637 PHASE IIA COMBINING NEO-201 WITH PEMBROLIZUMAB IN ADULTS WITH CHEMO-RESISTANT SOLID TUMORS

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Background NEO-201 is a humanized IgG1 monoclonal antibody which binds to Core 1 and/or extended Core 1 O-glycans expressed by human solid and blood tumors as well as by human neutrophils. NEO-201 reacts against colon, pancreatic, non-small cell lung, head and neck, cervical, uterine and breast cancer, but it does not bind to most normal tissues. NEO-201 kills tumor cells via antibody dependent cell mediated cytotoxicity and complement dependent cytotoxicity. NEO-201 also binds to circulating regulatory T cells (Tregs). The low response rates and resistance to PD-1/PD-L1 blockade in solid cancers may be due to the activity of Tregs in the tumor microenvironment. Based on these data we hypothesize that combining NEO-201 with pembrolizumab for the treatment of solid tumors may overcome resistance to checkpoint inhibitors by depleting Tregs.

Methods The Clinical Trial NCT03476681 is open and recruiting patients at National Institutes of Health (USA).

Eligibility Criteria A. Subjects must be over 18 years old and have histologically or cytologically confirmed recurrent, locally advanced unresectable or metastatic Non-Small Cell Lung Cancer, Cervical Cancer, Head and Neck Squamous Cell Carcinoma, Uterine Carcinoma who have progressed during or after front-line standard of care treatment, including chemotherapy and/or targeted therapy.

B. At least 10% of tumor cells expressing NEO-201 target antigen on immunohistochemistry.

C. Patient is not a candidate for potentially curative surgery or radiation

Given that NEO-201 has not been previously administered with pembrolizumab, a safety lead-in will be conducted in three to six subjects who will receive NEO-201 at 1.5 mg/kg IV every 2 weeks, and pembrolizumab 400 mg IV every 6 weeks. The safety lead-in course will be 42 days in length and consist of 1 dose of pembrolizumab and 3 doses of NEO-201. Once safety is established, 21–31 subjects would be enrolled in the four disease groups. Primary and secondary objectives include determining Objective Response Rate and Progression Free Survival, characterizing the pharmacokinetics of NEO-201 in combination with pembrolizumab, exploring the effects of the combination on functions and phenotypes of immune subsets, modulation of serum levels of cytokines and soluble factors.

Trial Registration NCT03476681

Ethics Approval This study was approved by NCI Institutional Review Board (protocol code NCT03476681, first approved 03/26/2018; latest update 01/08/2020

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