compared with 12.5% in patients who did not receive ART ($n=10$; $P<0.05$). At 2,962 days, renal survival was 18.1% for ART-treated patients and 12.5% in the non-ART group ($P=0.025$). Median time to kidney failure was 552 days in the ART group, compared with 117 days in the non-ART group. Risk of progression to end-stage renal disease was significantly lower for patients treated with ART than for those who did not receive ART (adjusted hazard ratio 0.30; $P<0.05$). A trend towards improved renal survival was observed in patients who commenced ART within 3 months of renal biopsy, and for those in whom complete virological suppression was achieved.

Previous studies have indicated that viral gene expression is a direct cause of HIVAN. The authors suggest that ART might exert its positive effect on HIVAN by inhibiting viral replication in the kidney, and recommend that HIVAN should be considered an indication for ART.

**Original article** Atta MG *et al.* (2006) Antiretroviral therapy in the treatment of HIV-associated nephropathy. *Nephrol Dial Transplant* **21:** 2809–2813

## Study provides strong support for association between cancer and membranous nephropathy

Adult-onset nephrotic syndrome is frequently caused by membranous nephropathy (MN). Although several studies have indicated that cancer might cause secondary MN, this relationship has not been validated by comparison of the observed cancer incidence in an MN population with that expected from general population data.

To address this issue, Lefaucheur *et al.* examined the association of cancer with MN in a cohort of 240 patients with MN. Twenty-four of the participants had cancer at the time of renal biopsy or were diagnosed with malignancy within the following year, revealing a higher incidence of cancer—primarily carcinoma of the lung or prostate—in the MN population than in the general population (standardized incidence ratio 9.8 for men and 12.3 for women). In the MN population, older patients and heavy smokers were more likely to be diagnosed with cancer. Patients with cancer-associated MN had a significantly higher number of inflammatory cells infiltrating their glomeruli than did those with idiopathic MN ($P=0.001$); the researchers calculate that eight cells per glomerulus is the best cutoff value for this novel predictive marker to distinguish cancer-associated MN from idiopathic MN (specificity 75%, sensitivity 92%).

Patients with an estimated glomerular filtration rate ≥15 ml/min/1.73 $m^2$ were significantly less likely to survive if they had cancer ($P<0.001$); 44% of deaths in this group were secondary to neoplasia. A positive correlation was found between remission of cancer and remission of nephrotic syndrome, indicating a causal relationship between nephrotic-range proteinuria and carcinoma.

**Original article** Lefaucheur C *et al.* (2006) Membranous nephropathy and cancer: epidemiologic evidence and determinants of high-risk cancer association. *Kidney Int* **70:** 1510–1517

## Fosinopril could reduce cardiovascular events in end-stage renal disease

Cardiovascular events (CVEs) cause substantial mortality and morbidity in patients with end-stage renal disease (ESRD). Angiotensin-converting-enzyme inhibitors, such as fosinopril, have proved to be both well-tolerated and efficacious for the prevention of CVEs in a range of clinical trials, yet these trials have tended to exclude patients with ESRD. This double-blind, multicenter, randomized controlled study assessed the safety and efficacy of fosinopril in 397 ESRD patients who were on hemodialysis and who had left ventricular hypertrophy.

The primary end point of the study was the occurrence of a first major CVE within the 2-year study period. After adjustment for baseline characteristics, the authors identified a nonsignificant trend towards lower incidence of CVEs in the fosinopril-treated group (dose titrated to 20 mg/day) than in the placebo group (relative risk 0.80, 95% CI 0.59–1.10; $P=0.099$). Results also indicated that treatment with fosinopril might be of benefit for the subset of patients with hypertension; these patients exhibited an improvement in blood pressure during the 24-month study (relative risk 1.85, 95% CI 1.18–2.89; $P=0.008$). Fosinopril-treated subjects were more likely to suffer adverse gastrointestinal events, but the drug did not increase the rate of hyperkalemia.

At 32.7%, the CVE rate was lower than anticipated, and consequently the study was underpowered to detect a significant association between treatment with fosinopril and reduced risk of CVEs. Zannad *et al.* suggest that a further study of approximately 1,000 patients would have sufficient power to confirm both the efficacy and the favorable safety profile of fosinopril in patients with ESRD.

**Original article** Zannad F *et al.* (2006) Prevention of cardiovascular events in end-stage renal disease: results of a randomized trial of fosinopril and implications for future studies. *Kidney Int* **70:** 1318–1324

## Comparing management models for tunneled-cuffed-catheter-related bacteremia

Bacteremia is a major cause of morbidity and mortality in patients with tunneled cuffed catheters (TCCs), but management of this complication varies widely among nephrologists. Mokrzycki *et al.* compared two different management models, the collaborative team model—in which an infection manager (a registered nurse) works closely with nephrologists and dialysis staff to manage TCC-related bacteremia on the basis of the available guidelines—and the physician-managed model.

During the first 6 months of the study, baseline data were collected from seven outpatient long-term hemodialysis centers regarding physician-managed episodes of TCC-associated bacteremia. After 6 months, four centers were randomly assigned to collaborative-team management and three centers were assigned the physician-managed model.

In total, 223 first episodes of TCC-associated bacteremia were included in the study: 57 episodes that occurred during the 6-month prerandomization observation period and 166 episodes that occurred during the subsequent 2-year postrandomization period (55 episodes in physician-managed patients, and 111 episodes in patients managed by collaborative teams). Patients in whom TCC-related bacteremia was managed by a collaborative team were significantly less likely than those in physician-managed centers to experience recurrent bacteremia with the same organism ($P = 0.015$) or septic death ($P = 0.047$). Collaborative-team management of TCC-associated bacteremia was also associated with a 45% decrease in the use of TCC salvage in the post-randomization period compared with the observation period, and was associated with improvements in antibiotic selection, duration of administration and dosing.

**Original article** Mokrzycki MH *et al.* (2006) An interventional controlled trial comparing 2 management models for the treatment of tunneled cuffed catheter bacteremia: a collaborative team model versus usual physician-managed care. *Am J Kidney Dis* **48:** 587–595

## Low-dose gentamicin effectively prevents catheter-related bacteremia

Catheter-related bacteremia (CRB) causes considerable morbidity and mortality in hemodialysis populations. A catheter-lock solution of 40 mg/ml gentamicin plus citrate effectively prevents CRB, but ototoxicity is a concern at this concentration. Nori *et al.* evaluated the effectiveness of gentamicin at a concentration of 4 mg/ml against control solutions of standard heparin and of 3 mg/ml minocycline, which has previously demonstrated efficacy in CRB prevention.

The 62 hemodialysis patients (53 prevalent, 9 incident) enrolled in the open-label study were evenly randomized between the gentamicin plus citrate, minocycline plus edetic acid (EDTA), and heparin groups. All patients used tunneled cuffed catheters. At 6 months, seven patients in the heparin group had developed CRB, compared with one patient in the minocycline group ($P = 0.02$) and no patients in the gentamicin group ($P = 0.008$). The observed efficacy of gentamicin led to early termination of the study. Catheter vintage had no effect on CRB rate, indicating that use of antibiotic-lock solutions need not be limited to newly inserted catheters. Four deaths occurred; none was CRB related.

The authors conclude that low-dose gentamicin effectively prevents CRB, and is preferable to minocycline on the basis of cost. The short follow-up periods of this and other studies of antibiotic catheter locks, however, do not allow conclusions to be drawn regarding potential long-term problems such as antibiotic resistance.

**Original article** Nori US *et al.* (2006) Comparison of low-dose gentamicin with minocycline as catheter lock solutions in the prevention of catheter-related bacteremia. *Am J Kidney Dis* **48:** 596–605