Aphexda™ (motixafortide) – New orphan drug approval

- On September 11, 2023, BioLineRx announced the FDA approval of Aphexda (motixafortide), in combination with filgrastim (G-CSF) to mobilize hematopoietic stem cells to the peripheral blood for collection and subsequent autologous transplantation in patients with multiple myeloma.

- In the U.S., as many as 8,000 autologous stem cell transplantations (ASCTs) are performed each year in patients with multiple myeloma. The current ASCT standard of care includes 4 to 6 cycles of induction therapy (an initial drug-combination regimen to position the patient for as deep a treatment response as possible). To begin the stem cell mobilization process, a patient will receive a daily dose of filgrastim for days. Daily doses of filgrastim will continue until the target collection goal is met with the addition of up to four daily doses of plerixafor as needed.

- Aphexda is an inhibitor of the C-X-C Motif Chemokine Receptor 4 (CXCR4). Treatment with Aphexda resulted in leukocytosis, and elevations in circulating hematopoietic stem and progenitor cells into the peripheral circulation in mice, rats, dogs, and humans.

- The efficacy of Aphexda was established in GENESIS, a randomized, double-blind, placebo-controlled study in 122 patients with multiple myeloma. Patients were randomized to receive Aphexda or placebo, in combination with filgrastim. The efficacy of Aphexda was based upon the proportion of patients who achieved a cell collection goal of ≥ 6×10^6 CD34+ cells/kg in up to 2 aphereses after administration of filgrastim and a single administration of Aphexda or placebo.

    — Overall, 67.5% of patients in the Aphexda treatment arm vs. 9.5% in the placebo arm achieved the cell collection goal in up to 2 aphereses after a single administration of Aphexda or placebo, resulting in an adjusted difference between treatment arms of 56.8% ($p < 0.0001$).

- Warnings and precautions for Aphexda include anaphylactic shock and hypersensitivity reactions; injection site reactions; tumor cell mobilization in patients with leukemia; leukocytosis; potential for tumor cell mobilization; and embryo-fetal toxicity.

- The most common adverse reactions (> 20%) with Aphexda use were injection site reactions, injection site pain, injection site erythema, injection site pruritus, pruritus, flushing, and back pain

- The recommended dosage of Aphexda is 1.25 mg/kg administered via slow (approximately 2 minutes) subcutaneous (SC) injection 10 to 14 hours prior to the initiation of the first apheresis. Dosing is based on actual body weight. A second dose of Aphexda can be administered 10 to 14 hours before a third apheresis, if necessary.

    — Administer filgrastim 10 mcg/kg SC once daily for 4 days prior to the first dose of Aphexda and on each day prior to each apheresis.

- BioLineRx plans to launch Aphexda later this month. Aphexda will be available as a 62 mg lyophilized powder in a single-dose vial for reconstitution.