iDNA PGx CNS improves MDD treatment decisions and clinical outcomes: A patient case series analysis

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Introduction

Medication that is used for common psychiatric disorders such as Major Depressive Disorder (MDD) is contributing to clinical management, however efficacy and side effects depict a degree of variability, while the clinical consequences can be serious. Genetic variation has been estimated to be responsible for up to 95 % of the differences in individual responses to medication. Towards the recent development of precision medicine into personalized healthcare, pharmacogenetic tests have been introduced in clinical practice.

Here, we evaluated the iDNA PGx CNS, a novel pharmacogenetic panel providing clinically useful information to psychiatrists for the selection of the most appropriate medication for the management of MDD.

The main objective of this study was to assess if the use of the iDNA PGx CNS in vitro diagnostic medical device is associated with an improvement in clinical decisions to decrease the risk of adverse effects and improve the individual's therapeutic response to a medication among patients with MDD.

Design, participants and measures

This study included 132 patients who received a diagnosis of MDD and were tested with the iDNA PGx CNS panel in the period from 04 June 2020 to 16 March 2022. Among them, 27 individuals were cases of new diagnosis (i.e., no previous treatment received) and 105 individuals were old cases, diagnosed with MDD. Firstly, all participants were assessed for their response to received medication after iDNA PGx CNS use, using a scale of 1 to 10. Subsequently, the patients were questioned to report severe side effects, changes in their previous medication and reduced number of visits & communications with the physician after iDNA PGx CNS use.

Results

The percentage of patients who answered positively to the question «Response to treatment after PGx» was 96.2% ($p<0.01$) (Fig 1). To evaluate the response to treatment after using PGx, the average rating from the sample's data set was measured at 8.24 (1.79), which shows a high response to treatment ($p<0.01$). Moreover, 82.6% of patients did not report severe side effects ($p<0.01$) (Fig 2). Among the patients that were in the group of old cases, 90.5% of patients referred that it was necessary to change the previous treatment after iDNA PGx CNS ($p<0.01$) (Fig 3). Interestingly, 87.1% of patients reported that they had less visits & communications with the doctor after the iDNA PGx CNS was conducted ($p<0.01$) (Fig 4).

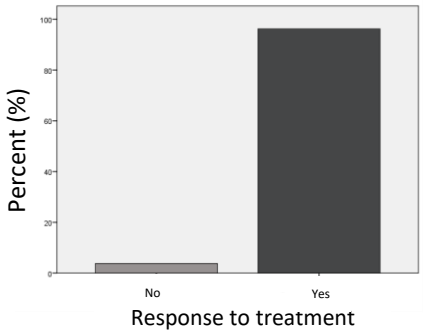

Fig 1.Response to treatment after PGx

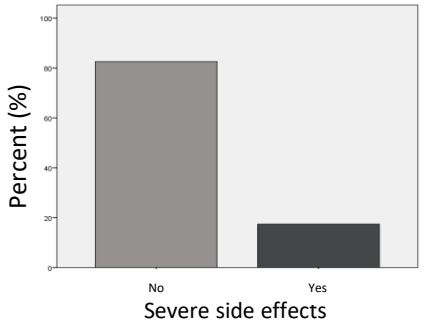

Fig 2.Severe side effects

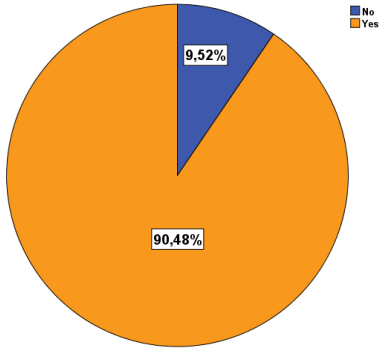

Fig 3.Was it necessary to change the previous treatment after PGx?

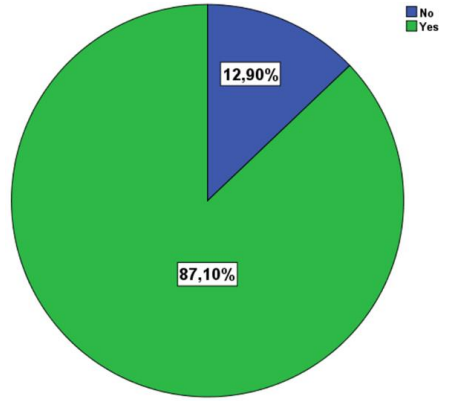

Fig 4.Less visits & communications with the doctor after PGx use

Conclusion

Overall, the results strongly suggest that the iDNA PGx CNS in vitro diagnostic medical device is a valuable tool providing useful pharmacogenetic-based clinical information to psychiatrists, supporting therapeutic medical decisions for MDD, thus urging its broad clinical implementation to personalized medicine.

References:

Bothos *et al.* J Transl Med, 2021, 19(1), 151.

Roukas *et al.* European Neuropsychopharmacology, 53, S159-S160.