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ORIGINAL ARTICLE

**Predictors of antitumor necrosis factor primary nonresponse and drug durability in pediatric inflammatory bowel disease**

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**Abstract**

Objectives

Antitumor necrosis factor (anti-TNF) therapies are first-line therapies for children with inflammatory bowel disease (IBD) (Crohn's disease [CD], ulcerative colitis [UC] and IBD-unclassified [IBD-U]). Limited studies describing anti-TNFs durability and loss of response in children. This study evaluates predictors of primary Nonresponse and 3-year drug durability in children with IBD.

Methods

This was a single-center retrospective review of patients with IBD less than 18 years old who initiated anti-TNF (infliximab or adalimumab) from January 1, 2014, to December 31, 2019. Clinical and laboratory data were recorded at the time of anti-TNF initiation, 14 weeks, 12 months, and 3 years. Predictors of primary nonresponse (discontinuation within 14 weeks) and durability were assessed.

Results

A total of 456 patients initiated anti-TNF therapy (183 adalimumab and 273 infliximab). Thirty-seven (8%) patients were primary nonresponders. The 3-year drug durability for both therapies was >70%. Among patients with CD, the 3-year durability was >75% for both therapies. The 3-year durability with UC/IBD-U was 37% for adalimumab and 56% for infliximab. Predictors of primary nonresponse were an erythrocyte sedimentation rate > 55 mm/h in CD on infliximab, and baseline albumin <4 g/dL and <15.6 years at diagnosis in UC/IBD-U.

Conclusions

Anti-TNF therapies had a 3-year durability of >75% in patients with CD, while the durability was lower (37%–56%) for patients with UC/IBD-U. Less than 10% of patients were considered primary nonresponders, which lends support to the long-term durability of anti-TNF therapies for pediatric IBD while keeping in mind predictive factors of Nonresponse.

**CONFLICT OF INTEREST STATEMENT**

The authors declare no conflicts of interest.