TPOXX® (tecovirimat) – New drug approval

- On July 13, 2018, the FDA announdrugced the approval of SIGA Technologies' TPOXX (tecovirimat), for the treatment of human smallpox disease caused by variola virus in adults and pediatric patients weighing at least 13 kg.
    - The effectiveness of TPOXX for treatment of smallpox disease has not been determined in humans because adequate and well-controlled field trials have not been feasible, and inducing smallpox disease in humans to study the drug's efficacy is not ethical.
    - TPOXX efficacy may be reduced in immunocompromised patients based on studies demonstrating reduced efficacy in immunocompromised animal models.

- Prior to its eradication in 1980, variola virus, the virus that causes smallpox, was mainly spread by direct contact between people. Symptoms typically began 10 to 14 days after infection and included fever, exhaustion, headache and backache. A rash initially consisting of small, pink bumps progressed to pus-filled sores before finally crusting over and scarring. Complications of smallpox could include encephalitis, corneal ulcerations and blindness.
    - Samples of smallpox virus have been kept for research purposes. This has led to concerns that smallpox could someday be used as a biological warfare agent.

- TPOXX is a small-molecule antiviral therapy, and the first drug approved for the treatment of smallpox.

- The efficacy of TPOXX for treatment of smallpox disease was established based on results of adequate and well-controlled animal efficacy studies of non-human primates and rabbits infected with non-variola orthopoxviruses. The primary efficacy endpoint for these studies was survival.
    - Treatment with TPOXX for 14 days resulted in statistically significant improvement in survival relative to placebo.
    - Survival rates observed in the animal studies may not be predictive of survival rates in clinical practice.

- Warnings and precautions of TPOXX include hypoglycemia when co-administered with repaglinide.

- The most common adverse reactions (≥ 2%) with TPOXX use in healthy human volunteers were headache, nausea, abdominal pain, and vomiting.

- The recommended dosage of TPOXX in adults and pediatric patients weighing at least 40 kg is 600 mg (three 200 mg capsules) orally twice daily for 14 days.
    - For pediatric patients weighing 25 kg to < 40 kg, give 400 mg orally twice daily for 14 days.
    - For pediatric patients weighing 13 kg to < 25 kg, give 200 mg orally twice daily for 14 days.
    - TPOXX should be taken within 30 minutes after a full meal of moderate or high fat.
    - TPOXX capsules can be administered by carefully opening the capsule and mixing the entire contents in 30 mL of liquid (eg, milk, chocolate milk) or soft food (eg, apple sauce, yogurt).

Continued . . .

- SIGA Technologies will initially be launching TPOXX only through the U.S. government's Strategic National Stockpile. TPOXX will be available as 200 mg capsules.