montelukast (mon-te-loo-kast)

**Therapeutic Class:*** allergy, cold, and cough remedies, bronchodilators

**Pharmacologic Class:*** leukotriene antagonists

**Pregnancy Category B**

**Indications**


**Action**

Ameliorates the effects of leukotrienes, which mediate the following: Airway edema, Smooth muscle constriction, Altered cellular activity. Result is decreased inflammatory process, which is part of asthma and allergic rhinitis. Therapeutic Effects: Decreased frequency and severity of acute asthma attacks. Decreased severity of allergic rhinitis. Decreased attacks of exercise-induced bronchoconstriction.

**Pharmacokinetics**

**Absorption:** Rapidly absorbed (63–73%) following oral administration.

**Distribution:** Unknown.

**Protein Binding:** 99%.

**Metabolism and Excretion:** Mostly metabolized by the liver (by P450 3A4 and 2C9 enzyme systems); metabolites eliminated in feces via bile; negligible renal excretion.

**Half-life:** 2.7–5.5 hr.

**TIME/ACTION PROFILE (improved symptoms of asthma)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO (swallow)</td>
<td>within 24 hr</td>
<td>3–4 hr</td>
<td>24 hr</td>
</tr>
<tr>
<td>PO (chew)</td>
<td>within 24 hr</td>
<td>2–2.5 hr</td>
<td>24 hr</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**

Contraindicated in: Hypersensitivity.

Use Cautiously in: Acute attacks of asthma. Phenylketonuria (chewable tablets contain aspartame); Hepatic impairment (may need reduced doses); Reduction of corticosteroid therapy (may ↑ the risk of eosinophilic conditions); OB, Lactation, Pedi: Pregnancy, lactation, or children <1 yr (safety not established).

**Adverse Reactions/Side Effects**

**CNS:** SUICIDAL THOUGHTS, agitation, aggression, anxiety, depression, disorientation, twitching, hallucinations, headache, insomnia, irritability, restlessness, tremor, weakness. **EENT:** Nosebleed, sinusitis (children), rhinitis (children). **Resp:** Rhinorrhea. **GI:** Abdominal pain, diarrhea (children), dyspepsia, nausea (children). **Muscle:** Tendon rupture. **Neuro:** Tendon rupture. **Derm:** Eosinophilic conditions (including Stevens-Johnson syndrome, toxic epidermal necrolysis, rash). **Misc:** Eosinophilic conditions (including Stevens-Johnson syndrome, toxic epidermal necrolysis, rash).

**Interactions**

**Drug-Drug:** Drugs which induce the CYP450 enzyme system (phenobarbital and rifampin) may ↓ the effects of montelukast.

**Route/Dosage**

**Asthma and Allergic Rhinitis**

PO (Adults and Children ≥ 14 yr): 10 mg once daily.

PO (Children 6–14 yr): 5 mg once daily (as chewable tablet).

PO (Children 6–14 yr): 5 mg once daily (as chewable tablet granules).

PO (Children 2–5 yr): 4 mg once daily (as chewable tablet or granules).

PO (Children 6–23 months): 4 mg once daily (as oral granules).

**Exercise-Induced Bronchoconstriction (EIB)**

PO (Adults and Children ≥ 6 yr): 10 mg at least 2 hr before exercise. Do not take within 24 hr of another dose; if taking daily doses, do not take dose for EIB.

**NURSING IMPLICATIONS**

**Assessment**

- Assess lung sounds and respiratory function prior to and periodically during therapy.
- Assess allergy symptoms (rhinitis, conjunctivitis, hives) before and periodically during therapy.
- Monitor closely for changes in behavior that could indicate the emergence or worsening of depression or suicidal thoughts.
- Assess for rash periodically during therapy. May cause Stevens-Johnson syndrome. Discontinue therapy if severe or if accompanied with fever.
general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and/or eosinophilia.

**Lab Test Considerations:** May cause ↑ AST and ALT concentrations.

**Potential Nursing Diagnoses**

**Indications**

- Do not confuse Singulair with Sinequan.
- Doses of inhaled corticosteroids may be gradually decreased with supervision of health care professional; do not discontinue abruptly.

**Implementation**

- PO: For asthma, administer once daily in the evening. For allergic rhinitis, may be administered at anytime of day.
- Administer granules directly into mouth or mixed in a spoonful of cold or room temperature foods (use only applesauce, mashed carrots, rice, or ice cream). Do not open packet until ready to use. After opening packet, administer full dose within 15 min. Do not store mixture. Discard unused portion. Do not dissolve granules in fluid, but fluid may be taken following administration. Granules may be administered without regard to meals.
- For Exercise Induced Bronchoconstriction: Administer one tablet at least 2 hrs before exercise; do not take within 24 hr of another dose.

**Patient/Family Teaching**

- Instruct patient to take medication daily in the evening or at least 2 hrs before exercise, even if not experiencing symptoms of asthma. Do not double doses. Do not discontinue therapy without consulting health care professional.
- Instruct patient to not to discontinue or reduce other asthma medications without consulting health care professional.
- Advise patient that montelukast is not used to treat acute asthma attacks, but may be continued during an acute exacerbation. Patient should carry rapid-acting therapy for bronchospasm at all times. Advise patient to notify health care professional if more than the maximum number of short-acting bronchodilator treatments prescribed for a 24 hr period are needed.

**Evaluation/Desired Outcomes**

- Prevention of and reduction in symptoms of asthma.
- Decrease in severity of allergic rhinitis.
- Prevention of exercise-induced bronchoconstriction.

**Why was this drug prescribed for your patient?**

especially during early antidepressant therapy. Assess symptoms on a day-to-day basis as changes may be abrupt. If these symptoms or rash occurs, notify health care professional.

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