Early Safety and Efficacy of a Phase 1/2 Open-Label, Multi-Center Trial of SNS-301 Added to Pembrolizumab in Patients with ASPH+ Locally Advanced Unresectable or Metastatic/Recent Squamous Cell Carcinoma of the Head and Neck

Alain Algazi1, William Smith2, Timothy Panella3, Dong M. Shin4, Marie-Louise Fjaellskog5, John Celebi6, Alice Drumheller7, Jean S. Campbell8, Robert H. Pierce9, Steve Fuller10, Michael Guarino6
1Department of Medicine, UCSF, San Francisco, CA; 2New Orleans Clinical Research Center, New Orleans, LA; 3Department of Medical Oncology, University of Tennessee, Knoxville, TN; 4Winship Cancer Institute, Emory University, Atlanta GA; 5Sensia Biotherapeutics, Gaithersburg, MD; 6Department of Medical Oncology, Christiana Hospital, Newark, DE

BACKGROUND

• Efficacy of anti-PD-1/PD-L1 therapy (anti-PD1/PD-L1) is attributed to the presence of infiltrating antigen-specific CD8+ T-cells which may explain the low response rates (13-18% post platinum) in squamous cell carcinoma of the head and neck (SCCHN) which often present with immune desensitized or excluded tumors.

• Combining anti-PD1/PD-L1 with agents that generate or expand anti-tumor T-cells such as vaccines are imperative.

• SNS-301 is a first-in-class and self-adjurated bacteriophage-based immune-activating vaccine targeting human aspartate β-hydroxylase (ASPH), a tumor associated antigen commonly overexpressed in cancer.

METHODS

Study Design

Study Objectives

The study aims are to evaluate safety, tolerability, and anti-tumor activity, as well as, immune responses and tumor/Immune biomarkers.

Tumor and Blood Analyses

• Tumor tissue is provided pre, on-treatment and at PD (optional) to characterize the tumor microenvironment using Nanostring™ & multiplex immunohistochemistry.

• Blood samples are collected to evaluate B and T cell responses using ELISA, ELISPOT and flow cytometry.

RESULTS – SNS-301 + PEMBROLIZUMAB

Safe and Well-Tolerated

Overall (N=14)

Tumor Regressions Observed

PR (−43%) Achieved in PD-L1NEG Tumor with SD on Anti-PD1/PDL1 *

• 69 yo woman diagnosed with HPVNEG and PD-L1NEG T2N0M0 laryngeal cancer May 2019.

• Cancer therapy: IMRT (2-54 Gy) and carboplatin/paclitaxel (PR).

• At study entry treated with pembrolizumab for > 3 months (SD).

• Disease control observed in 6 of 9 patients (67%).

• Tumor regressions observed regardless of PD-L1 or HPV status.

• PR observed in patient with PD-L1NEG tumor

PR (−3%) Achieved in PD-L1NEG Tumor with SD on Anti-PD1/PDL1 *

• 77 yo male diagnosed with HPVNEG and PD-L1NEG T1N0M0 squamous cell carcinoma of the head-neck June 2017.

• Cancer therapy: Nivolumab (240mg) every 3 weeks.

• At study entry treated with pembrolizumab for > 3 months (SD).

• Disease control observed in 2 of 5 patients (40%).

• Non-HPV associated disease

• HPV associated disease

GROUP

Enrolled Patients

No.12

No.15

PD-L1

NEG

PD-L1

NEG

SNS-301

pembrolizumab

SNS-301

pembrolizumab

Phase 1b

40

60

80

100

Percent Change from Baseline (%)

PD-L1

NEG

PD-L1

NEG

SNS-301

pembrolizumab

SNS-301

pembrolizumab

Study Patients

SD at entry

PR at entry

Baseline

Week 6

Week 12

Enhanced Serological Response to SNS-301 in Patient with PR *

Patient with PR experienced increased SNS-301 response (normalized as change from parental phase response) at week 3 compared to patients with SD or PD.

CONCLUSIONS

• All screened patients stained highly positive for ASPH.

• The combination of SNS-301 and pembrolizumab is safe and well tolerated.

• Encouraging clinical activity was observed with PR in a pt with PD-L1NEG tumor, SD in a pt with uPD at study entry and long-lasting (> 6 month) SD in 2 pts.

• PR with PD shows an elevated response to SNS-301 phase in serum.

• Translational data suggest cellular and humoral responses to SNS-301, including conversion from poorly to highly inflamed tumor in pt with PR.

• Given the observed clinical activity enrollment will continue to 30 pts.

Contact Information:

Marie-Louise Fjaellskog (Medical Monitor): mfjaellskog@sensia.com
Cell: +1 617 959 7206

Patient Characteristics

Age (mean/median) 62.5 (57-68)
Male/Female 89/1
ECOG 0/1 22.2 / 71.8
HPV

pos

neg

unknown

PD-L1

pos

neg

unknown

Prior lines systemic tx

2

3

Ongoing anti-PD-1/PD-L1 tx median (range) 37 weeks (20-101)

Patient with PR experienced increased SNS-301 response (normalized as change from parental phase response) at week 3 compared to patients with SD or PD.