

POPULATION PHARMACOKINETICS MODEL OF THIOGUANINE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Poster

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This study developed the first population pharmacokinetic model for thioguanine in inflammatory bowel disease patients to support model-informed precision dosing.

KEY POINTS

- A one-compartment pharmacokinetic model with first-order absorption was developed using 131 trough concentrations from 28 IBD patients treated with thioguanine.
- Weight and 5-ASA use significantly affected thioguanine clearance, and the model estimated pharmacokinetic parameters with good precision (RSE 11-15%).
- Forecasting performance was adequate with an rRMSE of 24.1% and practically no systematic bias (MPE 0.2%).
- Thioguanine is currently used at a fixed dose in IBD and may benefit from model-informed precision dosing to optimize efficacy and minimize toxicity.
- Future studies should explore additional covariates such as TPMT genotype and drug interactions to further refine dosing recommendations.

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