Combinatorial Pharmacogenomic Testing Outperforms Individual Pharmacokinetic Gene Guidelines When Predicting Blood Levels of Psychotropic Medications and Clinical Outcomes in Patients with Depression


**BACKGROUND**

- There are many available options for pharmacogenomic testing, and it is important that tests be rigorously evaluated to ensure appropriate clinical use and patient management.
- We evaluated the clinical validity of a combinatorial pharmacogenomic test and single-gene Clinical Pharmacogenetics Implementation Consortium (CPIC) guidelines against patient outcomes and medication blood levels to assess their ability to appropriately inform prescribing in major depressive disorder (MDD).

**METHODS**

- All patients were enrolled in the Genomics Used to Improve DEpression Decisions (GUIDED) randomized-controlled trial, had a diagnosis of MDD, and ≥1 prior medication failure.
- All analyses were performed for all eligible medications (i.e. included on the combinatorial pharmacogenomic test report) and the subset of medications with CPIC level A or B evidence.
- The ability to predict patient outcomes at week 8 was assessed according to medication congruence with the combinatorial pharmacogenomic test or single-gene guideline recommendations.

**CONCLUSION**

- Both the combinatorial pharmacogenomic test and single-gene guidelines were significant predictors of blood levels when evaluated individually (individual models in Table).
- Only the combinatorial pharmacogenomic test remained significant when both were included in the multivariate model (combined models in Table).

**REFERENCES**

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