Background VTP-850 is a novel antigen-specific immunotherapeutic consisting of 2 nonreplicating viral-vectorized components: ChAdOx1-PCAQ, based on an adenoviral vector, and MVA-PCAQ, based on a modified vaccinia virus Ankara (MVA) vector. Both components encode the same 4 prostate cancer antigens: prostate-specific antigen (PSA), prostatic acid phosphatase (PAP), six transmembrane epithelial antigen of prostate 1 (STEAP1), and 5T4, an oncofetal antigen. Preclinical studies in inbred, outbred, and HLA-A2 transgenic mice show that VTP-850 is highly immunogenic. Immune responses were measured in splenocytes using IFN-γ ELISpot assay, multiparameter flow cytometry, and targeted in vivo killing assays. VTP-850 elicited T cell responses to each of the 4 encoded antigens. Intravenous administration of MVA-PCAQ resulted in a 6-fold increase in the magnitude of antigen-specific T cells induced and increased in vivo killing relative to the intramuscular administration route.  

Methods This is a first-in-human multicenter Phase 1/2 trial to evaluate safety, PSA response rate and duration, and induced T cell response of VTP-850 in men with biochemical recurrence of prostate cancer after definitive local therapy. Phase 1 (15–18 participants) will follow a 3+3 design to determine the recommended phase 2 regimen (RP2R); dose level of both ChAdOx1-PCAQ and MVA-PCAQ, and route of administration of MVA-PCAQ (IM or IV). Phase 2 will consist of 2 stages. In Stage 1, 19 additional participants will be enrolled at the RP2R. If 4 or more of the 25 participants dosed at the RP2R have a PSA response (≥50% reduction in serum PSA), Stage 2 will enroll 100 additional participants. Participants will be followed for 6 months or until start of new therapy (e.g., ADT) or until development of metastatic disease. Participants who have a PSA response during the 6 months follow-up will be followed for up to an additional 18 months. Patients who have undergone primary therapy for prostate cancer and have biochemical recurrence are eligible. Patients must have nonmetastatic (M0) disease by conventional imaging (e.g., CT, bone scan); serum PSA of >0.3 ng/mL (prior radical prostatectomy) or 2 ng/mL above nadir (prior external beam radiation or brachytherapy); PSA doubling time <12 months; and testosterone >75 ng/dL. They cannot have received ADT within 6 months prior to Day 1 and cannot have received prior chemotherapy, immunotherapy or experimental agent for prostate cancer. The trial is open in multiple centers in the USA.

Trial Registration Clinicaltrials.gov Identifier: NCT05617040

REFERENCE


Ethics Approval The trial has been approved by Advarra Central IRB (protocol ID Pro00067777) and applicable local IRBs for open sites (at the time of writing, IRB Advarra, approval numbers SSU00203836, SSU00213065, SSU00215354, SSU00211225, SSU00220023; IRB WCG, approval number 20232112; IRB-Columbia Research, approval number AAAU4814; IRB-Fox Chase Cancer Center, approval number 23–1001).

http://dx.doi.org/10.1136/jitc-2023-SITC2023.0665