

## **Case Study: Asthma Exacerbation**

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#### **Clinical Dashboard - Pertinent History and Physical**

##### **Paragraph Summary of Case:**

- Paragraph Summary: This is a case of a 55-year-old female patient presenting with 5 days of worsening shortness of breath. The patient has a history of asthma and is now experiencing an exacerbation of her symptoms.

##### **Patient Approach:**

- Education Level: College graduate
- Emotional Response: Anxious and distressed about her breathing difficulties
- Communication Style: Speaks clearly but becomes short of breath when talking for long periods

##### **History of Present Illness (HPI):**

- Onset: 5 days ago
- Location: Chest, causing shortness of breath
- Duration: Gradually worsening over 5 days
- Character: Chest tightness, wheezing, and difficulty breathing
- Aggravating/Alleviating Factors: Aggravated by activity, relieved somewhat by resting
- Radiation: No radiation
- Timing: Symptoms are constant, with intermittent worsening

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- Severity: Severe enough to limit daily activities
- Additional Details: Patient reports using her rescue inhaler more frequently over the past few days with minimal relief

### **Past Medical History (PMHx):**

- Active Problems: Asthma, hypertension
- Inactive Problems: None
- Hospitalizations: Previously hospitalized for asthma exacerbation 2 years ago
- Surgical History: Appendectomy
- Immunizations: Up to date

### **Social History (SHx):**

- Tobacco: Former smoker, quit 10 years ago
- Alcohol: Social drinker, 1-2 drinks per week
- Substances: Denies use
- Diet: Healthy, balanced diet
- Exercise: Daily walks, limited recently due to breathing difficulties
- Sexual Activity: Sexually active, uses condoms
- Home Life/Safety: Lives alone in a one-bedroom apartment, has no concerns about home safety
- Mood: Anxious about her breathing symptoms
- Contextual Details: Works as an administrative assistant, took time off work due to her current illness

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### **Family History (FHx):**

- Parents: Father has hypertension, mother has asthma
- Siblings: Brother has asthma

### **Medications and Allergies:**

- Medications: Fluticasone/salmeterol (Advair) inhaler, albuterol rescue inhaler, lisinopril for hypertension
- Allergies: Penicillin

### **Review of Systems (ROS):**

- Pertinent Findings: Positive for shortness of breath, wheezing, and chest tightness. Negative for fever, cough, chest pain, or other concerns.

### **Physical Examination:**

- Findings: Respiratory distress with use of accessory muscles, audible wheezing, and prolonged expiratory phase. Oxygen saturation 92% on room air.

### **Diagnostic Reasoning:**

- Essential HPI Details User Should Elicit: Onset and duration of symptoms, factors that aggravate or alleviate the symptoms, and the patient's use of rescue medications
- Differential Diagnoses: 1) Asthma exacerbation, 2) Pneumonia, 3) COPD exacerbation

## **Case Study: Asthma Exacerbation**

- Rationale: The patient's history of asthma, gradually worsening shortness of breath, and physical exam findings of wheezing and respiratory distress are most consistent with an asthma exacerbation.

### **Teaching Points:**

- Key Learning Objectives:

Perform a focused history and physical exam to identify an asthma exacerbation.

Understand the pathophysiology of asthma and the factors that can trigger an exacerbation.

Discuss the appropriate management of an asthma exacerbation, including the use of bronchodilators, corticosteroids, and oxygen therapy.

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- Educational Content:

Asthma is a chronic inflammatory disorder of the airways, characterized by airflow obstruction, bronchial hyperresponsiveness, and symptoms of wheezing, cough, and shortness of breath.

Asthma exacerbations are episodes of progressive worsening of asthma symptoms, including increased shortness of breath, wheezing, cough, and chest tightness.

Triggers for asthma exacerbations can include respiratory infections, allergens, air pollutants, exercise, and emotional stress.

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Management of asthma exacerbations involves the use of bronchodilators (e.g., albuterol) to rapidly relieve symptoms, and corticosteroids (e.g., prednisone) to reduce inflammation and prevent further deterioration.

Oxygen therapy may be necessary to maintain adequate oxygenation during an asthma exacerbation.

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### PATIENT DOOR CHART and Learner Instructions

- Patient Name: Jane Doe
- Age: 55
- Legal Sex: Female
- Chief Complaint: Shortness of breath
- Clinical Setting: Emergency Department

#### Vital Signs:

- Blood Pressure Reading: 145/90 mmHg
- Pulse Rate: 110 bpm
- Respiratory Rate: 24 breaths/min
- Temperature(Celsius): 37.2°C
- SpO2: 92% on room air