

C25

Phase I study of Seneca Valley Virus (SVV-001), A Replication Competent Oncolytic Virus, in Patients with Carcinoid Cancers

CM Rudin¹, N Senzer², J Stephenson³, K Burroughs⁴, N Senzer⁴, T Williams⁴

¹John Hopkins University, Baltimore, MD, USA

²Mary Crowley Research Center, Dallas, TX, USA

³On Behalf of US Oncology, Houston, TX, USA

⁴Neotropix, Inc., Malvern, PA, USA

Background: SVV-001 is a naturally-occurring replication competent picornavirus, rarely hosted by humans, with potent and selective tropism for NE tumors, including small cell cancers and carcinoid. SVV-001 causes rapid cytolysis in vitro and durable responses following single IV dosing in multiple xenograft models.

Methods: Single dose intravenous SVV-001 was investigated across 5 log-increment dose cohorts from 10^7 vp/kg to 10^{11} vp/kg, in patients with carcinoid type cancers. Study endpoints included toxicity assessment, response assessment, evaluation of viral titers and clearance in blood, sputum, nasal swabs, urine, and stool, and neutralizing antibody development.

Results: 12 carcinoid patients in cohorts 1 to 4 had a 70% SD rate. Cohort 5, a 12 patient expansion cohort at 10^{11} vp/kg showed promising antitumor activity including improvement in carcinoid syndrome symptoms, decline in 5HIAA and other serum markers, minor responses by CT scan, and an objective PET response (>50% decrease in SUV). Median PFS was 6.2 months (95% CI 3.6 to 21.1), median OS was 21.1 months (95% CI 8.9 to not reached).

There were no DLTs in any cohort. Side effects were in general mild and self limiting. Evidence of intratumoral viral replication was demonstrated with detection of delayed viral titers estimated at $>1,000\times$ the administered dose. Viral clearance was documented in all patients and correlated temporally with development of antiviral antibodies.

Conclusions: A single IV dose of 10^{11} vp/kg of SVV-001 is safe with predictable viral kinetics and shows promising activity against NE tumors. Phase II testing of this novel anticancer agent is warranted.