

Special Issue

Personalizing Drug Therapy: The Role of Pharmacokinetics and Therapeutic Drug Monitoring

Message from the Guest Editors

Recent developments in clinical pharmacology and bioanalytical technology are revolutionizing customized medication treatment. Standardized dosing is often subtherapeutic or potentially dangerous; this is due to interindividual variability in drug metabolism, distribution, and excretion, which is influenced by genetic, physiological, and pathological variables. Personalized dosing approaches can be developed through therapeutic drug monitoring (TDM) and pharmacokinetic (PK) modeling. The Special Issue explores the critical roles that TDM and pharmacokinetics play in improving treatment efficacy and reducing toxicity in different patient groups, including pediatric and geriatric patients, particularly focusing on the interplay between PK and TDM. It also seeks an evidence-based, patient-centered approach for medication personalization. We seek studies on novel TDM approaches; the combination of Bayesian predictions and population pharmacokinetics; practical clinical applications; cutting-edge technologies such as microsampling and high-resolution LC-MS/MS platforms; the clinical application of TDM methods; and the practical implications of PK models in real-world clinical settings.

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