MEDICATION OPTIMIZATION BASED ON PHARMACOGENETIC PANEL TESTING IN A CLINICAL SETTING - THE GUIDE ON MED RESEARCH

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Background Substantial evidence underscores the pivotal role of pharmacogenetic testing in enhancing therapeutic management and subsequent treatment outcomes. However, despite prior research, the evaluation of comprehensive pharmacogenetic-guided therapeutic management in clinical hyperpolypharmacy (HPP) populations, defined as chronic use of ≥ 10 medications remains limited. Our research aims to elucidate the impact of extensive pharmacogenetic testing within a clinical HPP setting.

Methods The primary outcome is the extent of drug-gene interactions (DGI) per patient and the total number of preventable events. As secondary endpoints, we quantify the number of clinical recommendations and the degree of adherence to these recommendations by the treating clinicians. A total of 100 patients are included from the medical psychiatry unit and the internal medicine wards of the Maasstad hospital. All patients aged 18 years and older with HPP are eligible for inclusion.

Results An average of 4,3 polymorphisms per individual was found, leading to at least one DGI in 48% of the patients, with an average of 0,75 DGI per patient. Reduced conversion of clopidogrel's prodrug to its active metabolite due to a polymorphism in the CYP2C19 gene was observed in 8% of all patients. All recommendations have been considered by the medical team, with additional monitoring or medication adjustments made when necessary. This resulted in an adherence rate of 63% of the interventions.

Conclusion This analysis revealed that in nearly half of HPP patients in a clinical setting, at least one DGI could be identified. In some patients, the interactions may increase morbidity and mortality risk.

Key words pharmacogenetics, hyperpolypharmacy, polymorphisms, clinical, drug-gene-interaction, medication optimization