Lumoxiti™ (moxetumomab pasudotox-tdfk) – New orphan drug approval

- On September 13, 2018, the FDA announced the approval of AstraZeneca's Lumoxiti (moxetumomab pasudotox-tdfk), for the treatment of adult patients with relapsed or refractory hairy cell leukemia (HCL) who received at least two prior systemic therapies, including treatment with a purine nucleoside analog (PNA).
    - Lumoxiti is not recommended in patients with severe renal impairment (creatinine clearance [CrCl] ≤ 29 mL/min).
- HCL is a rare, chronic, slow-growing leukemia in which the bone marrow makes too many B cells. HCL can result in serious and life-threatening conditions, including infections, bleeding, and anemia.
    - Approximately 1,000 people are diagnosed with HCL in the U.S. each year. While many patients initially respond to treatment, 30% to 40% will relapse 5 to 10 years after their first treatment.
- Lumoxiti is a CD22-directed cytotoxin and a first-in-class treatment for patients with relapsed or refractory HCL.
- The efficacy of Lumoxiti was studied in a single-arm, open-label clinical trial of 80 patients who had received prior treatment for HCL with at least two systemic therapies, including a PNA. The trial measured durable complete response (CR), defined as maintenance of hematologic remission for more than 180 days after achievement of CR.
    - The durable CR rate was 30% (24/80 patients; 95% CI: 20, 41).
    - In addition, the overall response rate (ORR) was 75% (95% CI: 64, 84). The median time to ORR and CR was 5.7 months (range: 1.8 to 12.9) and 5.9 months (range 1.8 to 13.2), respectively.
- Lumoxiti carries a boxed warning for capillary leak syndrome and hemolytic uremic syndrome.
- Additional warnings and precautions of Lumoxiti include renal toxicity; infusion related reactions; and electrolyte abnormalities.
- The most common (≥ 20%) adverse reactions with Lumoxiti use were infusion related reactions, edema, nausea, fatigue, headache, pyrexia, constipation, anemia, and diarrhea. The most common (≥ 50%) laboratory abnormalities with Lumoxiti use were increased creatinine, increased alanine aminotransferase (ALT), hypoalbuminemia, increased aspartate aminotransferase (AST), hypocalcemia, and hypophosphatemia.
- The recommended dose of Lumoxiti is 0.04 mg/kg administered as a 30-minute intravenous infusion on days 1, 3, and 5 of each 28-day cycle. Lumoxiti treatment should be continued for a maximum of 6 cycles, disease progression, or unacceptable toxicity.
    - All patients should maintain adequate hydration throughout treatment.
    - Low-dose aspirin should be considered on days 1 to 8 of each 28-day cycle.
    - Patients should receive premedication with an acetaminophen antipyretic, antihistamine, and H_2-receptor antagonist prior to all infusions.

Continued . . .

- AstraZeneca Pharmaceuticals' plans to launch Lumoxiti in October 2018. Lumoxiti will be available as a 1 mg lyophilized cake or powder in a single-dose vial for reconstitution.