

PP1.4. OD PODATAKA DO KLINIČKE ODLUKE: OPTIMIZACIJA DOZIRANJA MONOKLONSKIH ANTITELA U TERAPIJI INFLAMATORNIH BOLESTI CREVA

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Monoklonska antitela (mAb) predstavljaju ključne terapijske opcije u lečenju umerenih do teških formi inflamatornih bolesti creva (IBD). Međutim, izražena inter- i intra-individualna farmakokinetička varijabilnost često dovodi do suboptimalnog terapijskog odgovora. Reaktivni terapijski monitoring lekova (TDM) se trenutno preporučuje, posebno kod anti-TNF terapije, i predstavlja važan korak ka optimizaciji lečenja. Ipak, tradicionalni pristup u donošenju odluka o doziranju ne omogućava pouzdano predviđanje izloženosti leku pred narednu dozu i terapijski odgovor. Cilj istraživanja u okviru optYmAb projekta bio je korišćenje kliničkih i TDM podataka za razvoj farmakometrijskih modela mAb kod pacijenata sa IBD. U istraživanju su korišćeni podaci pacijenata lečenih u Univerzitetskom kliničko-bolničkom centru „Zvezdara“. Analiza podataka sprovedena je korišćenjem NONMEM softvera (ver. 7.6). Analize su obuhvatile razvoj novih populacionih farmakokinetičkih modela bioloških lekova korišćenjem prethodnih saznanja, uz kvantitativno ispitivanje izvora farmakokinetičke varijabilnosti. Dodatno, uspostavljene su povezanosti parametri izloženosti lekovima i povoljnih terapijskih ishoda, uključujući endoskopsku remisiju. Implementacija farmakometrijskih modela u TDM omogućava prelazak sa reaktivnog na prediktivni pristup doziranju bioloških lekova kod IBD pacijenata. Integracijom individualnih karakteristika pacijenta, parametara bolesti i farmakokinetičkih podataka, ovi modeli imaju potencijal da unapred predvide izloženost leku i verovatnoću terapijskog odgovora, čime se omogućava preciznije, proaktivno i individualizovano donošenje terapijskih odluka u rutinskoj kliničkoj praksi.

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PP1.4. FROM DATA TO CLINICAL DECISION: OPTIMIZATION OF MONOCLONAL ANTIBODY DOSING IN INFLAMMATORY BOWEL DISEASES

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Monoclonal antibodies (mAbs) are key therapies for moderate-to-severe inflammatory bowel disease (IBD). However, substantial inter- and intraindividual pharmacokinetic variability often leads to suboptimal treatment outcomes. Reactive therapeutic drug monitoring (TDM) is currently recommended, particularly for anti-TNF therapies, and represents an important step toward treatment optimization. Nevertheless, the traditional approach to dosing decisions does not enable reliable prediction of drug exposure before the next dose or future therapeutic response. The aim of the research conducted within the optYmAb project was to utilize clinical and TDM data for the development of pharmacometric models of mAbs in patients with IBD. Real-world data from patients treated at the University Clinical Hospital Center “Zvezdara” were used. Data analysis was performed using NONMEM (ver.7.6). The analyses included development of new population pharmacokinetic models of biologic drugs using prior knowledge, together with quantitative investigation of sources of pharmacokinetic variability. In addition, exposure-response analyses demonstrated associations between drug exposure and favorable therapeutic outcomes, including endoscopic remission, were established. Implementation of pharmacometric models into TDM enables a transition from a reactive to a predictive approach in biologic dosing for IBD patients. By integrating individual patient characteristics, disease-related parameters, and pharmacokinetic data, these models have the potential to predict future drug exposure and probability of therapeutic response, thereby enabling more precise, proactive, and individualized therapeutic decision-making in routine clinical practice.

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