

IBD

Regulatory T-cell therapy is a safe and well-tolerated potential approach for treating refractory Crohn's disease

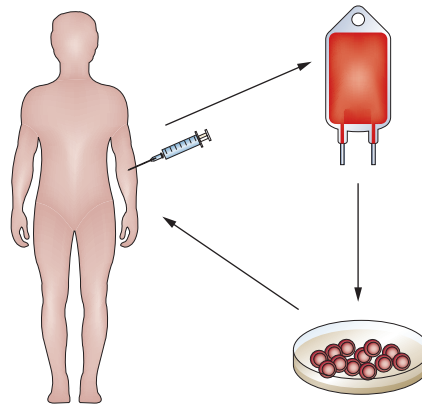
Autologous antigen-specific regulatory T cells (T_{REG}) are a well-tolerated potential therapy for refractory IBD, according to researchers from France.

Jean-Frédéric Colombel and colleagues carried out a 12-week, open-label, multicentre, single injection, escalating dose phase I and IIa clinical trial to investigate the safety and efficacy of ovalbumin-specific T_{REG} (ova- T_{REG}) cells as a treatment for IBD. The researchers recruited 20 patients with refractory Crohn's disease, and isolated T_{REG} cells from their peripheral blood for *in vitro* culture with ovalbumin. The ova- T_{REG} cells were then injected back into the patients.

The principle underlying this treatment approach is that the ova- T_{REG} cells—which have been primed *in vitro* to respond to ovalbumin—will encounter and respond to this common food antigen in the gut. “The cells then deliver a local immunomodulatory stimulus with the

potential to control inflammation,” explains Colombel.

Although all patients experienced adverse events, they were only thought to be treatment-related in 11 patients and all were, ultimately, resolved. Serious adverse events were experienced by seven patients



Regulatory T cells are isolated from peripheral blood and cultured with ovalbumin before being returned to the patient. Image produced in consultation with J.-F. Colombel.

and all except one, who died of treatment-unrelated causes, recovered. The safety profile of this treatment is in line with other first-in-man studies of acute refractory Crohn's disease therapies.

Reduction of Crohn's disease activity occurred in 40% of all patients at 5 weeks and 8 weeks after injection. In the group receiving the lowest dose of cells, 75% had responses and marked reduction of Crohn's disease activity during the study period; 38% were in remission at 5 weeks and 25% were still in remission at 8 weeks.

The researchers are planning a placebo-controlled trial. “The new study is to show proof of efficacy and define the optimum therapeutic dose,” notes Colombel.

Andy McLarnon

Original article Desreumaux, P. *et al.* Safety and efficacy of antigen-specific regulatory T-cell therapy for patients with refractory Crohn's disease. *Gastroenterology* doi:10.1053/j.gastro.2012.07.116