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Vancomycin Use and VRE Colonization in Dialysis Patients

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Vancomycin is widely used with hemodialysis patients as empirical therapy for dialysis-associated infections. To determine the relation of this practice to the generation of vancomycin-resistant enterococcal (VRE) colonization, Atta and coinvestigators from Johns Hopkins in Baltimore, Maryland, conducted a 2-year prospective cohort study. Cultures for VRE were taken from rectal swabs obtained from patients at the start and finish of the study period and during interim hospitalizations.

The results showed that 10 of 124 patients initially grew VRE. Twenty-four of the remaining patients had no follow-up cultures because of patient death (62%), transfer to another dialysis facility

(17%), patient's refusal (7%), and transplantation (4%), and thus were excluded. The remaining patients (n=90) had a median age of 54.3 years and were 92% African American and 50% male. Fifty-eight percent were treated by hemodialysis. They received 403 g of intravenous vancomycin over 157.2 patient-years of follow-up, 73% as outpatients.

Sixteen (17.8%) of 90 patients became colonized with VRE, an incidence rate of one case per 9.8 patient-years of follow-up. None of the 29 patients who did not receive vancomycin developed VRE, compared with 26% of those treated with vancomycin ($P=.001$). The odds ratio (95% confidence interval) for the association of outpatient vancomycin (g/y) with VRE colonization was 1.23 (1.05, 1.44, $P=.008$). The association remained significant following adjustment in separate logistic regression analyses for relevant demographic, clini-

cal, antimicrobial (inpatient vancomycin, oral or intravenous cephalosporins, aminoglycosides, quinolones, or anti-anaerobics), and hospitalization exposures. The unadjusted relative risk of death in patients growing VRE was significantly higher than in those not colonized with VRE ($P=.005$).

The authors concluded that VRE colonization is a relatively common and underrecognized problem among chronic dialysis patients and is strongly and independently associated with the outpatient use of vancomycin, which should be avoided whenever possible.

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