TPS7096 **Poster Session**

A phase 1a/1b trial in relapsed/refractory T-cell non-Hodgkin lymphoma to determine the safety profile, pharmacology, and maximum tolerated dose of ST-001, an intravenous fenretinide phospholipid suspension (12.5 mg/mL).

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Background: N-(4-hydroxyphenyl)retinamide (4-HPR; fenretinide) is a synthetic amide derivative of all-trans retinoic acid. Clinical data from trials of earlier fenretinide formulations indicate that higher plasma levels of fenretinide correlate with improved patient responses. Although fenretinide intravenous emulsion (4-HPR-ILE) increased plasma concentration and yielded complete and partial responses in peripheral T-cell lymphomas, its dose-limiting hypertriglyceridemia mainly related to triglyceride from the soy oil vehicle posed a significant impediment to clinical development (Maurer BJ et al. *Clin Cancer Res.* 2017). **Methods:** A new formulation of intravenous fenretinide, designated ST-001 nanoFenretinide, is an innovative dosage form composed of phospholipid nanoparticles in a free-flowing solution (Patent number US 8709379 B2). ST-001 effectively eliminates the risk of vehicle-related hypertriglyceridemia, because it is free of triglycerides. It is also free of adjuvants, non-ionic surfactants, polyoxylated compounds, alkoxylated oils, and animal-derived substances known to cause allergy or hypersensitivity. ST-001 potentially provides a safer form of intravenous fenretinide for achieving therapeutic plasma concentrations. In this Phase 1a/1b clinical trial (NCT04234048), ST-001 is administered via intravenous infusion (IV) to patients with relapsed/refractory T-cell non-Hodgkin's lymphoma (NHL) following at least one prior treatment, including cutaneous (CTCL) and non-cutaneous T-cell lymphoma subtypes (angioimmunoblastic T-cell lymphoma, peripheral T-cell lymphoma not otherwise specified, and follicular T-cell lymphoma). The U.S.-based trial will enroll up to 54 patients across three stages: up to 9 patients (single patient cohorts) for Phase 1a accelerated dose escalation, up to 15 patients (3 patient cohorts) for Phase 1a standard dose escalation and determination of maximum tolerated dose (MTD), and 30 patients for Phase 1b to determine the optimal dose. The primary objectives are to determine the MTD, toxicity profile, adverse events and dose-limiting toxicities (DLTs) based on NCI Common Toxicity Criteria, and anti-tumor activity, when administered over 4 hours daily for 5 consecutive days every 3 weeks, for a maximum of 8 cycles. Secondary objectives include pharmacokinetic profiling and investigating potential mechanisms of action using pharmacodynamic biomarkers. The accelerated stage has completed enrollment, and the standard stage is open for enrollment as of January 2025. This study investigates a novel fenretinide formulation aiming to address treatment challenges in T-cell NHL, with a focus on safety, tolerability, clinical activity, and pharmacology. Clinical trial information: NCT04234048. Research Sponsor: None.