

Publication

Genotyping of Patients with Adverse Drug Reaction or Therapy Failure: Database Analysis of a Pharmacogenetics Case Series Study.

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Pharmacogenetics (PGx) is an emerging aspect of personalized medicine with the potential to increase efficacy and safety of pharmacotherapy. However, PGx testing is still not routinely integrated into clinical practice. We conducted an observational case series study where PGx information from a commercially available panel test covering 30 genes was integrated into medication reviews. The aim of the study was to identify the drugs that are most frequently object of drug-gene-interactions (DGI) in the study population.; In out-patient and in-patient settings, we recruited 142 patients experiencing adverse drug reaction (ADR) and/or therapy failure (TF). Collected anonymized data from the individual patient was harmonized and transferred to a structured database.; The majority of the patients had a main diagnosis of a mental or behavioral disorder (ICD-10: F, 61%), of musculoskeletal system and connective tissue diseases (ICD-10: M, 21%), and of the circulatory system (ICD-10: I, 11%). The number of prescribed medicines reached a median of 7 per person, resulting in a majority of patients with polypharmacy (≥ 5 prescribed medicines, 65%). In total, 559 suspected DGI were identified in 142 patients. After genetic testing, an association with at least one genetic variation was confirmed for 324 suspected DGI (58%) caused by 64 different drugs and 21 different genes in 141 patients. After 6 months, PGx-based medication adjustments were recorded for 62% of the study population, whereby differences were identified in subgroups.; The data analysis from this study provides valuable insights for the main focus of further research in the context of PGx. The results indicate that most of the selected patients in our sample represent suitable target groups for PGx panel testing in clinical practice, notably those taking drugs for mental or behavioral disorder, circulatory diseases, immunological diseases, pain-related diseases, and patients experiencing polypharmacy.

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