

## **Case Study: Asthma Exacerbation**

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

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

- Paragraph Summary: A 44 year-old female presents with 3 days of shortness of breath, wheezing, and chest tightness. She has a history of asthma and is concerned about an exacerbation of her underlying condition.

#### **Patient Approach:**

- Education Level: High school graduate
- Emotional Response: Anxious and concerned about her symptoms
- Communication Style: Focused and provides pertinent details, but may need some prompting to fully elaborate on her history

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

- Onset: 3 days ago
- Location: Chest
- Duration: 3 days
- Character: Shortness of breath, wheezing, chest tightness
- Aggravating/Alleviating Factors: Aggravated by activity, improved with rest and bronchodilator use
- Radiation: Non-radiating

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- Timing: Persistent, with worsening over the past 3 days
- Severity: Moderate to severe, interfering with daily activities
- Additional Details: She reports using her albuterol inhaler more frequently over the past few days but is not getting adequate relief.

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

- Active Problems: Asthma, hypertension
- Inactive Problems: None
- Hospitalizations: 1 prior hospitalization for asthma exacerbation 2 years ago
- Surgical History: None
- Immunizations: Up to date

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

- Tobacco: Former smoker, quit 10 years ago
- Alcohol: Social drinker
- Substances: Denies
- Diet: Balanced, healthy
- Exercise: Limited due to shortness of breath
- Sexual Activity: Sexually active, monogamous
- Home Life/Safety: Lives with supportive spouse
- Mood: Anxious about current symptoms
- Contextual Details: Works as an office administrator, exposed to dust and cleaning chemicals at work

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

- Parents: Mother with asthma, father with hypertension
- Siblings: Brother with asthma

### **Medications and Allergies:**

- Medications: Albuterol inhaler (as needed), lisinopril for hypertension
- Allergies: Penicillin (rash)

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

- Pertinent Findings: Significant shortness of breath, wheezing, chest tightness, and fatigue. Denies fever, chills, or other systemic symptoms.

### **Physical Examination:**

- Findings: Anxious appearing, using accessory muscles of respiration. Tachypneic with respiratory rate of 24 breaths/min. Diffuse wheezes heard on auscultation. Oxygen saturation 92% on room air.

### **Diagnostic Reasoning:**

- Essential HPI Details User Should Elicit: Onset and duration of symptoms, exacerbating and alleviating factors, prior asthma history and exacerbations, current medication use and adherence.
- Differential Diagnoses: Asthma exacerbation, COPD exacerbation, congestive heart failure, pneumonia

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- Rationale: The patient's history of asthma, current presentation of shortness of breath, wheezing, and chest tightness, and physical exam findings of tachypnea and wheezes point towards an asthma exacerbation as the likely diagnosis. Other diagnoses such as COPD exacerbation or heart failure should be considered, but the patient's age and lack of other chronic respiratory or cardiac conditions make asthma the most likely cause.

### **Teaching Points:**

- Key Learning Objectives:

Obtain a focused history to identify key features of an asthma exacerbation

Perform a targeted physical examination to assess severity of an asthma exacerbation

Develop a differential diagnosis and rationale for the most likely diagnosis

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- Educational Content:

Asthma exacerbations are characterized by worsening of respiratory symptoms such as shortness of breath, wheezing, and chest tightness.

Key historical features to elicit include onset, duration, and alleviating/exacerbating factors of symptoms, as well as prior asthma history and current medication use.

Physical exam findings may include tachypnea, wheezing, and decreased oxygen saturation, which can help determine the severity of the exacerbation.

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## Case Study: Asthma Exacerbation

### PATIENT DOOR CHART and Learner Instructions

- Patient Name: Jane Doe
- Age: 44
- Legal Sex: Female
- Chief Complaint: Shortness of breath, wheezing, chest tightness
- Clinical Setting: Emergency department

#### Vital Signs:

- Blood Pressure Reading: 132/86 mmHg
- Pulse Rate: 102 bpm
- Respiratory Rate: 24 breaths/min
- Temperature(Celsius): 37.2°C
- SpO2: 92% on room air