Lymphir™ (denileukin diftitox-cxdl) – New orphan drug approval

- On August 8, 2024, Citius Pharmaceuticals announced the FDA approval of Lymphir (denileukin diftitox-cxdl), for the treatment of adult patients with relapsed or refractory stage I - III cutaneous T-cell lymphoma (CTCL) after at least one prior systemic therapy.

- CTCL is a type of cutaneous non-Hodgkin lymphoma that comes in a variety of forms and is the most common type of cutaneous lymphoma. Depending on the type of CTCL, the disease may progress slowly and can take anywhere from several years to upwards of ten to potentially reach tumor stage.

    — CTCL affects men twice as often as women and is typically first diagnosed in patients between the ages of 50 and 60 years of age.

- Lymphir is a targeted immune therapy. It is a recombinant fusion protein that combines the IL-2 receptor binding domain with diphtheria toxin fragments. The agent specifically binds to IL-2 receptors on the cell surface. After uptake into the cell, the diphtheria toxin fragment is cleaved and the free diphtheria toxin fragments inhibit protein synthesis, resulting in cell death.

- The efficacy of Lymphir was established in an open-label, single-arm study in patients with relapsed or refractory stage I to IV CTCL. The efficacy population includes 69 patients with relapsed or refractory stage I to III CTCL. Efficacy was established based on objective response rate (ORR).

    — The ORR was 36% (95% CI: 25, 49).
    — Among responders, the median follow-up for duration of response was 6.5 months (range: 3.5+, 23.5+ months).

- Lymphir carries a boxed warning for capillary leak syndrome.

- Additional warnings and precautions for Lymphir include visual impairment, infusion-related reactions, hepatotoxicity, and embryo-fetal toxicity.

- The most common adverse reactions (≥ 20%), including laboratory abnormalities, with Lymphir use were increased transaminases, decreased albumin, nausea, edema, decreased hemoglobin, fatigue, musculoskeletal pain, rash, chills, constipation, pyrexia, and capillary leak syndrome.

- The recommended dose of Lymphir is 9 mcg/kg/day actual body weight administered as an intravenous infusion over 60 minutes on days 1 through 5 of a 21-day treatment cycle. Lymphir should be administered until disease progression or unacceptable toxicity.

- Citius Pharmaceuticals plans to launch Lymphir within the next 5 months. Lymphir will be available as a 300 mcg lyophilized cake in a single-dose vial.