The diverse patient and dialysis-unit characteristics in the United States pose challenges for assessing the safety and efficacy of reuse practices. Collins and coinvestigators from the Hennepin County Medical Center, University of Minnesota, conducted a study to determine if the chemical germicides used to sterilize the dialyzers during reprocessing had an effect on patient mortality.

A 10% random sample of period-prevalent hemodialysis patients from units practicing conventional dialysis (<25% of patients with high-efficiency/high-flux dialysis) were analyzed. The data included 13,926 patient observations in 1989-1990 and 20,422 in 1991-1993. CDC-Health Care Financing Administration facility survey Medicare data were analyzed with a Cox regression model, evaluating the risk of reuse compared with no reuse and adjusting for comorbidity, unit characteristics, and profit status. In 1989-1990, freestanding and hospital-based units that did not reuse dialyzers were not significantly different from each other in mortality rates. In 1991-1993, however, no-reuse, freestanding, for-profit units had higher risks (relative risk [RR]=1.23, P=.003) compared with no-reuse, hospital-based, nonprofit units. No-reuse, hospital-based, for-profit units, in contrast, were associated with a lower mortality risk (RR=0.70, P=.0001).

An isolated higher risk associated with peracetic acid manual reuse in freestanding units (1989-1990) was identified in for-profit units only. In the 1991-1993 period, an increased mortality risk was noted in hospital-based nonprofit units practicing formaldehyde automatic reuse and in freestanding for-profit units using glutaraldehyde, which accounted for <5% of all units. All other interactions of reuse germicide and technique were not different from no reuse.

The varying mortality rates identified in both no-reuse and reuse units using conventional dialysis suggest that other factors, such as dialysis therapy and anemia correction (both known predictors of patient survival), have a greater influence on US mortality than reuse germicides and techniques.

FROM: Collins AJ, Ma JZ, Constantini EG, Everson SE. Dialysis unit and patient characteristics associated with reuse practices and mortality: 1989-1993. *J Am Soc Nephrol* 1998;9:2108-2117.

Vancomycin-Resistant Enterococci in Australia

Enterococci with acquired resistance to vancomycin and other glycopeptides have emerged and spread rapidly through Europe and the United States since 1988. Bell and colleagues from the Department of Microbiology and Infectious Diseases, Women's and Children's Hospital, Adelaide, recently reported on the vancomycin-resistant enterococci (VRE) problem in Australia.

The first isolate of VRE in Australia occurred in 1994. Only one case was noted in 1995. Since March 1996, there has been a steady increase in the number of reports of VRE throughout the country. To August 1998, there have been 69 documented strains or clusters of strains detected in patients with documented infection, and approximately three times as many strains have been detected through screening procedures of contacts or in risk groups. Nineteen percent of strains whose source was known were blood isolates, 34% came from urine, and 47% came from other specimens. The strains have been found in 26 institutions in 10 widely separated cities or regions of the country (in 6 of 8 states or territories), without any obvious temporal associations in their appearance.

All strains appear to have arisen locally except for one strain imported from the United Kingdom; there was no direct evidence of interhospital transfer of strains. Of the 69 strains, 42 were *van*B *Enterococcus faecium*, 12 were *van*A *E faecium*, 9 were *van*B *Enterococcus faecalis*, and 3 were *van*A *E faecalis*. Three were negative for *van*A, *van*B, *van*C1, *van*C2/C3, and *van*D. Pulsed-field gel electrophoresis (PFGE) profiles on 38 strains have revealed at least 8 types of *van*B *E faecium*, 6 of *van*A *E faecium*, 4 of *van*B *E faecalis*, and 2 of *van*A *E faecalis*. Isolates containing *van*A always had different profiles from those containing *van*B. Clinical clustering was confirmed by PFGE and supported by extended antibiogram. Fourteen of 15 *E faecalis* were ampicillin susceptible, compared to only 2 of 54 *E faecium*. One *E faecalis* strain was β-lactamase–positive. The epidemiology of VRE in Australia appears to be different from that of Europe or the United States, since *van*B *E faecium* predominates and strains have appeared in diverse locations independently and are highly polyclonal.

FROM: Bell J, Turnidge J, Coombs G, O'Brien F. Emergence and epidemiology of vancomycin-resistant enterococci in Australia. *Commun Dis Intell* 1998;22:249-252.

Vancomycin Use in Burn Patients and Risk of Resistance

Investigators from the US Army Institute of Surgical Research, Fort Sam Houston, conducted a retrospective study to document the risk of the development of vancomycin-resistant bacteria in a population of seriously burned patients during a 10-year period of common vancomycin hydrochloride use. Microbiology, infection, and antibiotic-use records collected during the hospitalization of 2,266 consecutively admitted seriously burned patients were reviewed. Vancomycin was the primary therapeutic agent used for gram-positive infections and also was used as a perioperative prophylactic antibiotic during burn-wound excision. This policy was established because of a high incidence of methicillin-resistant *Staphylococcus aureus* colonization and an anecdotal association of increased β-lactam resistance in endemic gram-negative pathogens associated with the use of penicillinase-resistant penicillins and cephalosporins.

Examinations of 15,125 gram-positive isolates, including 957 enterococci, for in vitro sensitivity to vancomycin yielded 3 vancomycin-resistant enterococci (VRE) isolates in 3 patients. Vancomycin was used prior to VRE isolation in 1 of these patients. Resistance was found in three other organisms (two *Corynebacterium* species, 1 *Lactobacillus* species). Vancomycin was used prior to these isolations in 2 of 3 patients. None of the vancomycin-resistant organ-