Pharmacokinetics of amoxicillin in subjects with normal and impaired renal function

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The pharmacokinetics of amoxicillin was investigated in 4 healthy volunteers and in 16 patients with varying degrees of renal impairment, 4 of whom were on regular hemodialysis. Amoxicillin was administered both in a 1-g single intravenous injection and two 500-mg capsules per os. The kinetics of the antibiotic followed an open two-compartment model. In the patients with renal failure there was a significant decrease in ?, k10, and total body clearance. A linear relationship between ? of amoxicillin and creatinine clearance was found. This relationship allows dosage regimen adjustment for patients with renal impairment. A significant increase in the absorption half-life of the antibiotic was also observed in patients with renal impairment. The half-life of the antibiotic during hemodialysis was 2.3 hr.