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

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Tr1 lymphocytes are IL-10 producing cells known to inhibit inflammatory colitis in mice. *Ovasave* is the first human systemic autologous Tr1 lymphocyte immunomodulating cell therapy for patients with chronic active Crohn's Disease (CACD).
Ovasave was produced from patient PBMC exposed to ovalbumin with subsequent cloning and expansion in presence of S2 feeder cells. The activated, IL-10 and TGFß producing, antigen-specific Tr1 clones, where used in a phase I open label study (CATS1), to assess safety and explore efficacy of *Ovasave* in patients with CACD refractory to existing therapy. Patients were distributed in 4 cohorts with doses between 10^6 and 10^9 cells. After a pre-study washout, concomitant use of immunossupressors and anti-TNF was not allowed. Mean patient age was 34 with disease duration of 13 years. All had previous failure to immunossupressors and anti-TNF and 9 previous surgery. *Ovasave* was well tolerated with 40 adverse events (15 possibly related) and 10 serious adverse events (2 possibly related). At weeks 5 and 8 response (CDAI decrease ≥100) was observed in 40% (6/15) of patients with 66% (4/6) in the 10^6 cells dose. Remission (CDAI<150) was seen in 33% (2/6) and 17% (1/6) at weeks 5 and 8 respectively. Overall, 47% (7/15) and 27% (4/15) had IBDQ response (increase ≥16) at weeks 5 and 8 respectively. In the 10^6 cells dose IBDQ response was seen in 66% (4/6) and 50% (3/6) patients also at weeks 5 and 8. Six had IBDQ remission (>170), 4 of them in the 10^6 cells dose.
In these preliminary results Tr1 autologous cells show good tolerability and suggest a dose related efficacy signal, supporting further work and an opportunity to patients with Crohn's Disease.