AUTOLOGOUS CELLULAR THERAPY OPEN LABEL PHASE I STUDY IN CHRONIC ACTIVE CROHN'S DISEASE (CACD) WITH TYPE 1 REGULATORY (TR1) LYMPHOCYTES (CATS1)

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17th Annual ISCT Meeting, May 18-21, 2011, The Netherlands

Tr1 lymphocytes are IL-10 producing cells known to inhibit inflammatory colitis in mice. *Ovasave* is the first human autologous Tr1 lymphocyte immunomodulating cell therapy for patients with CACD. *Ovasave w*as produced from patient PBMC exposed to ovalbumin with subsequent cloning and expansion. Activated Tr1 clones were used in a phase I/II 12-week study, to assess safety and explore efficacy in patients with CACD refractory to therapy. Concomitant use of immunosupressors and anti-TNF was not allowed. Safety was assessed with clinical and laboratory parameters and efficacy with CDAI (response: decrease ≥100; remission: <150) and IBDQ (increase ≥16). Eighteen patients were distributed in 4 single injection groups (106 cells n=7; 107 cells n=3; 108cells n=3 and 109 cells n=5). All had previous failure to immunosupressors and anti-TNF, 10 had previous surgery. *Ovasave* was well tolerated with 56 adverse events (17 possibly related; 1 related definitly) which recovered completely and 12 serious adverse events (3 possibly related with complete recovery). In the overall population, response was observed in 39% (7/18) of patients at weeks 5 and 8, remission in 11% (2/18) at week 5 and 6% (1/18) at week 8. In the 106 cells group, response was seen in 71% (5/7) at weeks 5 and 8 and remission in 29% (2/7) and 14% (1/7) at weeks 5 and 8 respectively. In this group, the mean CDAI reduction at weeks 5 and 8 was 140.1±112.5 (p=0.0165) and 133.7±84.4 (p=0.0119), respectively, and IBDQ response was seen in 83% (5/6) and 50% (3/6) and mean IBDQ improvement was 44.7±29.9 (p=0.0147) and 35.8±39.3 (p=0.0758) at weeks 5 and 8 respectively. These preliminary results using Tr1 autologous cells show good tolerability and suggest a dose related efficacy signal, supporting further work and presenting a new therapeutic opportunity for patients with Crohn's Disease.