Cefotaxime lock improves survival of tunneled cuffed hemodialysis catheters in diabetics

Tunneled cuffed catheters (TCCs) are frequently the only vascular access option for hemodialysis patients with diabetes, because of these patients' compromised vasculature. TCCs are, however, vulnerable to bacterial infection and thrombogenesis. Saxena *et al.* assessed the efficacy of the cephalosporin cefotaxime as an antibiotic lock in preventing TCC-related infection and thrombosis in hemodialysis patients with diabetes.

The 96 patients enrolled in the study were randomly allocated to one of two groups; 49 patients (51 TCCs) received a catheter lock composed of 10 mg/ml cefotaxime and 5,000 U/ml heparin, and 47 patients (58 TCCs) received a standard heparin solution. The cefotaxime group had higher thrombosis-free (86.3% vs 63.8%; $P = 0.023$), infection-free (72.9% vs 27.1%; $P = 0.004$) and thrombosis-free and infection-free (78.4% vs 37.9%; $P = 0.001$) TCC survival than the heparin-alone group. The rate of catheter-related bloodstream infections (CRBSIs) was considerably lower in the cefotaxime group (1.56 vs 3.68 episodes per 1,000 catheter days; $P < 0.0001$), as was mortality from CRBSI (9.8% vs 23.4%; $P = 0.015$). Cefotaxime was more effective against Gram-negative bacilli than against Gram-positive bacteria; of the 29 incidents of CRBSI in the cefotaxime group, 19 were caused by Gram-positive organisms.

The authors conclude that cefotaxime is effective in preventing bacterial infections and related thrombosis in TCCs of patients with diabetes. Although no resistance to cefotaxime was observed in this study, longer-term trials are required to assess the risk of the development of microbial strains resistant to this cephalosporin.

Original article Saxena AK *et al.* (2006) Tunneled catheters' outcome optimization among diabetics on dialysis through antibiotic-lock placement. *Kidney Int* **70:** 1629–1635

Failure to meet targets compromises outcomes of long-term hemodialysis

Since 1994, the Centers for Medicare & Medicaid Services have conducted a national program to promote adherence to guidelines for the care of patients receiving dialysis. In a retrospective study of over 15,000 patients on long-term hemodialysis from 2,668 dialysis centers, however, Rocco *et al.* report a surprising failure of the centers to meet recommended targets, and a strong relationship between this inadherence and high hospitalization and mortality rates.

During the 12-month study period, 8,364 (54.7%) patients were hospitalized and 3,062 (20.0%) died. Of the four therapeutic targets analyzed—dialysis adequacy, fistula for vascular access, anemia and serum albumin level—69% of patients failed to meet more than two, and only 7% met all four. The risk of hospitalization or death increased with every additional guideline indicator that was not met in the previous year; unadjusted hospitalization rate ranged from 43% in those meeting four targets to 60% in those meeting no targets, while unadjusted mortality rates ranged from 7% (four targets) to 29% (no targets). The hazard ratio for death increased significantly by 70–90% for each indicator that was not met ($P < 0.001$), while the hazard ratio for hospitalization increased by 10–30%. The authors comment that there is room for improvement in both individual patient care and the methods used to optimize clinical outcomes.

Original article Rocco MV *et al.* (2006) Relationship between clinical performance measures and outcomes among patients receiving long-term hemodialysis. *Ann Intern Med* **145:** 512–519

Oral hygiene of pediatric renal transplant recipients is improved by sonic toothbrushing

Drug-induced gingival overgrowth (DIGO) is an adverse effect of the immunosuppressant ciclosporin in pediatric renal transplantation. DIGO can cause oral disease, but might also lead to low patient self-esteem, increasing the likelihood of nonadherence to ongoing ciclosporin treatments. Smith *et al.* assessed whether the use of a powered toothbrush contributed to control of DIGO in children who had received renal transplants.

The randomized, single-blind, controlled trial evaluated 23 patients at 3-month intervals using a combination of dental impressions and photographs. Fifteen patients—eight in the treatment group and seven in the control group—presented with DIGO at baseline. After