omalizumab (o-ma-liz-u-mab)
Xolair

Classification
Therapeutic: antiasthmatics
Pharmacologic: monoclonal antibodies

Pregnancy Category B

Indications
Moderate to severe asthma not controlled by inhaled corticosteroids.

Action
Inhibits binding of IgE to receptors on mast cells and eosinophils; preventing the release of mediators of the allergic response. Also decreases amount of IgE receptors on basophils.

Therapeutic Effects: Decreased incidence of exacerbations of asthma.

Pharmacokinetics
Absorption: 62% absorbed slowly from subcut sites.
Distribution: Enters breast milk.
Metabolism and Excretion: Degraded similarly to IgG via binding degradation, reticuloendothelial system and the liver.
Half-life: 26 days.

TIME/ACTION PROFILE (effects on IgE levels)
ROUTE ONSET PEAK DURATION
Subcut within 1 hr unknown up to 1 yr

Contraindications/Precautions
Contraindicated in: Hypersensitivity; Acute bronchospasm.
Use Cautiously in: Chronic use of inhaled corticosteroids; OB: Use only if clearly needed; enroll pregnant women with at least one exposure to omalizumab in the Xolair Pregnancy Exposure Registry (1-866-496-5247); Lactation: Safety not established; Pedi: Children 12 yr (safety not established).

Adverse Reactions/Side Effects
Local: injection site reactions.
Misc: allergic reactions including ANAPHYLAXIS, risk of malignancy.

Interactions
Drug-Drug: None noted.

Route/Dosage
Subcut (Adults and Children ≥12 yr): 150–375 mg every 2–4 wk (determined by pretreatment serum IgE level and body weight).

NURSING IMPLICATIONS
Assessment
● Assess lung sounds and respiratory function prior to and periodically during therapy.
● Assess allergy symptoms (rhinitis, conjunctivitis, hives) before and periodically throughout therapy.
● Assess for allergic reactions (wheezing, shortness of breath, cough, chest tightness, trouble breathing, low BP, dizziness, fainting, rapid or weak heartbeat, anxiety, feeling of "impending doom," flushing, itching, hives, feeling warm, swelling of the throat or tongue, throat tightness, hoarse voice, trouble swallowing) within 2 hr of first or subsequent injections. Observe patient following injection. Epinephrine, diphenhydramine, and corticosteroids should be available in case of anaphylaxis.
● Monitor for injection site reactions (hemorrhaging, redness, warmth, burning, itching, hives, pain, induration, mass, inflammation). Usually occur within 1 hr of injection, last 5–9 days, and decrease in frequency with subsequent dosing.
● Lab Test Considerations: Serum IgE levels will follow administration and may persist for up to 1 year following discontinuation. Serial total IgE levels obtained 1–3 yr following discontinuation may not reflect steady-state free IgE levels and should not be used to reassess the dosing regimen.

Potential Nursing Diagnoses
Ineffective airway clearance

Implementation
● Doses of inhaled corticosteroids may be gradually decreased with supervision of health care professional; do not discontinue abruptly.
● Subcut: To reconstitute draw 1.4 mL of sterile water for injection into a 3-cc syringe with a 1-inch 18-gauge needle. With vial upright on a flat surface, inject sterile water into vial. Keep vial upright and gently swirl for approximately 1 min to evenly wet powder. Do not shake. Lyophilized omalizumab takes 15–20 min to reconstitute. Inhale slowly and evenly for approximately 3 min to evenly wet powder. Do not inhale. Elliptical inhalers inhalers take 3–5 min to reconstitute. Do not inhale. Elliptical inhalers inhalers take 3–5 min to reconstitute.

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dissolve. Gently swirl vial for 5–10 seconds every 5 minutes to dissolve any remaining particles. Solution should be clear or slightly opalescent and may have small bubbles or foam around edge of vial. Do not use if particles are visible. If contents do not dissolve completely within 40 minutes, invert vial for 15 seconds to allow solution to drain toward stopper. Solution may be somewhat viscous. In order to obtain full 1.2 mL dose, all of solution must be withdrawn from vial using a new 3-cc syringe with a 18-gauge needle. Before expelling any air or excess solution from syringe, administer within 8 hr if refrigerated or within 4 hr if stored at room temperature. Discard unused solution.

1. Replace 18-gauge needle with a 25-gauge needle for subcut injection. Because solution is slightly viscous, injection may take 5–10 seconds to administer. Divide doses >150 mg into 2 injection sites.

**Patient/Family Teaching**

- Explain purpose of medication to patient. Inform patient that they may not see immediate results from omalizumab therapy. Instruct patient to read the Medication Guide before starting and with each injection in case of changes.
- Instruct patient not to discontinue or reduce other asthma medications, especially inhaled corticosteroids, without consulting health care professional.
- Advise patient to notify health care professional immediately if symptoms of an allergic reaction occur.

**Evaluation/Desired Outcomes**

- Decreased incidence of exacerbations of asthma.

Why was this drug prescribed for your patient?