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Drug dosage adjustment in hospitalized patients with renal impairment in internal medicine wards

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Dose adjustment for certain drugs is required during reduced renal function to avoid toxicity as many drugs are eliminated by the kidneys. The aim of this study was to assess whether appropriate dosage adjustments were made in patients with renal impairment. A prospective cross-sectional study was carried out at internal medicine wards of Tikur Anbesa Specialized Hospital. All patients with creatinine clearance <59 ml/min between April and July, 2013 were included in the analysis. Data regarding serum creatinine level, age, sex and prescribed drugs and their dosage was collected from the patients' medical records. Serum creatinine level >1.2 mg/dL was used as a cutoff point in preselection of patients. The estimated glomerular filtration rate was calculated using the Cockcroft- Gault (CG) equation. Drug prescribing in renal failure was the standard for dose adjustment. Nine percent (73/810) of medical admissions were found to be renally impaired ($\text{CrCl} < 59$ ml/min). There were 372 prescription entries for the 73 patients with renal impairment. Dose adjustment was required in 31% (115/372) of prescription entries and fifty eight (51%) prescription entries requiring dose adjustment were found to be inappropriate. Of 73 patients, 54 patient received ≥ 1 drug that required dose adjustment (median 2; range 1 - 6). Fifteen (28%) patients had all of their drugs appropriately adjusted; twenty two (41%) patients had some drugs appropriately adjusted and seventeen (31%) of patients had no drugs appropriately adjusted. No patients were documented to have received dialysis. In this study, dosing errors was common among hospitalized patients with renal impairment. Improving the quality of drug prescription in patients with renal impairment could be of importance for improving the quality of care.

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