Background and Objective

Therapeutic drug monitoring (TDM) is useful to optimize adalimumab therapy in patients with inflammatory bowel disease (IBD). The objective of this study was to design a preliminary population pharmacokinetic model (popPK) of adalimumab to evaluate covariates potentially responsible of the PK variability in pediatric patients with IBD.

Material and Methods

3-year retrospective, multicenter study (September 2016 to October 2019).

Demographics

- 23 pediatric patients (10 women): 20 with Crohn disease and 3 with ulcerative colitis.
- Median (range): age 14.0 (5-18) years and weight 55.9 (20.4-80) Kg.
- Median (range) serum albumin: 4.0 (2.8-5.0) g/dL.

TDM outcomes

- 75 ASC with a medium (range) of 10.72 (0.1-24.7) mcg/mL.
- Only one patient developed AAA.
- One-compartment with first order absorption and elimination.
- Among clinical variables analyzed, only albumin was significant on the apparent clearance (CL/F).
- Covariates analysis reduced the interindividual variability (IIV) associated with CL from 34.1% to 21.3%.

Conclusions

Adalimumab popPK in pediatric patients with IBD was best described by a one-compartment model with first order absorption and elimination. WGT was included on the PK parameters following an allometric relationship. Albumin showed statistically significant differences on adalimumab CL/F explaining the 62.5% of its variability.