

Use of drugs with Pharmacogenomics (PGx)-Based Dosing Guidelines in a Danish Cohort of Persons with Chronic Kidney Disease, Both on Dialysis and Not on Dialysis: Perspectives for Prescribing Optimization

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Abstract

Aim: The objective of this registry study is to assess the utilization of PGx drugs among patients with CKD **Methods:** This study was a retrospective study of patients affiliated to the Department of Nephrology, Aalborg University Hospital, Denmark during 2021. Patients diagnosed with CKD were divided into CKD without dialysis and CKD with dialysis. PGx prescription drugs were retrieved from the Patient Administration System. Actionable dosing guidelines (AG) for specific drug-gene pairs for CYP2D6, CYP2C9, CYP2C19 and SLCO1B1 were retrieved from the PharmGKB homepage. **Results:** Out of 1241 individuals, 25.5% were on dialysis. The median number of medications for each patient was 9 within the non-dialysis group, and 16 within the dialysis group. Thirty-one distinct PGx drugs were prescribed. Altogether, 76.0% (943 individuals) were prescribed at least 1 PGx drugs and the prevalence of prescriptions of PGx drugs was higher the dialysis group compared to the non-dialysis group. The most frequently prescribed drugs with AG were metoprolol, pantoprazole, atorvastatin, simvastatin, warfarin. **Conclusion:** This study demonstrated that a substantial proportion of patients with CKD are exposed to drugs or drug combinations for which there exists actionable dosing guidelines related to PGx of CYP2D6, CYP2C19, CYP2C9, and SLCO1B1.

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