TPS1138 Poster Session

Update on phase III pivotal trial of Bria-IMT + CPI vs physician's choice in advanced metastatic breast cancer (BRIA-ABC).

Saranya Chumsri, Joyce O'Shaughnessy, Azka Ali, Christopher Norman Vaughn, Kristine Rinn, Adam Brufsky, Lawrence M. Negret, Regina Michelle Stein, Blaise Bayer, Marcela Salgado, Giuseppe Del Priore, Sara A. Hurvitz; Mayo Clinic Florida, Jacksonville, FL; Texas Oncology-Baylor Charles A. Sammons Cancer Center, Dallas, TX; Cleveland Clinic Foundation - Taussig Cancer Institute, Cleveland, OH; Hematology and Oncology Associates of Fredericksburg, Fredericksburg, VA; Cancer Care Northwest, Spokane, WA; University of Pittsburgh School of Medicine, Pittsburgh, PA; University of Miami, Miller School of Medicine, Miami, FL; Northwestern, Chicago, IL; BriaCell Therapeutics Corp., Philadelphia, PA; Morehouse School of Medicine, Atlanta, GA; Fred Hutch at University of Washington Medical Center, Seattle, WA

Background: The SV-BR-1-GM breast cancer cell line activates anti-tumor immunity by expressing tumor associated antigens and secreting GM-CSF which enhances dendritic cell activation and promotes adaptive (T-cell mediated) and innate (dendritic and NK cell) immune responses. The cells are also engineered to optimize immune recognition through pt specific HLA antigen matching. SV-BR-1-GM acts through direct antigen presentation and CD4+ T-cell activation and, when combined w/ checkpoint inhibitors (CPIs), has demonstrated clinical benefit in 54 heavily pretreated metastatic breast cancer (MBC) pts. In pts w/ disease progression following CPI therapy, similar or improved progression free survival (PFS) compared to their prior treatment regimen. Disease control following antibody drug conjugates was observed in 40%of pts. Clinical benefit was seen in 5 out of 8 pts w/ untreated intracranial metastases. CD8+ Immuno-PET imaging suggests systemic activation, w/ increased CD8+ tumor infiltrating lymphocytes at both primary and metastatic tumor sites, as well as lymphoid organs. Optimized sequencing of CPI w/ SV-BR-1-GM and its latest phase 3 formulation have shown enhanced clinical outcomes, including improved overall survival (OS) (median 13.4 mos), PFS (3.6 mos), and clinical benefit rate (CBR; 61%).These findings have informed refinements to the ongoing pivotal, registration enabling Phase 3 trial, designed to optimize pt selection and treatment sequencing strategies. **Methods:** This ongoing multicenter, randomized, open label Phase 3 trial evaluates Bria-IMT + CPI vs. Treatment of Physician's Choice (TPC) in MBC pts lacking approved curative therapies. Pts are randomized 1:1:1 to Bria-IMT + CPI, TPC, or Bria-IMT monotherapy (discontinued after 150 enrollments to prioritize combination arms). The Bria-IMT regimen consists of: Day -2: Cyclophosphamide 300 mg/m^2, Day 0: 20M irradiated SV-BR-1-GM cells, Day 2/3: 0.1 mcg pegylated α interferon at each inoculation site. CPI infusion is administered Day -3 to 3. Cycles q3w. TPC regimens follow site specific SOC. Imaging q6w (first 2 cycles), then q8w. Eligibility includes all MBC subtypes, including CNS mets, and permits prior CPI therapy ($>$21 days pre-treatment). There will be 100 sites across the U.S., Canada, and ex-North America w/ an enrollment target of 404. The trial is currently active at 59 sites with 217 sub investigators. To date, 67 pts screened: 46 randomized (median age 56 yrs [34–83], median 6 [2–13] prior lines of therapy. The primary endpoint is OS, with an interim analysis at 144 events targeting a hazard ratio of 0.6. Secondary endpoints: PFS, overall response rate, CBR, CNS event free survival, and TWiST. Safety analyses ongoing; pt reported outcomes assess subjective treatment impact. Clinical trial information: NCT03328026. Research Sponsor: BriaCell Therapeutics Corp.