

Clinical Overview Summary

Clinical Input

The patient is a 45-year-old male with a 2-week history of persistent dry cough and exertional dyspnea, which worsens at night. He has had similar episodes in the past that responded to inhalers. The patient is a non-smoker and has construction work exposure.

Primary Diagnosis

Primary Diagnosis: [Asthma](#)

- Asthma is a chronic inflammatory disease of the airways characterized by recurring episodes of wheezing, coughing, chest tightness, and shortness of breath.

Key symptoms are below:

- Persistent dry cough, especially at night or with exertion
 - Exertional dyspnea (shortness of breath)
 - Wheezing or whistling sounds while breathing out
 - Chest tightness or discomfort
 - Episodes of coughing or wheezing that worsen at night or with exercise
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Differential Diagnosis:

Differential diagnoses are related medical conditions that may present with similar symptoms and should be considered before confirming the final diagnosis; some possible differential diagnoses are listed below.

- Pneumonia: An infection in the lungs that can cause symptoms similar to asthma, such as cough and shortness of breath.
 - Chronic Obstructive Pulmonary Disease (COPD): A progressive lung disease that can cause symptoms similar to asthma, such as cough and shortness of breath.
 - Acid Reflux: A condition in which stomach acid flows back into the esophagus, causing symptoms such as cough and chest discomfort.
 - Heart Failure: A condition in which the heart is unable to pump enough blood, causing symptoms such as shortness of breath and fatigue.
 - Upper Airway Disorders: Conditions such as sinusitis or allergic rhinitis that can cause symptoms similar to asthma, such as cough and congestion.
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Common Comorbidities:

Common comorbidities are other health conditions that frequently occur together with this disease in the same patient; some commonly associated conditions are listed below.

- Allergic rhinitis
 - Atopic dermatitis (eczema)
 - Gastroesophageal reflux disease (GERD)
 - Sinusitis
 - Obesity
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Medical Prescription

Medication Name: Fluticasone (Flovent)

- Drug Class: Inhaled corticosteroid
- Indication: Long-term control of asthma symptoms
- Dosage:

Adult Dose (≥18 years): 2.5 mg if weight <60 kg, 5 mg if weight ≥60 kg

Pediatric Dose (6-17 years): 1.25 mg if weight <30 kg, 2.5 mg if weight 30-50 kg, 5 mg if weight >50 kg

Infant Dose (1 month - 5 years): Not recommended for infants

- Adult Dose (≥18 years): 2.5 mg if weight <60 kg, 5 mg if weight ≥60 kg
- Pediatric Dose (6-17 years): 1.25 mg if weight <30 kg, 2.5 mg if weight 30-50 kg, 5 mg if weight >50 kg
- Infant Dose (1 month - 5 years): Not recommended for infants
- Route: Inhalation
- Frequency: Twice daily
- Duration: Ongoing, based on condition
- Timing: Take with spacer, inhale slowly and deeply
- Contraindications: Hypersensitivity to fluticasone or other corticosteroids
- Side Effects to Watch: Hoarseness (5%), oral thrush (2%), cough (2%)
- Special Notes: Rinse mouth with water after use, avoid using with other corticosteroids

Medication Name: Albuterol (Ventolin)

- Drug Class: Short-acting beta2-adrenergic receptor agonist (SABA)
- Indication: Quick relief of acute asthma symptoms
- Dosage:

Adult Dose ("e18 years): 2.5 mg if weight <60 kg, 5 mg if weight "e60 kg

Pediatric Dose (6-17 years): 1.25 mg if weight <30 kg, 2.5 mg if weight 30-50 kg, 5 mg if weight >50 kg

Infant Dose (1 month - 5 years): 0.5 mg if weight <10 kg, 1 mg if weight 10-15 kg, 1.25 mg if weight >15 kg

- Adult Dose ("e18 years): 2.5 mg if weight <60 kg, 5 mg if weight "e60 kg
- Pediatric Dose (6-17 years): 1.25 mg if weight <30 kg, 2.5 mg if weight 30-50 kg, 5 mg if weight >50 kg
- Infant Dose (1 month - 5 years): 0.5 mg if weight <10 kg, 1 mg if weight 10-15 kg, 1.25 mg if weight >15 kg
- Route: Inhalation
- Frequency: As needed, every 4-6 hours
- Duration: Acute relief, not for long-term control
- Timing: Take with spacer, inhale slowly and deeply
- Contraindications: Hypersensitivity to albuterol or other beta2-agonists
- Side Effects to Watch: Tremors (10%), nervousness (5%), palpitations (2%)
- Special Notes: Use only as needed, do not exceed recommended dose

Medication Name: Montelukast (Singulair)

- Drug Class: Leukotriene receptor antagonist
- Indication: Prevention of asthma symptoms, especially at night or with exercise
- Dosage:

Adult Dose ("e18 years): 10 mg once daily

Pediatric Dose (6-17 years): 5 mg if weight <30 kg, 10 mg if weight "e30 kg

Infant Dose (1 month - 5 years): 4 mg if weight <15 kg, 5 mg if weight "e15 kg

- Adult Dose ("e18 years): 10 mg once daily
- Pediatric Dose (6-17 years): 5 mg if weight <30 kg, 10 mg if weight "e30 kg
- Infant Dose (1 month - 5 years): 4 mg if weight <15 kg, 5 mg if weight "e15 kg
- Route: Oral
- Frequency: Once daily, in the evening
- Duration: Ongoing, based on condition
- Timing: Take without regard to meals

- Contraindications: Hypersensitivity to montelukast or other leukotriene modifiers
 - Side Effects to Watch: Headache (18%), abdominal pain (5%), diarrhea (2%)
 - Special Notes: Not for acute relief, use in combination with other asthma medications as needed
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Lab Tests:

Diagnostic tests are medical tests used to confirm the diagnosis, assess the severity of the condition, or rule out other possible diseases; key tests are listed below.

- Pulmonary function tests (PFTs), such as spirometry, to assess lung function and diagnose asthma
 - Peak expiratory flow (PEF) monitoring to track lung function over time
 - Methacholine challenge test to assess airway responsiveness
 - Complete blood count (CBC) to rule out other conditions, such as infection or inflammation
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Management Strategies:

- Quick-relief medications, such as short-acting beta2-agonists (e.g., albuterol), to relieve acute asthma symptoms
 - Long-term control medications, such as inhaled corticosteroids (e.g., fluticasone) and leukotriene modifiers (e.g., montelukast), to prevent asthma symptoms and improve lung function
 - Adjunct therapies, such as immunotherapy (allergy shots) and bronchial thermoplasty, to reduce inflammation and improve symptoms in select patients
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Lifestyle Recommendations:

- Avoid triggers, such as allergens, irritants, and respiratory infections, to reduce asthma symptoms
 - Use a peak flow meter to track lung function and adjust treatment as needed
 - Stay physically active, but avoid strenuous exercise during asthma exacerbations
 - Get vaccinated against influenza and pneumonia to reduce the risk of respiratory infections
 - Consider using a humidifier to add moisture to the air, which can help relieve cough and congestion
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Prognosis and Follow-Up:

- Follow-up appointments with a healthcare provider every 1-3 months to monitor asthma symptoms and adjust treatment as needed
 - Key patient education points, such as understanding asthma symptoms, using medications correctly, and avoiding triggers
 - Action plan guidance for patients, including what to do during an asthma exacerbation and when to seek emergency care
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Clinical Pearls:

- Asthma is a chronic condition that requires ongoing management and monitoring to control symptoms and prevent exacerbations.
 - Using a combination of quick-relief and long-term control medications can help improve asthma symptoms and reduce the risk of exacerbations.
 - Identifying and avoiding triggers, such as allergens and irritants, can help reduce asthma symptoms and improve quality of life.
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