

Special Issue

Advances in Perinatal Pharmacology

Message from the Guest Editors

Understanding perinatal pharmacokinetics is crucial due to profound physiological changes during gestation and the neonatal period that affect drug behavior. Key changes include increased plasma volume and total body water altering drug distribution, reduced plasma albumin affecting protein binding, and changes in hepatic enzyme activity impacting drug metabolism. Increased cardiac output and renal blood flow may accelerate drug clearance. At birth, organ growth and function maturation influence neonatal drug exposure. Intrinsic and extrinsic factors like genetics and comedications cause exposure variability. Advances in molecular biology, in vitro and in silico systems, and in vivo data modeling have enhanced our understanding, improving drug safety and efficacy. Recent use of PBPK and population pharmacokinetics models allows for better prediction of drug disposition and description of sparse PK/PD data, enabling dose optimization and improved patient care.

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Deadline for manuscript submissions

25 July 2026



Pharmaceuticals

an Open Access Journal
by MDPI

Impact Factor 4.8
CiteScore 7.7
Indexed in PubMed



mdpi.com/si/249417

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Editor-in-Chief

Prof. Dr. Amélia Pilar Rauter

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