Besremi® (ropeginterferon alfa-2b-njft) – New orphan drug approval

- On November 12, 2021, the FDA announced the approval of PharmaEssentia's Besremi (ropeginterferon alfa-2b-njft), for the treatment of adults with polycythemia vera.

- Polycythemia vera is a blood disease that causes the overproduction of red blood cells. The excess cells thicken the blood, slowing blood flow and increasing the chance of blood clots.

    - Polycythemia vera affects approximately 6,200 Americans each year.

- Besremi is the first FDA-approved interferon therapy specifically approved for polycythemia vera.

- The efficacy of Besremi was established in PEGINVERA, a single-arm study in 51 adults with polycythemia vera. In the study, patients received Besremi for an average of about 5 years. The efficacy of Besremi was evaluated by assessing complete hematological response (CHR) defined as hematocrit < 45% and no phlebotomy in the preceding 2 months, platelets ≤ 400 x 10^9/L and leukocytes ≤ 10 x 10^9/L, normal spleen size, and absence of thromboembolic events.

    - The CHR in the treated population during the treatment period was 61% (95% CI: 46, 74). The median duration of response was 14.3 months (95% CI: 5.5, 30.1).
    - Among the patients in the treated population who achieved a CHR, the median time to response was 7.8 months of treatment with Besremi. It required 1.2 years of treatment with Besremi for 50% of patients (hydroxyurea-naïve) to achieve a CHR and 1.4 years for 50% of patients with prior hydroxyurea use to achieve a CHR.

- Besremi carries a boxed warning for risk of serious disorders, including fatal or life-threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders.

- Besremi is contraindicated in patients with:

    - Existence of, or history of severe psychiatric disorders, particularly severe depression, suicidal ideation, or suicide attempt
    - Hypersensitivity to interferons including interferon alfa-2b or any of the inactive ingredients of Besremi
    - Moderate (Child-Pugh B) or severe (Child-Pugh C) hepatic impairment
    - History or presence of active serious or untreated autoimmune disease and
    - Immunosuppressed transplant recipients.

- Additional warnings and precautions for Besremi include depression and suicide; endocrine toxicity; cardiovascular toxicity; decreased peripheral blood counts; hypersensitivity reactions; pancreatitis; colitis; pulmonary toxicity; ophthalmologic toxicity; hyperlipidemia; hepatotoxicity; renal toxicity; dental and periodontal toxicity; dermatologic toxicity; driving and operating machinery; and embryo-fetal toxicity.

- The most common adverse reactions (> 40%) with Besremi use were influenza-like illness, arthralgia, fatigue, pruritus, nasopharyngitis, and musculoskeletal pain.

- The recommended starting dosage of Besremi for patients not on hydroxyurea is 100 mcg by subcutaneous (SC) injection every two weeks. The dose can be increased by 50 mcg every two weeks (up to a maximum of 500 mcg), until the hematological parameters are stabilized.

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- When transitioning to Besremi from hydroxyurea, Besremi should be started at 50 mcg by SC injection every two weeks in combination with hydroxyurea. Hydroxyurea should be gradually tapered off by reducing the total biweekly dose by 20 to 40% every two weeks during weeks 3 to 12. The Besremi dose should be increased by 50 mcg every two weeks (up to a maximum of 500 mcg), until the hematological parameters are stabilized. Hydroxyurea should be discontinued by week 13.

- The two-week dosing interval of Besremi at which hematological stability is achieved should be maintained for at least 1 year. After achievement of hematological stability for at least 1 year on a stable dose of Besremi, the dosing interval may be expanded to every 4 weeks.

- PharmaEssentia plans to launch Besremi in the coming weeks. Besremi will be available as a 500 mcg/mL solution in a single-dose prefilled syringe.