ambrisentan (am-bri-sen-tan)

Letairis, Volibris

**Classification**

Therapeutic: endothelin receptor antagonists

Pharmacologic: endothelin receptor antagonists

**Pregnancy Category:** X

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**Indications**

Pulmonary arterial hypertension (WHO Group 1).

**Action**

Antagonizes endogenous endothelin, resulting in vasodilation. Therapeutic Effects: Improved exercise capacity and delayed clinical worsening.

**Pharmacokinetics**

**Absorption:** Absorbed following oral administration. Bioavailability unknown.

**Distribution:** Unknown.

**Protein Binding:** 99%.

**Metabolism and Excretion:** Highly metabolized.

**Half-life:** 15 hr (effective half-life 9 hr).

**TIME/ACTION PROFILE (blood levels)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>unknown</td>
<td>2 hr</td>
<td>24 hr</td>
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**Contraindications/Precautions**

**Contraindicated in:** OB, Lactation: Pregnancy or lactation; Idiopathic pulmonary fibrosis; Moderate/severe hepatic impairment; Significant anemia.

**Use Cautiously in:** Mild hepatic impairment; Pedi: Safety and efficacy not established.

**Adverse Reactions/Side Effects**

CNS: headache

CV: peripheral edema

GU: decreased sperm count.

Resp: PULMONARY VENO-OCCLUSIVE DISEASE.

Hemat: hemoglobin

**Interactions**

**Drug-Drug:** Blood levels may be **↑** by cyclosporine; do not exceed ambrisentan dose of 5 mg once daily.

**PO** (Adults): 5 mg once daily, max 7 mg once daily.

**NURSING IMPLICATIONS**

**Assessment**

- Assess for signs and symptoms of primary pulmonary hypertension (dyspnea, exercise intolerance) prior to and periodically during therapy.
- Assess for peripheral edema during therapy. If clinically significant peripheral edema occurs, with or without weight gain, evaluate for underlying cause, such as heart failure, and treat.
- Monitor for symptoms of acute pulmonary edema (dyspnea, cough with frothy sputum, anxiety, restlessness, palpitations) during initiation of therapy. Consider the possibility of pulmonary veno-occlusive disease; if confirmed discontinue ambrisentan.
- **Lab Test Considerations:** Obtain pregnancy test prior to, monthly during therapy, and 1 month following completion of therapy.
- Monitor hemoglobin prior to and at 1 mo and periodically during therapy. May cause ↓ hemoglobin; usually occurs during first few weeks and stabilizes. If clinically significant and other causes have been excluded, discontinue therapy.

**Potential Nursing Diagnoses**

- Impaired gas exchange (Indications)
- Deficient knowledge, related to medication regimen (Patient/Family Teaching)

**Implementation**

- Only available through a special restricted distribution program called Letairis REMS due to risks of birth defects. Female patients must be enrolled in Letairis REMS and re-enrolled after first year and then yearly. A limited number of pharmacies are certified to dispense ambrisentan. Provide patients with telephone number (1-866-664-5327) and website (www.letairisrems.com) for information on how to obtain medication.
- PO: May be administered without regard to food. Tablets should be swallowed whole; do not crush, break or chew.

**Patient/Family Teaching**

- Instruct patient to take ambrisentan as directed, at the same time each day. Review medication guide and patient education brochure with every patient. Explain drug therapy and why it may be necessary to continue taking ambrisentan for the duration of therapy.

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1 REMS

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Canadian drug name.

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Genetic Implication. CAPITALS indicate life-threatening, underlines indicate most frequent. Strikethrough indicates discontinued.

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This document contains medical and pharmaceutical information that should be used for educational purposes only. Always consult a healthcare professional for specific advice or treatment.
Advise patient to notify health care professional promptly if symptoms of fluid retention (swelling of hands, legs, ankles, feet or all over the body) or hepatotoxicity (anorexia, nausea, vomiting, fever, malaise, fatigue, right upper quadrant abdominal discomfort, jaundice, dark urine or itching) occur.

May cause fetal harm if taken during pregnancy. Inform patients a pregnancy test is required prior to beginning therapy and acceptable methods of contraception (two highly effective forms of contraception: intrauterine device [IUD], contraceptive implants, or oral contraceptives or a combination of methods [hormone method with a barrier method or two barrier methods]) must be used throughout therapy and for 1 mo following discontinuation if a partner's vasectomy is method of contraception chosen; a hormone or barrier method must be used along with this method. Educate women of childbearing years on the use of emergency contraception in the case of unprotected sex or contraceptive failure.

Inform patients that ambrisentan may cause low sperm count.

Advise patient of the importance of regular liver and hemoglobin testing.

Evaluation/Desired Outcomes

- Improved exercise capacity and decreased rate of clinical progression in patients with primary pulmonary hypertension.

Why was this drug prescribed for your patient?