

# Metabolism of immunosuppressants in children with inflammatory bowel disease

## **Abstract**

Thiopurines are still used as the main immunosuppressants in the maintenance therapy of paediatric Crohn's disease. According to official guidelines, in case of failure, biological therapy (mainly infliximab or adalimumab) is generally commenced. The present thesis focuses on the possibilities of therapy optimization in children in whom the conventional Crohn's disease therapy has failed based on the metabolism of administered immunosuppressive medications. We confirmed that the knowledge of thiopurine metabolites concentration in red blood cells may help to monitor patients' adherence to therapy. However, according to our observations in children on combination therapy of infliximab and thiopurine lower concentrations of 6-thioguanine (the active metabolite of thiopurines) seems to be effective compared to what has been expected. We presented a web application designed to partially substitute for the thiopurine metabolite measurements based on easily available laboratory data. Last, but not least, we confirmed that the clinical effect and safety profile of both adalimumab and infliximab are similar in the treatment of paediatric Crohn's disease. Only in case of family history of atopic dermatitis adalimumab may be preferred.