Members Obtain Free CE Credits from JCP Articles!

Pharmacogenomics and Morphine

September 2021 – *The Journal of Clinical Pharmacology* (JCP)

Why is this article important to you?
Morphine is an opioid analgesic indicated in the treatment of acute and chronic moderate to severe pain. From a pharmacodynamic standpoint, morphine exerts its effects by agonizing mu-opioid receptors predominantly resulting in analgesia and sedation. Pharmacokinetically, morphine is primarily metabolized in the liver via glucuronidation by the enzyme uridine diphosphate glucuronosyltransferase family 2 member B7 and encounters the transporter proteins organic cation transporter isoform 1 and P-glycoprotein (adenosine triphosphate–binding cassette subfamily B member 1) as it is being distributed throughout the body. The genes coding for the proteins impacting either the pharmacokinetics or pharmacodynamics of morphine may bear genetic variations, also known as polymorphisms, which may alter the function of the proteins in such a manner that an individual may have disparate treatment outcomes. Learners that complete this activity will gain better insight into the interaction of CEi/ARBs with different body functions during the infection.

Joint Accreditation Statement
In support of improving patient care, the American College of Clinical Pharmacology® (ACCP) is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE) and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

UAN: JA4008220-0000-21-043-H01-P– ACPE 1 Contact Hours
Activity Type: Knowledge-based **Format:** Home-study **Target Audience**: 'P'

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, Pharmacists and PhDs.

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

1. Recognize major metabolic pathways of morphine and its active metabolite relevant to analgesic effect;
2. Identify highlighted genetic polymorphisms in morphine therapy;
3. Interpret morphine response in each of the identified genetic polymorphisms;
4. Assess the need for future research to provide real-world evidence supporting the use of pharmacogenomics in morphine therapy.

Requirements to Receive Credit
In order to receive continuing education credit, the learner must register for the educational activity, study the provided journal article and complete the online learning Post-event Self-assessment, 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-event Self-Assessment and Evaluation. Contact CE@ACCP1.org with any questions.

Disclosures:

Article Selection: Joseph S. Bertino Jr, PharmD, FCP, FCCP, Editor-in-Chief, JCP and Owner, Bertino Consulting LLC. Nothing to disclose.

Planner: Hye Lim Lim, PharmD, ORISE Fellow, US Food & Drug Administration. Nothing to disclose.

CE Reviewer: Nusrat Shafiq, MD, Professor, Pharmacology, Post Graduate Inst of Medical Education & Research. 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: 09/01/2021
Expiration Date: 12/31/2023

Helpful Tips
Download the article and access the Self-assessment Post-test, Evaluation and Certificate here.

Learn how to print your CME/CPE Certificate here.
