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Development and Evaluation of Ontogeny Functions of the Major UDP-Glucuronosyltransferase Enzymes to Underwrite Physiologically Based Pharmacokinetic Modeling in Pediatric Populations

October 2024 – *The Journal of Clinical Pharmacology* (JCP)

Why is this article important to you?
This activity increases knowledge around the consideration of age-related maturation of drug metabolizing enzymes as a factor that can be used in physiologically-based pharmacokinetic (PK) modeling to predict pediatric PK. Enhanced understanding of ontology functions of drug metabolizing enzymes such as the cytochrome P450 family and UDP-Glucuronosyltransferase (UGTs) is essential to accurately predicting PKs in pediatric patients and potentially limiting adverse drug effects. Learners that complete this activity will have an increased understanding of the age-dependent expression of various UGT enzymes. Participants will have the opportunity to compare the ontogeny functions for eight select UGTs based on a meta-analysis of both published *in vitro* and *in vivo* studies meeting the inclusion criteria. Completing this activity will provide an increased understanding of PK modeling incorporating ontogeny functions in UGTs to more accurately predict pediatric PK for drugs that are susceptible to glucuronidation.

ACPE Accreditation Statement
The American College of Clinical Pharmacology® is accredited by the Accreditation Council for Pharmacy Education (ACPE) as a provider of continuing pharmacy education.
UAN: 0665-0000-24-033-H01-P – ACPE 1 Contact Hours
Activity Type: Knowledge-based **Format:** Home-study **Target Audience**: 'P'

ACCME Accreditation Statement
The American College of Clinical Pharmacology® is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

ACCME Designation Statement
The Accreditation Council for Continuing Medical Education designates this journal CE activity for 1 *AMA PRA Category 1™* credit. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Target Audience
Interprofessional team of Physicians, Physician Assistants, Pharmacists, PhDs and Nurses interested in expanding their knowledge in comparing ontogeny models to inform pediatric drug response.

Learning Objectives
After completing this activity, the learner will be able to:

1. Identify drugs that are metabolized via specific hepatic UGT enzymes through glucuronidation;
2. Recognize the process for UGT ontology profile development;
3. Compare UGT ontogeny functions derived from both *in vitro* and *in vivo* sources;
4. Explain the relationship between adverse drug effects in pediatric patients and lack of maturation of drug metabolizing enzymes.

Requirements to Receive Credit
In order to receive continuing medical education (CME) or continuing pharmacy education (CPE) credit, the learner must register for the educational activity, study the provided journal article, complete the online learning Self-assessment Post-test as well as the online course Evaluation and CME/CPE Certificate. Credits and CME/CPE Certificates must be claimed within thirty (30) days of completing the article, Post-test and Evaluation. Contact CE@ACCP1.org with any questions.
Disclosures:

Article Selection:	John van den Anker, MD, PhD, Editor-in-Chief, JCP, selected the article for this course and has nothing to disclose.
Planner:	Jennifer Wohl, DHSc, PA-C, Associate Professor, Eastern Virginia Medical School, planned the continuing education documentation for this course and has nothing to disclose.
CE Reviewer:	Nusrat Shafiq, MD, Professor, Post Graduate Inst of Medical Education & Research, served as the CE Reviewer and has nothing to disclose.

Schedule & Fees
JCP monthly Journal CE articles are generally released on the 1st or 2nd Tuesday of each month. They are priced in packages of January to December for each year. Packages are available at no cost to ACCP Members and $75/calendar year to Non-members. Once you register, you have access to all of the Journal CE articles for the calendar year.

Acknowledgement of Financial Support
No financial support was received for this educational activity.

Home Study Initial Release and Expiration Dates
Date of Issuance: 10/1/2024
Expiration Date: 10/1/2027

Online Location:
https://ce.accp1.org/products/2024-accp-journal-of-clinical-pharmacology-journal-ce-monthly-ce-offerings