Abstract:

Aim and background: Central venous catheter (CVC)-related blood stream infection is a major cause of morbidity and mortality in patients with end-stage renal diseases. However, CVCs are quite frequently required for vascular access in hemodialysis (HD) patients. Tunneled catheters (TCs) are widely used when a catheter is needed for a long period. However, long-term catheter survival is limited by TC-related infections. The purpose of this prospective study was to assess clinical outcomes of prophylactic antibiotics administration prior to insertion of TCs in HD patients.

Material and methods: Sixty uremic patients who required TC insertion due to vascular access failure were included in our study between April 2009 and April 2010. Patients were randomized into two groups: group I and group II. Group I received 1 g of cefazolin sodium intravenously 1 h prior to catheter insertion. Group II received equal amount of saline intravenously 1 h prior to catheter insertion. The primary end points of the study were catheter loss, hospitalization, or mortality due to catheter-related infections (CRIs). The secondary end points included exit-site infection (not requiring hospitalization), tunnel infections (not requiring catheter removal), and bacteremia.
Results: During the follow-up period, one patient in group I and three patients in group II reached primary end point (p < 0.05). Catheter loss due to infection was higher in group II than in group I as 6 versus 3, respectively (p < 0.05). Catheter exit-site infections, which does not require hospitalization, have been considered as secondary end points and have been detected in four patients for 7 times in group I and in six patients for 10 times in group II (p < 0.05). Tunnel infection, which does not require removal of the catheter, has been detected in two patients for 3 times in group I and in five patients for 6 times in group II (p < 0.05).

Conclusion: The prophylactic antibiotic use prior to TC insertion significantly reduced CRIs, bacteremia, and catheter loss.