Warfarin dosing in patients with impaired kidney function.

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Abstract

BACKGROUND: In patients with kidney impairment, warfarin, a drug metabolized primarily by the cytochrome P-450 system, is initiated at similar doses and managed similarly as in the general medical population. Unfortunately, few data exist to guide dose adjustment in patients with decreased kidney function. Here, we determine the degree of warfarin dose reduction associated with kidney impairment and make recommendations for warfarin dosing.

SETTING DESIGN: Cross-sectional analysis.

SETTING & PARTICIPANTS: Long-term warfarin users followed up at anticoagulation clinics (n = 980); 708 participants from the University of Alabama (UAB) and 272 participants from the University of Chicago (UIC).

PREDICTOR: No/mild (estimated glomerular filtration rate [eGFR] ≥ 60 mL/min/1.73 m(2)), moderate (eGFR, 30-59 mL/min/1.73 m(2)), and severe (eGFR < 30 mL/min/1.73 m(2)) kidney impairment; CYP2C9 and VKORC1 genotype; age; race; sex; body mass; sociodemographic factors; smoking status; alcohol; vitamin K intake; comorbid conditions (eg, congestive heart failure); and drug interactions (eg, amiodarone and statins).
OUTCOME & MEASUREMENT: Warfarin dose (milligrams per day) was evaluated using linear regression after adjustment for clinical, demographic, and genetic factors.

RESULTS: Prevalences of moderate (31.8% and 27.6%) and severe kidney impairment (8.9% and 6.6%) were similar in the UAB and UIC cohorts. Warfarin dose requirements were significantly lower in patients with moderate and severe kidney impairment compared with those with no/mild kidney impairment in the UAB (P < 0.001) and UIC (P < 0.001) cohorts. Compared with patients with no/mild kidney impairment, patients with moderate kidney impairment required 9.5% lower doses (P < 0.001) and patients with severe kidney impairment required 19% lower doses (P < 0.001).

LIMITATIONS: No measurement of warfarin, serum albumin, vitamin K, and coagulation factors; no evaluation of other markers (eg, cystatin).

CONCLUSION: Moderate and severe kidney impairment were associated with a reduction in warfarin dose requirements.

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