**Method**

Background: IL-12 is a master regulator of the immune system, results in pro-inflammatory responses in preclinical models, but when given relatively low-dose IL-12 was surprisingly producing a negative impact in the clinical trial (Rimas Lukas, Joseph Landolfi, Ganesh Rao, Joseph Barrett, Jill Y. Buch, Nathan Demars, Amy Smith, Joseph Miao, John Zhou, Arnold Gelb, Lawrence JN Cooper; Ziopharm Oncology, Inc, Boston, MA).

**Results:**

- **Ad hoc analysis of steroid use during active treatment in the Substudy:** In the Expansion Substudy the mOS has not yet been reached.
- **Cytokine Release Syndrome:** IL-12 peaked at Day 3 with downstream production of IFN-γ and IL-10.
- **Tumor Infiltrates:** Related toxicities in both the Main Study and Substudy were predictable, dose related, and promptly reversible upon discontinuation of veledimex with no drug-related deaths.
- **In the Substudy the mOS has not yet been reached.** A higher percentage of subjects in the Substudy (75% vs 40% Main Study) received low dose concurrent steroids (0-4 mg dexamethasone total, Days 0-21). The initial impact of doses on will be fully reported. In the main study, Ad+V 20 mg respectively increased (median) serum IL-12 by 3.79 pg/mL from baseline (Days 0-21) to Day 14 before decreasing by Day 28 (Main Study vs Substudy). The initial impact of doses on will be fully reported. In the main study, Ad+V 20 mg respectively increased (median) serum IL-12 by 3.79 pg/mL from baseline (Days 0-21) to Day 14 before decreasing by Day 28 (Main Study vs Substudy).

**Conclusion:** The Expansion Substudy is similar to prior interim results in the Main Study for rGBM.

**Immune Cell Infiltrates in Whole Blood from Recurrent Glioblastoma Patients (2019) by Ziopharm Oncology, Inc, Boston, MA; Rimas Lukas, Joseph Landolfi, Ganesh Rao, Joseph Barrett, Jill Y. Buch, Nathan Demars, Amy Smith, Joseph Miao, John Zhou, Arnold Gelb, Lawrence JN Cooper; Ziopharm Oncology, Inc, Boston, MA; NYU Langone Health Center, New York, NY; JFK Medical Center, Edison, NJ; TMD Anderson Cancer Center, Houston, TX.

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