Improved response and remission rates in patients receiving IDgenetix-guided medication management for major depressive disorder

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Background

- Pharmacogenomics (PGx) offers the opportunity to select effective therapies based on a patient's genotype. The majority of PGx tests only report drug-gene interactions and, thus, do not integrate significant drug-drug and lifestyle factors in medication recommendations.
- IDgenetix is a PGx test that uses a prospectively designed algorithm to incorporate the results of a 15-gene variant panel with drug-drug interaction data and lifestyle factors to provide medication recommendations for patients diagnosed with major depressive disorder (MDD), anxiety, or other mental illnesses.
- As shown in the boxes below, the current 'trial and error' standard of care has produced disappointing response, remission, and adverse event rates.

Inadequate Therapy Response	Low Remission Rate	High Prevalence of Adverse Drug Events
53% of patients with MDD have an inadequate response to first-line treatment [1]	72% of patients with MDD do not achieve remission using the current standard of care [1]	Likelihood of discontinuation increases with each successive treatment attempt [2]

Objective

- Evaluate the performance of IDgenetix-guided medication management in a real-world clinical outcome study of patients with moderate to severe depression compared to the current standard of care treatment.

Methods

- IRB-approved, single-center, open-label study.
- Study data was collected prospectively for the PGx-guided group (n=120) and retrospectively for the control group (n=122).
- All subjects met inclusion criteria of moderate or severe depression, measured as a PHQ-9 score of 10 or greater at baseline, and a follow-up visit with a PHQ-9 assessment at 8 weeks following baseline.
- Response and remission rates across study groups were compared using the chi-squared test and analysis of covariance while adjusting for baseline.

Results

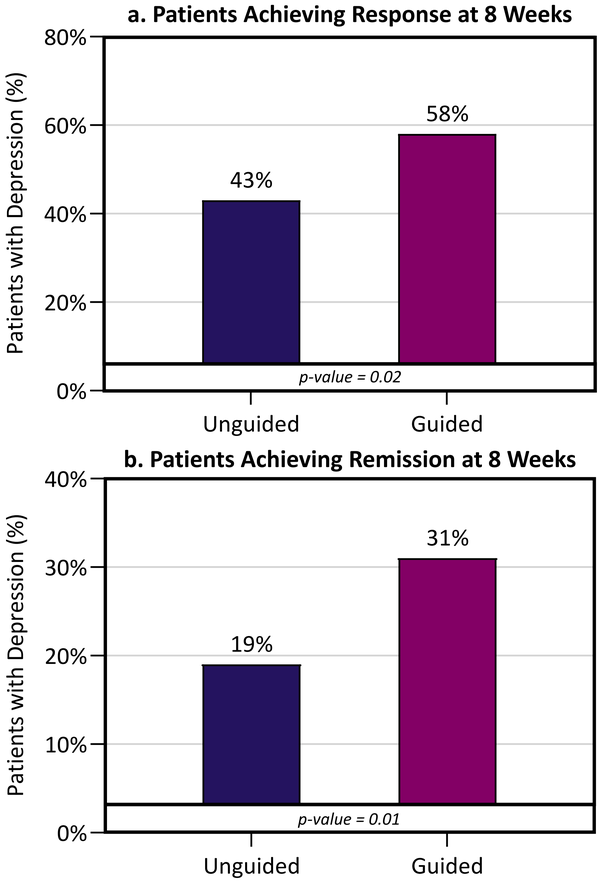

Figure 1. Response (a) and Remission (b) rates for patients with moderate or severe depression in the unguided (n=122) or guided (n=120) groups. The percentage of patients achieving response (*p=0.02*) and remission (*p=0.01*) at 8 weeks was higher in the guided vs. unguided groups. Study groups were matched on age, gender, and baseline PHQ-9 scores.

Real-world vs. Randomized Controlled Trials

Study	Unguided Events	Unguided Total	Guided Events	Guided Total	Risk Ratio 95% CI	Risk Ratio 95% CI
Current Study*	23	122	37	120	1.64 [1.03, 2.58]	
Bradley 2018**	7	53	14	40	2.65 [1.18, 5.95]	

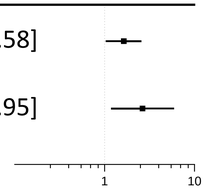

Figure 2. Risk ratios of remission rates in PGx guided vs. unguided groups from a real-world study (*) and a randomized controlled trial (**).[3,4]

Conclusion

- Consistent with Bradley et al. 2018[3], results from this real-world study demonstrate that PGx-guided medication management using IDgenetix significantly improved response (35% increase) and remission (64% increase) rates for patients diagnosed with moderate to severe depression.

Clinical Impact

- IDgenetix-guided medication management integrates drug-gene, drug-drug, and lifestyle factors to provide a comprehensive PGx profile of patients with MDD.
- Treatment recommendations from IDgenetix significantly increase response and remission rates in patients with moderate to severe depression.

References

1. Trivedi et al. *Am J Psychiatry*. 2006.
2. Rush et al. *Am J Psychiatry*. 2006.
3. Bradley et al. *J Psychiatr Res*. 2018.
4. Brown et. al. *Clin Pharmacol Ther*. 2022.

Acknowledgment and Disclosure

FC and RC are employees and stock/options holders at Castle Biosciences, Inc.