

order to better understand the pathogenesis of UTI and renal scarring.

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Pharmacologic intervention to prevent hemodialysis vascular access thrombosis: The next generation of treatment?

To the Editor: We would like to extend our congratulations to Dr. Masaki et al [1] for their excellent work. Their delivery system offers great promise for evaluation of drugs for the local use of antineoplastic drugs, like paclitaxel in the prevention of intimal hyperplasia in hemodialysis vascular accesses. We would like to note, however, that there are many more classes of drugs that might be beneficial other than strictly antiproliferative drugs [2]. Drugs that improve endothelial function, antimigratory agents, as well as those that affect the glycocalyx formation should be studied. Even among antiproliferative drugs, we found that systemic administration of non-antineoplastic antiproliferative drugs like angiotensin-converting enzyme (ACE) inhibitors seemed to be of most benefit in grafts (as Dr. Masaki notes), while antineoplastic antiproliferative agents such as paclitaxel seemed of most benefit in endogenous fistulas [3]. A more recent multicenter study [4] confirmed the beneficial properties of ACE inhibitors. Certainly, if antineoplastic agents are proven to be the most beneficial agents for survival in all vascular accesses, then a local delivery system such as described by Dr. Masaki would be a great advance; however, there is such potential myocardial benefit to the systemic use of ACE inhibitors in patients with ischemic heart disease or cardiomyopathies that systemic administration may prove simpler, more beneficial, and cost effective. Nevertheless, we see Dr. Masaki's work as a great advance, and we applaud their continued efforts.

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Locking hemodialysis catheters with cefotaxime instead of gentamicin to avoid potential ototoxicity

To the Editor: McIntyre et al compared gentamicin (5 mg/mL) and heparin-locked, tunneled hemodialysis catheter group with that of catheter-restricted filling of standard heparin (5000 IU/mL) alone; gentamicin-locked group recorded significantly lower catheter-related bloodstream infections (CRBSI) episodes compared with heparin group (0.3/1000 vs. 4/1000 catheter days, $P = 0.02$) [1].

Dogra et al observed significantly lower incidence of CRBSI (0.03 vs. 0.42 per 100 catheter days, $P = 0.003$), and considerably higher mean infection-free catheter survival in the gentamicin group (catheter-restricted filling of gentamicin/citrate, 40 mg/mL, and 3.13% citrate) compared with heparin group (282 days vs. 181 days, $P = 0.002$). However, authors cautioned to establish the safety of 'locked' dose of gentamicin for ototoxicity before the technique was adopted because predialysis plasma gentamicin levels were significantly higher in patients randomized to gentamicin group compared with heparin group (2.8 mg/L vs. <0.2 mg/L, $P = 0.008$) [2].

In view of recently reported ototoxicity [3, 4] regardless of reasonably lower amount of aminoglycosides being used for 'locking' catheters, a prospective case-controlled study was carried out at our center using cefotaxime (10 mg/mL) in combination with heparin (5000 U/mL) to examine the lock's efficacy in the prevention of CRBSI [5]. Cefotaxime was chosen because of its broad antimicrobial spectrum and lack of ototoxic potentials. The 'lock' was applied two/three times a week postdialysis. A significant relative-risk reduction in the incidence of HD-tunneled catheter thromboses (1.340–4.701, $P = 0.003$), CRBSI-incidence (3.086–6.430, $P < 0.0001$), and CRBSI-related mortality (1.517–5.864, $P < 0.001$) was

Table 1. The outcome of locking tunneled hemodialysis catheters with cefotaxime and heparin in terms of catheter thrombosis, CRBSI incidence, and CRBSI-related mortality (July 2002–June 2003)

Tunneled HD catheter events	Control group (<i>N</i> = 19) (heparin alone, 6935 catheter days) <i>N</i> , total, %	Study group (<i>N</i> = 67) (cefotaxime + heparin, 24,455 catheter days) ^a <i>N</i> , total, %	Relative-risk reduction (%), 95% CI, <i>P</i> value
Catheter thromboses	6/19 (31.5)	9/67 (13.4)	57.3%, 1.340-4.701, 0.003
CRBSI episodes	17/19 (2.45/1000 catheter-days)	14/67 (0.57/1000 catheter-days)	76.7%, 3.086-6.430, < 0.0001
CRBSI-related mortality	5/19 (31.6)	7/67 (10.4)	67.1%, 1.517-5.864, < 0.001

95% CI, 95% confidence interval; CRBSI, catheter-related blood-stream infections.

^aCefotaxime-heparin 'lock' solution composition, cefotaxime 10 mg/mL, heparin 5000 U/mL (to fill 1.3 mL in venous and 1.2 mL in arterial lumen of the catheter with combined volume of approximately 2.5 mL containing total of 25 mg of cefotaxime).

observed in 'locked' group compared with control group (Table 1).

Thus, locking HD catheters with cefotaxime may evenly reduce the risk of development of CRBSI besides minimizing the odds of aminoglycoside-associated ototoxicity.

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The differential impact of risk factors on mortality in hemodialysis and peritoneal dialysis

To the Editor: In the article by Vonesh *et al* [1], discrepancies in survival on different treatment modalities for different patient groups is described in a large cohort of patients. Although a considerable number of comorbidity conditions were included for this variable, I feel that a major variable (*i.e.*, the failed transplant recipi-

ent returning to dialysis) should have been included, or preferably should have been added as a separate risk factor for mortality in dialysis patients.

These patients are at high risk for premature death, excluding death within the first 90 days after starting dialysis, especially when they continue even low dose immunosuppressive medication during dialysis [2, 3]. Furthermore, these patients generally start on hemodialysis during the first period after transplant failure (*i.e.*, the first year after graft failure). This would negatively influence the outcome for this treatment modality as compared to peritoneal dialysis with regard to mortality, and would, therefore, be another plausible explanation for the high initial mortality associated with hemodialysis found in this study.

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Prevention of renal cell carcinoma from hemodialysis patients by regulating epigenetic factors

To the Editor: Long duration of patients on hemodialysis induces an increased incidence of renal cell carcinoma