Tiotropium (tie-o-trope-e-yeum)  
Spiriva

**Classification**  
Therapeutic: bronchodilators  
Pharmacologic: anticholinergics

**Pregnancy Category:** C

**Indications**  
Long-term maintenance treatment of bronchospasm due to COPD. Reducing exacerbations in patients with COPD.

**Action**  
Acts as anticholinergic by selectively and reversibly inhibiting M3 receptors in smooth muscle of airways. **Therapeutic Effects:** Decreased incidence and severity of bronchospasm.

**Pharmacokinetics**

**Absorption:** 19% absorbed following inhalation.

**Distribution:** Extensive tissue distribution; due to route of administration concentrations occur in lung.

**Metabolism and Excretion:** 74% excreted unchanged in urine; 25% of absorbed drug is metabolized.

**Half-life:** 5–6 days.

**TIME/ACTION PROFILE (bronchodilation)**  
**ROUTE**  
**ONSET**  
**PEAK**  
**DURATION**
  - inhaln: rapid 5 min 24 hr

**Contraindications/Precautions**

**Contraindicated in:** Hypersensitivity to tiotropium or ipratropium; Concurrent ipratropium.

**Use Cautiously in:**  
Hypersensitivity to atropine or milk proteins; Narrow-angle glaucoma, prostatic hyperplasia, bladder neck obstruction (may worsen condition); GFR <50 mL/min (monitor closely); OB, Lactation, Pedi: Pregnancy, lactation, or children (safety not established).

**Adverse Reactions/Side Effects**

**EENT:** glaucoma.  
**Resp:** paradoxical bronchospasm.  
**CV:** tachycardia.  
**GI:** dry mouth, constipation.  
**GU:** urinary difficulty, urinary retention.  
**Derm:** rash.  
**Misc:** hypersensitivity reactions including ANGIOEDEMA.

**Interactions**

**Drug-Drug:** Should not be used concurrently with ipratropium due to risk of additive anticholinergic effects.

**Route/Dosage**

**Inhaln (Adults):** 18 mcg once daily.

**NURSING IMPLICATIONS**

**Assessment**  
- **Inhaln:** Assess respiratory status (rate, breath sounds, degree of dyspnea, pulse) before administration and at peak of medication. Consult health care professional about alternative medication if severe bronchospasm is present; onset of action is too slow for patients in acute distress. If paradoxical bronchospasm (wheezing) occurs, withhold medication and consult health care professional immediately.

**Potential Nursing Diagnoses**  
- Ineffective airway clearance (indications)
- Risk for activity intolerance (indications)

**Implementation**

- Do not confuse Spiriva (tiotropium) with Inspra (eplerenone).

**Patient/Family Teaching**

- Instruct patient to take medication as directed. Capsules are for inhalation only and must not be swallowed. Take missed doses as soon as remembered unless almost time for next dose; space remaining doses evenly during day. Do not double doses.

- Advise patient that tiotropium is not to be used for acute bronchospasm attacks, but may be continued during an acute exacerbation.

- Instruct patient to read and understand Patient Information and Patient's Instructions for Use guide with patient. Capsules should be stored in sealed blister pack and removed immediately before use or effectiveness of capsules is reduced. Tear blister strip carefully to expose only one capsule at a time. Discard unused capsules immediately. Do not store or carry in blister pack.
capsules that are inadvertently exposed to air. Spiriva should be administered only via the Handihaler and the Handihaler should not be used with other medications. When dispensing of capsules, tiny amount of powder left in capsule is normal.

- Advise patient to notify health care professional immediately if signs and symptoms of angioedema (swelling of the lips, tongue, or throat, itching, rash) or signs of glaucoma (eye pain or discomfort, blurred vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal edema) occur.
- Caution patient to avoid spraying medication in eyes, may cause blurring of vision and papilledema.
- Advise patient that rinsing mouth after using inhaler, good oral hygiene, and use of gum or candy may minimize dry mouth; usually resolves with continued treatment.
- Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and consult health care professional before taking any new medications, including eye drops.
- Advise patient to inform health care professional if pregnancy is planned or suspected or if breast feeding.

Evaluation/Desired Outcomes

- Decreased dyspnea.
- Improved breath sounds.
- Fewer exacerbations in patients with COPD.

Why was this drug prescribed for your patient?