



AMERICAN NEPHROLOGY NURSES' ASSOCIATION

**ANNA'S 43<sup>RD</sup> NATIONAL SYMPOSIUM**

**APRIL 29-MAY 2, 2012**

**WALT DISNEY WORLD DOLPHIN, ORLANDO, FL**

**Urokinase for Treatment of Thrombosis-Related Dysfunction Of Tunneled Hemodialysis Catheters:  
A Single-Centre Retrospective Comparison of 30 Minute Pre-Dialysis Thrombolysis  
with a Prolonged Lock Procedure**

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**Background:** Dysfunction of tunneled central venous hemodialysis catheters (HDC) is an important cause of inadequate dialysis and ultimately catheter removal. Thrombolytic therapy with urokinase has been shown to restore catheter function but there is no consensus on the optimal duration of thrombolysis.

**Methods:** We retrospectively compared 2 protocols used for thrombolysis of dysfunctional HDC in our department between May 2010 and October 2011. Causes of HDC dysfunction unrelated to thrombosis such as malpositioning or kinking were excluded from the analysis. Urokinase (Actosolv®) at the concentration of 16666 IU/ml was used to fill both lumens of the catheter for 30 minutes (short protocol) or until the next dialysis session (lock procedure).

**Results:** 214 HDC dysfunctions were treated in 57 patients (median 3 per patient, range 1 to 11), with 82 short procedures, 117 lock procedures, 9 combined treatments and, 6 without precise record of the type of procedure. Reasons for thrombolysis were occlusion of the arterial line (34%), venous line (19%), dialyzer blood flow <250ml/min (83%), aspiration pressure <-250 mmHg (22%) or venous pressures >250 mmHg (22%). Thrombolysis restored catheter function with normal blood flow (>250 ml/min) in 154/214 treatments (72%; 95%CI 66% to 78%). Successful treatment was observed in 68% of the short and 76% of the long procedures (P=NS). Recurrence of catheter dysfunction was frequent and a short delay since the previous thrombolysis was a predictor for treatment failure (median of 14 days with treatment failure and 28 days with treatment success (P=0.01).

**Conclusion:** Our retrospective analysis confirms that thrombolysis with urokinase successfully reverses more than 70% of thrombosis-related catheter dysfunctions. The efficacy of a short 30 minute procedure before the dialysis session was equivalent to a lock procedure until the next dialysis session. Rapid recurrence of catheter thrombosis appears to be a predictor for treatment failure.

*Abstract selected for presentation at ANNA's 43rd National Symposium, Orlando, FL, 2012*