Study looks at safety, effectiveness of generics for treating depression

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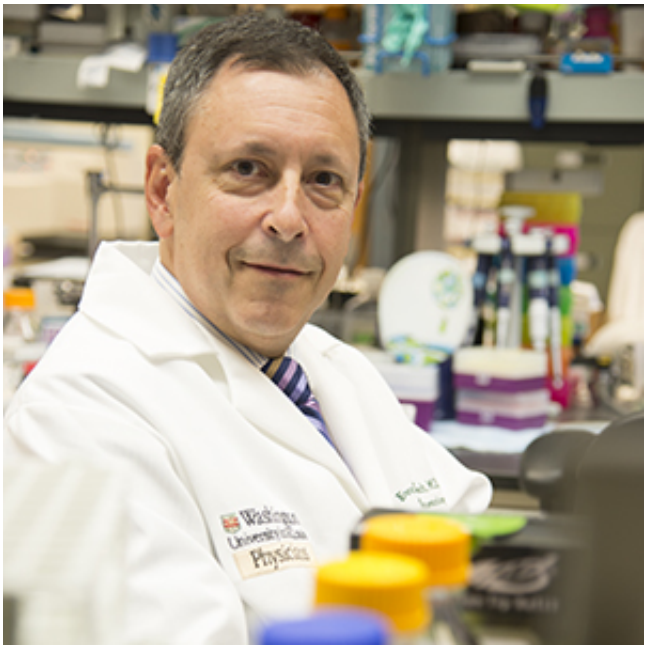

Evan D. Kharasch, M.D., Ph.D., and his colleagues will evaluate the quality, effectiveness and safety of generic drugs used to treat depression, as part of a study funded by the US Food and Drug Administration. Credit: Robert Boston

Researchers at Washington University School of Medicine in St. Louis are studying the quality, effectiveness and safety of generic drugs used to treat depression.

The research is supported by the U.S. Food and Drug Administration (FDA) and is the only study of its kind funded by the agency. The study

will determine whether brand-name 300 mg bupropion hydrochloride (HCl) extended-release (ER) tablets—sold commercially as Wellbutrin XL—and the various generic versions of bupropion HCl ER tablets work the same in the body and deliver the same therapeutic benefits.

The principal investigator is Evan D. Kharasch, MD, PhD, the Russell D. and Mary B. Shelden Professor of Anesthesiology and an expert in clinical pharmacology, drug metabolism, drug interactions, mechanisms of drug toxicity and pharmacogenetics, a clinical pursuit that focuses on understanding the ways that individuals can respond to the same drug differently.

"Since generic versions of extended-release bupropion HCl were introduced, there have been some reports that they may not be as effective as the brand-name drug and may be associated with adverse events," Kharasch said. "The first time a 300 mg generic version of this drug was tested, there were significant differences in drug concentrations in the blood compared with what was seen with the brand-name drug, Wellbutrin XL, and that generic formulation eventually was taken off the market. Now, we're going to study several generics to evaluate their blood concentrations in patients, how effective they are, and whether they are associated with side effects or with relapse. This study will go beyond the tests that have been conducted previously."

Kharasch, an anesthesiologist at Barnes-Jewish Hospital and also vice chancellor for research at Washington University, is collaborating with Eric Lenze, MD, professor of psychiatry. They will study blood samples from patients with depression to learn how much of the generic and brand-name drugs get into the bloodstream and how long the medications remain in the system.

And they'll compare how patients say they feel when taking brand-name versus generic versions of the same drug. Lenze, an expert on treatment

studies for depression, developed innovative approaches for patient participation and monitoring in this study. Patients will report their symptoms daily using a cell phone-based program, which will be easier and more accurate than less frequent in-person assessments, the usual method for monitoring symptoms.

The Washington University researchers also will collaborate with national pharmacy benefit manager Express Scripts to look at outcomes of people taking the various formulations of the drug.

"This project promises to develop a new model for determining drug safety and effectiveness using data from a pharmacy benefit manager on a massive scale to actively monitor patients taking the drug," Kharasch said. "This model has the potential to help us detect potential problems and to intervene much earlier than currently possible. We very much value the opportunity to collaborate with Express Scripts and have access to its wealth of data on this project to improve patient safety."

Express Scripts manages the pharmacy benefit for tens of millions of Americans, processing more than 1 billion prescriptions each year.

Kharasch believes the three-year, $2.8 million dollar grant will help determine whether this particular generic drug works as well as the brand-name version. It also should contribute to the understanding of how an individual's DNA can influence whether a particular medication is effective.

"Another goal of the research is to study the pharmacogenetics of bupropion—that is, how patients' genetic makeup affects their blood concentrations and response to the drug," Kharasch said. "We also will learn much more about the genetic variability of one of the major enzymes in the liver that is responsible for eliminating drugs from the body, and how that influences clinical outcomes."

Provided by Washington University School of Medicine