

Evaluation of Infliximab Therapy in Children with Crohn's Disease Using Trough Levels Predictors

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Abstract

Background: In adults, infliximab (IFX) levels correlate with disease activity, and antibodies to IFX (ATIs) predict treatment failure. We aimed to determine the association of IFX levels and ATIs with disease activity in a paediatric population. We prospectively collected blood, stool, and clinical data from 65 patients (age 10.5–15.1 years) with Crohn's disease (CD) before IFX administration, and measured IFX trough levels, ATIs, and faecal calprotectin levels (CPT). Samples were collected during maintenance therapy. We used multivariate analysis to identify the predictors of IFX levels. **Summary:** Lower levels of IFX were associated with ATIs positivity (OR 0.027, 95% CI 0.009–0.077). Higher C-reactive protein (CRP) level, erythrocyte sedimentation rate, and CPT levels were found in patients with lower IFX levels. The optimal combination of sensitivity (0.5) and specificity (0.74) for disease activity was calculated for IFX levels ≥ 1.1 $\mu\text{g/mL}$ using CRP level < 5 mg/L as a marker of laboratory re-

mission. In a model that used $\text{CPT} \leq 100$ $\mu\text{g/g}$ as the definition of remission, the optimal IFX trough level was 3.5 $\mu\text{g/mL}$. No independent association between remission and ATIs was found in our study population. However, we found an independent association between IFX levels and serum albumin levels (OR 1.364, 95% CI 1.169–1.593), $p < 0.001$. **Key Messages:** The paediatric population was similar to adult populations in terms of the association between IFX and ATIs as well as between IFX and disease activity.

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