockers

Calcium channel blockers

Antiplatelet medications

Anticoagulant medications

Electric cardioversion

1. Disease Process & Brief Pathophysiology

● **Heart Failure** is an abnormal clinical syndrome that involves inadequate pumping and/or filling of the heart. This results in the inability of the heart to provide enough blood to meet the oxygen needs of the tissues.

2. Factors for the Development of the Disease/Acute Illness (Heart Failure)

Risk factors include CAD, HTN, and advancing age. Diabetes, tobacco use, obesity, and high serum cholesterol also contribute to the development of HF

3. Signs and Symptoms (Heart Failure)

fatigue, cough, dyspnea, tachycardia, edema, and limitations of usual activities of daily living (ADLs)

HF usually begins with signs of fluid retention, such as weight gain, exertional dyspnea, or orthopnea

Heart failure

4. Diagnostic Tests pertinent or confirming of diagnosis (Heart Failure)

chest x-ray, electrocardiogram (ECG), sleep studies, echocardiogram, stress testing, and cardiac catheterization

5. Lab Values that may be affected (Heart Failure)

Cardiac markers (troponin, CK, myoglobin)

b-type natriuretic peptide

liver function

thyroid function

basic metabolic panel (electrolytes)

complete blood count

6. Current Treatment (Heart Failure)

Diuretics (ex: furosemide)

Antihypertensives

Oxygen

Antiarrhythmics

Thyroid medications