

Efficacy of Granulocyte and Monocyte Adsorptive Apheresis in Patients With Inflammatory Bowel Disease Showing Lost Response to Infliximab

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Background and Aims

In inflammatory bowel disease [IBD] patients, antibody-to-infliximab [ATI] generation is responsible for loss of response [LOR] and infusion reaction [IR] to infliximab. An immunotherapeutic approach is considered an option to overcome LOR. Granulocyte/monocyte adsorptive apheresis [GMA] using an Adacolumn has been shown to have clinical efficacy together with immunomodulatory effects in IBD patients.

Methods

We developed an ATI-CAI assay utilizing a C1q immobilized plate and applied it to measure ATI in patients who were receiving infliximab, including 56 with sustained response, 76 with LOR and six with IR. Furthermore, 14 patients with LOR and two with paradoxical skin reactions who received infliximab + GMA combination therapy were analysed.

Results

Fourteen patients with LOR, seven with Crohn's disease and seven with ulcerative colitis, showed significantly improved clinical indices [$p = 0.0009$], and decreased ATI [$p = 0.0171$] and interleukin-6 [$p = 0.0537$] levels at week 8 following initiation of infliximab + GMA therapy. Nine patients who received combination therapy achieved remission, which was maintained to week 24 with infliximab alone. Additionally, cutaneous lesions in two patients with IR were improved. ATI-CAI assay efficiency was not influenced by infliximab concentration during the test. Pre- and post-infliximab infusion ATI levels were not different. Patients with ATI greater than the 0.153 $\mu\text{g}/\text{mL}$ cut-off value were likely to experience LOR [odds ratio 3.0].

Conclusions

Patients who received infliximab + GMA therapy appeared to regain clinical response to infliximab by a decrease in ATI level. Furthermore, the concentration of infliximab in the test did not influence ATI measurement, but was associated with clinical response.