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Pharmacokinetic Pharmacogenetic Prescribing Guidelines for Antidepressants: A Template for Psychiatric Precision Medicine.

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Abstract

Antidepressants are commonly prescribed medications in the United States, and there is increasing interest in individualizing treatment selection for more than 20 US Food and Drug Administration-approved treatments for major depressive disorder. Providing greater precision to pharmacotherapeutic recommendations for individual patients beyond the large-scale clinical trials evidence base can potentially reduce adverse effect toxicity profiles and increase response rates and overall effectiveness. It is increasingly recognized that genetic variation may contribute to this differential risk to benefit ratio and thus provides a unique opportunity to develop pharmacogenetic guidelines for psychiatry. Key studies and concepts that review the rationale for cytochrome P450 2D6 (CYP2D6) and cytochrome P450 2C19 (CYP2C19) genetic testing can be delineated by serum levels, adverse events, and clinical outcome measures (eg, antidepressant response). In this article, we report the evidence that contributed to the implementation of pharmacokinetic pharmacogenetic guidelines for antidepressants primarily metabolized by CYP2D6 and CYP2C19.

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