

# Taurolidine-based catheter lock regimen significantly reduces overall costs, infection, and dysfunction rates of tunneled hemodialysis catheters

Wolfgang Winnicki<sup>1</sup>, Harald Herkner<sup>2</sup>, Matthias Lorenz<sup>3</sup>, Ammon Handisurya<sup>1</sup>, Željko Kikić<sup>1</sup>, Bernhard Bielez<sup>1</sup>, Benjamin Schairer<sup>1</sup>, Thomas Reiter<sup>1</sup>, Farsad Eskandary<sup>1</sup>, Gere Sunder-Plassmann<sup>1</sup> and Guerkan Sengoelge<sup>1</sup>

<sup>1</sup>Division of Nephrology and Dialysis, Department of Medicine III, Medical University of Vienna, Vienna, Austria; <sup>2</sup>Department of Emergency Medicine, Medical University of Vienna, Vienna, Austria; and <sup>3</sup>Dialysis Centre Vienna, Vienna, Austria

Catheter-related infections and dysfunction are the main catheter complications causing morbidity and mortality in hemodialysis patients. However, there are no consistent data for the choice of catheter lock solutions for tunneled hemodialysis lines. In this prospective, multicenter, randomized, controlled trial, two lock regimens using three commercial catheter lock solutions were compared in 106 hemodialysis patients with a newly inserted tunneled central catheter. In the taurolidine group, TauroLock™-Hep500 was used twice per week and TauroLock™-U25,000 once a week. In the citrate group, a four percent citrate solution was used after each dialysis. Both groups were compared regarding catheter-related infections, catheter dysfunction, and costs. Over a period of 15,690 catheter days, six catheter-related infections occurred in six of 52 patients in the taurolidine group, but 18 occurred in 13 of 54 patients in the citrate group, corresponding to 0.67 and 2.7 episodes of catheter-related infections per 1000 catheter days, respectively (Incidence Rate Ratio 0.25, 95% confidence interval, 0.09 to 0.63). Catheter dysfunction rates were significantly lower in the taurolidine group (18.7 vs. 44.3/1000 catheter days) and alteplase rescue significantly more frequent in the citrate group (9.8 vs. 3.8/1000 catheter days). These differences provided significant catheter-related cost savings of 43% in the taurolidine group vs. citrate group when overall expenses per patient and year were compared. Thus, use of taurolidine-based catheter lock solutions containing heparin and urokinase significantly reduced complications related to tunneled hemodialysis catheters when compared to four percent citrate solution and was overall more cost-efficient.

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**KEYWORDS:** catheter dysfunction; catheter-related infection; hemodialysis; taurolidine; tunneled catheter; urokinase

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**Correspondence:** Guerkan Sengoelge, Division of Nephrology and Dialysis, Department of Medicine III, Medical University of Vienna, Vienna, Austria. E-mail: [guerkan.sengoelge@meduniwien.ac.at](mailto:guerkan.sengoelge@meduniwien.ac.at)

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