

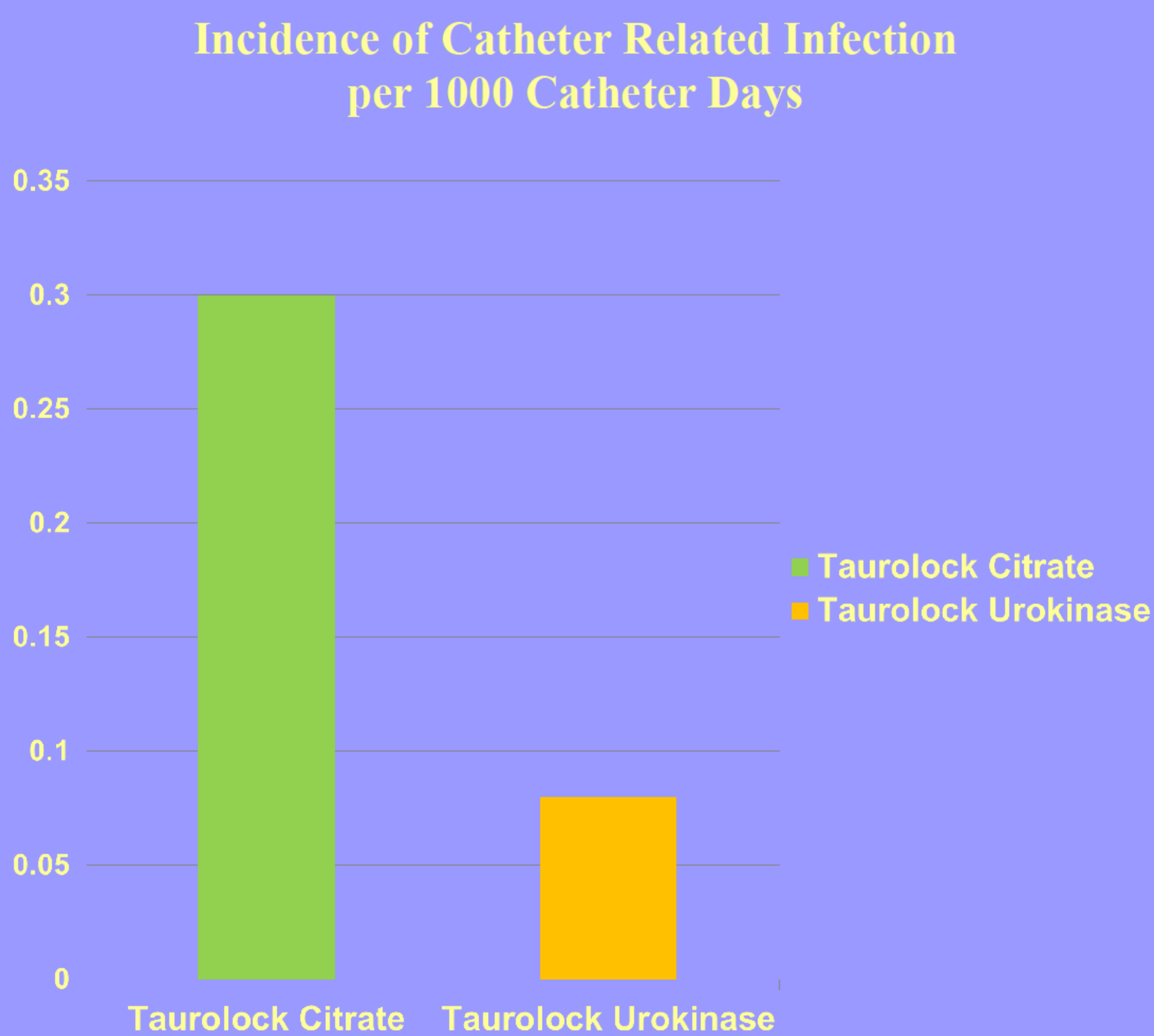
# A Randomized Controlled Trial of Taurolidine citrate versus Taurolidine Urokinase Lock to Prevent Catheter Related Infection in Hemodialysis Patients

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## OBJECTIVES

The use of tunneled catheters in hemodialysis is one of the leading causes of morbidity and mortality among dialysis patients. The prevalence of catheter related infection (CRI) range from 2.5 to 5.5 incidence/1000 catheter days, or 0.9 to 2 episode/patient/year. There is an increased relative risk for infection-related hospitalization and death by 2-3 folds in dialysis patients using catheters compared with those using fistula or graft. Efforts has been done to prevent and decrease the incidence of CRI. Taurolidine citrate is a novel antibacterial agent that showed promising results to prevent CRI when used as locking agent. We did comparative study using Taurolidine citrate with heparin (Taurolock/Hep) as a catheter lock solution versus Taurolidine citrate with Urokinase (Taurolock/U) in regard to prevention of CRI.



## CONCLUSIONS

In a study to compare Taurolock/Hep to Taurolock/U, both showed reduction in CRI well below the conventional recommendation. There was a decreased incidence of CRI in Taurolock/U group versus the Taurolock/Hep group although statistical significance could not be established due to low number of events in both groups. This result support recent study showing prevention of CRI with recombinant tissue plasminogen activator catheter (rt-PA) lock (1). The use of Urokinase in addition to Taurolidine provides a safe, effective and a relatively cheap tunneled catheter lock solution with significant reduced incidence of CRI.

## METHODS

This is a prospective randomized controlled trial that included all patients who were undergoing ambulatory regular hemodialysis in Qatar with tunneled catheter. All patients were randomized to receive Taurolock/Hep or Taurolock/U on 1:1 basis using computer-generated program. Patients were followed for 6 months. Episodes of CRI, catheter removal, time to removal and days of hospital stay related to CRI were estimated.

## RESULTS

One hundred seventy-seven patients participated, 30 patients did not complete the study (fistula cannulation, death, transferring to peritoneal dialysis) but were included in the final analysis. We had 93 Patients in Taurolock/Hep and 84 in the Taurolock/U. Age, sex, catheter age, blood flow rates and venous pressures before study, use of antiplatelet or warfarin and co-morbidities did not differ between the two groups. Four catheters were removed in Taurolock/Hep group due to CRI with mean time to removal of 170 +/- 71.5 days and length of stay in hospital 6.2 +/- 4.5 days. One catheter was removed in Taurolock/U group with time to removal of 62 days and hospital stay of 5 days. CRI rate was 0.3 incidence/1000 catheter days in the Taurolock/Hep group versus 0.08 incidence/1000 catheter days in the Taurolock/U. There were no reported serious adverse events or bleeding related to locking solution during the study.

## REFERENCES:

1- Brenda R. Hemmelgarn, M.D., Ph.D., Louise M. Moist, M.D., et al: Prevention of Dialysis Catheter Malfunction with Recombinant Tissue Plasminogen Activator N Engl J Med 2011;364:303-12.

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