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Synopsis from the article: Bernardini J, Bender F, Florio T, Sloand J, PalmMontalbano L, Fried L, Piraino B. Randomized Double Blinded Trial of Antibiotic Exit Site Cream for Prevention of Exit Site Infection in Peritoneal Dialysis Patients. *Journal of American Society of Nephrology* 2005; 16: 539-45.

Infections in dialysis patients remain a leading cause of morbidity and mortality in both hemodialysis (HD) and peritoneal dialysis (PD) patients. In both groups of patients the infection is often related to the dialysis access. Hemodialysis patients are at risk for access-related bacteremia while PD patients are at risk for peritonitis, which is sometimes related to the presence of the PD catheter. Prevention of such infections is a major focus of research in both HD and PD patients.

A double-blinded, randomized trial was done at three centers to compare two methods of decreasing PD catheter infections: mupirocin cream versus gentamicin cream, applied daily to the PD catheter exit site as part of routine care. One hundred and thirty three PD patients participated in the study.

Catheter infection rates were 39% lower in the patients using the gentamicin cream compared to the mupirocin cream, a difference that was highly significant and important. The patients using gentamicin cream at the exit site had no *P. aeruginosa* catheter infections and only infrequent infections with *S. aureus*. The incidence of gram-negative peritonitis was much lower in the group using gentamicin compared to mupirocin (0.02/year versus 0.15/year, $p=0.003$), resulting in a lower overall rate for peritonitis. Controlling for center and incident versus prevalent patients, gentamicin exit site use was associated with a 48% decreased risk of peritonitis.

In conclusion, gentamicin cream applied daily to the peritoneal catheter exit site was associated with a reduced risk of both PD catheter-related exit site infection and peritonitis. Since gentamicin cream is inexpensive and the protocol is easy to implement, this is a practical method to lower a program's infection rates in PD patients. Local application should result in minimal systemic absorption. Reduction of gram-negative peritonitis would thus lower the exposure to potentially nephrotoxic drugs.

Commentary by Todd S. Ing, MD

Dr. Bernardini and colleagues demonstrated that the application of topical gentamicin cream to the exit site can reduce the incidence of gram-negative peritonitis in peritoneal dialysis patients. As a result, the need to use nephrotoxic antibiotics is minimized, thus allowing residual renal function to be better preserved.