

Abstract

Background: Information on genetic polymorphisms in drug-metabolizing enzymes is valuable when analysing the causal relationship between drug intake and an adverse drug reaction (ADR). Patients who have experienced an ADR should be informed about the possible existence of genetic polymorphisms that may contribute to the occurrence of ADRs, since this will allow adequate dosing of future medication.

In collaboration with the regional hospital pharmacy Ziekenhuisapotheek Noord-Oost-Brabant (ZANOB), the Netherlands Pharmacovigilance Centre Lareb developed a method for informing physicians or pharmacists and their patients about a possible pharmacogenetic involvement in the pathogenesis of the reported ADR and for offering easy access to genotyping if requested by the treating physician. An anonymized copy of the test results could be used for the interpretation of possible signals at the pharmacovigilance centre.

Objectives: The aim of this study was to gain insight into the feasibility of informing the reporting physician or pharmacist about possible involvement of a genetic polymorphism and subsequent genotyping of patients based on ADR reports received by the Netherlands Pharmacovigilance Centre.

Results: A total of 38 reports were selected in which genotyping was considered useful. In 15 of 38 cases (39.5%), the reporting health professionals actually initiated genotyping. The majority of the drugs implicated in causing ADRs were selective serotonin reuptake inhibitors, followed by other antidepressants and antipsychotic drugs. No logistical problems were encountered during this study.

Conclusion: The level of participating health professionals in genotyping their patients was relatively high. Apparently, reporting health professionals share the vision that information on pharmacogenetic characteristics of their individual patients is important. The use of an existing infrastructure for DNA sampling that is familiar to the patients and health professionals may have contributed to the high response rate. Pharmacovigilance centres may suggest pharmacogenetic investigation and subsequent individualized pharmacogenetic counselling after a reported ADR. These centres can also be a valuable starting point for pharmacogenetic studies, since data from different sources can be combined in the assessment of the causal relationship between drug intake and an ADR. This study shows that genotyping initiated by pharmacovigilance centres is indeed feasible, when using the standard laboratory testing infrastructure.

For more information please contact e.vanpuijenbroek@lareb.nl