Background: CTLA-4 therapy was developed to increase the effects of CTLA-4 blockade and enhance intratumoral regulatory T-cell depletion via its increased affinity for Fcγ receptors (FcγR, CD16) on natural killer T cells and macrophages, resulting in enhancement of antibody-dependent cellular cytotoxicity. Preclinical data supported the mechanism of action of BMS-986218 and demonstrated greater antitumor activity in an MC38 tumor model vs IPI.1 Here, we present initial results from the first-in-human phase 1/2a trial of BMS-986218 ± NIVO in previously treated patients with advanced cancer (NCT03110107).

Methods: Patients with ≥1 prior therapy received BMS-986218 2–70 mg intravenously Q4W. Safety, tolerability, pharmacokinetics, and pharmacodynamics were evaluated.

Results: As of December 12, 2019, 65 patients (median age, 61 years [range, 24–85 years]) received BMS-986218 monotherapy. TRAEs occurred in 52% of patients; most were grade 1–2. The most common (≥10%) TRAEs were pyrexia (12%); nausea, vomiting, diarrhea, crush syndrome, and dyspnea (11%); and pain (3%). Eight patients (12%) had grade 3 TRAEs; most resolved with protocol-defined management. No grade 4 TRAEs were reported; 1 patient (1%) had grade 4 TRAEs; and 1 patient (1%) discontinued treatment due to an adverse event (AE). Toxicities occurred. The maximum tolerated dose has not been reached. BMS-986218 exposure increased dose proportionally, and the half-life was 2 weeks. Increased levels of serum che- moligands 9 and 10 and interferon-γ indicate that pharma- codynamic changes occurred at the lowest dose tested (2 mg [0.03 mg/kg]), similar to previous findings with IPI 3 mg/kg, and at higher doses (40–70 mg [0.06–1 mg/kg]), consistent with findings with IPI 10 mg/kg. In a subset of patients with paired biopsies, BMS-986218 was associated with an increased gene signature linked to CD8+ T-cell infiltration and inflammation. In a highly heterogeneous population, as part of dose escalation, BMS-986218 monotherapy treatment was associated with clinical activity in some patients. Updated data based on a September 2020 data cutoff will be presented.

Conclusions: BMS-986218 monotherapy demonstrated an acceptable safety profile and signs of clinical benefit in this heterogeneous patient population with select advanced cancers. Preliminary pharmacodynamic activity was consistent with enhanced effects of CTLA-4 blockade. Data from continuing dose escalation of BMS-986218 ± NIVO along with preclinical results provide support for ongoing monotherapy expansions and for BMS-986218 + NIVO expansions in patients with advanced cancer.

Acknowledgements: The authors acknowledge Dr Charles Drake while at Columbia University Medical Center, New York, NY, USA, for his contributions to the study.

Trial Registration: NCT03110107

Ethics Approval: This study was approved by the WCG Independent Review Board, approval number 20170464

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Abstracts

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FIRST-IN-HUMAN PHASE 1/2A STUDY OF THE NOVEL NONFUCOSYLATED ANTI–CTLA-4 MONOClonAL ANTIBODY BMS-986218 ± NIVOIn ABAM IN SOLID Tumors: Initial PHASE 1 Results

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