**INTRODUCTION & PURPOSE**

Ubiliximab (RTG-1001), a novel chimeric monoclonal antibody (mAb) that targets a unique epitope on the CD19 antigen, 11.5 and glycoengineered to enhance activity for all immunological (ADCC) activity, affinity and avidity.

**OBJECTIVES**

- To date, more than 100 patients with active RRMS not responsive to standard treatments for MS have been treated with ubiliximab and two multiple Phase II trials are ongoing in patients (gender, race, mean age, disability level) with relapsing-remitting MS who require additional therapy. These studies are ongoing with excellent safety and tolerability.
- In the radiology study, two Phase III trials on MS are ongoing.
- The objective for the_ubiliximab Phase III program is to determine whether the enhanced ADCC potential of ubiliximab can translate into improved clinical benefits for MS patients in the form of fewer relapses and faster recovery times than current anti-CD20 infusion therapies.

**MRI ACQUISITIONS**

- For Cohort 1-20 (N=46/48) (n=44), patients were randomized, placebo controlled, multi-center study to limit the safety and efficacy of placebo; at least those analyses ongoing Phase II, the occlusion, two Phase III trials on MS are ongoing.
- For the study, subjects needed to have a diagnosis of relapsing MS by 2010 McDonald criteria, and have either one confirmed MS relapse in the past year, 2 relapses in the past two years, or at least one active (≥10 mm in diameter) or new MRI lesions at baseline. Other inclusion/exclusion criteria were detailed in the study protocol.
- Primary endpoint is the number of Safety data from the Data Safety Monitoring Board (DSMB) reviewed laboratory and clinical data before any stopping criteria were met.
- Additional clinical and radiological measures of efficacy are being evaluated. Herein, we report the following efficacy outcomes from a Phase IIb/IIIa multicenter study of ubiliximab.

**RESULTS**

- There was a decrease of 7.6% (p<0.004) in T2 lesion volume at Week 24 compared to baseline.
- The mean number of new/enlarging T2 lesions was 0.2 ± 0.5.

**ANNUALIZED RELAPSE RATE & NEDA**

- At Week 24, 43 of 48 subjects had received all evaluations to be assessed for NEDA.
- 98% of subjects were relapse free.
- 95% of subjects did not experience 24 week confirmed disability progression.
- 100% of subjects did not have any GD-enhancing lesions.
- 84% of subjects did not have new/enlarging T2 lesions.

**CONCLUSIONS**

- An Annualized Relapse Rate (ARR) of 0.05 was observed at Week 24.
- No T1 GD-enhancing lesions were detected in any subjects at Week 24 (p=0.003).
- 7.6% Reduction in T2 lesion volume at Week 24 from baseline (p<0.004), suggestive of a decrease in burden of disease.
- 98% of subjects were relapse free at Week 24.
- 83% of subjects showing improved or stable EDSS and Mean EDSS improvement from baseline of 0.29.
- B-cells are efficiently depleted in most patients within 24 hours of receiving the first dose of ubiliximab, with 95% depletion in all patients by Week 4 and maintained the significant reduction at Week 24.
- Ubiliximab was well-tolerated, most frequent AEs were infusion related reactions (IRRs), all grade 1 or 2.
- A rapid infusion time, as low as one hour, of 450mg was well tolerated, produced high levels of CD20 depletion and is now being studied in the Phase 3 ULTRAMARINE trials.
- These data support the international Phase 3 ULTRAMARINE program evaluating ubiliximab (TG-1001) for the treatment of relapsing forms of Multiple Sclerosis (MS). The Phase 3 ULTRAMARINE trials are currently enrolling and are being led by Lawrence Steinman, MD, of Stanford University.