

# REAL-LIFE ANALYSIS OF THE DEVELOPMENT OF ANTIDRUG ANTIBODIES IN PAEDIATRIC PATIENTS WITH INFLAMMATORY BOWEL DISEASE AND THERAPEUTIC APPROACH

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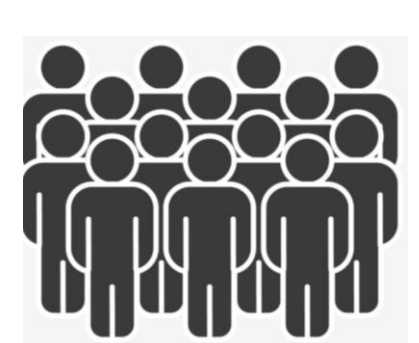
## Background and importance

Loss of response to infliximab and adalimumab therapy may occur due to development of **anti-drug antibodies (ADA)**, leading to treatment failure in inflammatory bowel disease (IBD).

## Aim and Objectives

To **assess the immunogenicity of infliximab and adalimumab in pediatric IBD patients** undergoing therapeutic drug monitoring (TDM), **along with therapeutic approach** and potential **factors contributing ADA development.**

## Results



90 patients

Adalimumab – 38 (42.2%)

Infliximab – 52 (57.8%)

Antibodies analysis

Adalimumab antibodies (AAA)

– 33 samples from 10 (26.3%)

infliximab antibodies (ATI)

– 53 samples from 28 (53.8%) patients

Adalimumab and infliximab concentrations were  $<1\text{mg/ml}$  in all patients with ADA.

### Adalimumab treatment group

No patients underwent adalimumab treatment were detected developing AAA

### Infliximab treatment group

IBD diagnosed: **Crohn disease** in 2 (50.0%) and **ulcerative colitis** in 2 (50.0%) patients.

Infliximab antibodies developed by  
– 4 (7.7%) patients

- 3 (75.0%) females
- mean age: 12.9 (7.1) years

Two (50.0%) patients had been on adalimumab for  $<1$  year.

**No poor patient adherence** was detected

Infliximab antibodies detection

All patients were on treatment with an **intensified infliximab dosage**

3 (75.0%) patients  
- receiving immunosuppressants -

Discontinuation of infliximab

\*Two (50.0%) patients

\*Infliximab concentrations before antibody detection ( $<6$  months) were  $1.5\ \mu\text{g/ml}$ ,  $3.6\ \mu\text{g/ml}$  and  $5.9\ \mu\text{g/ml}$ .

Infliximab intensification and ATI negativization.

ATI= 22 ng/ml\*

ATI= 137 ng/ml\*

HLA-DQA1\*05 genetic variants were analyzed in 3 (75.0%) patients, 2 (66.7%) patients were HLA-DQA1\*05 carriers.

## Conclusion and Relevance

A proportion of IBD pediatric patients developed ADA, with a **higher incidence observed in those receiving infliximab.**

- **Intensifying treatment** may be effective in achieving ADA negativization, in some cases.



Pediatric IBD patients treated with infliximab and adalimumab undergoing TDM

## Material and methods

Retrospective observational study

January/2019 - September/2024

### Standard dosage regimen:

Treatment was initiated according to the **standard dosing regimen (SD)** for **adalimumab** and **infliximab** in **pediatrics**, and was **adjusted according to TDM.**

Intensified dosage involved either shortening interval or increasing dose, following the **Vall d'Hebron Hospital protocol.**

Adalimumab, infliximab and ADA concentrations were determined by enzyme-linked immunosorbent assay (ELISA) until May 2022, followed by chemiluminescence immunoassay (CLIA). Concretely, ADA if patients had infliximab  $\leq 3\ \mu\text{g/ml}$  and adalimumab  $\leq 5\ \mu\text{g/ml}$  concentrations (drug-sensitive assay).

