Arteriovenous fistula (AVF) thrombosis is a common complication in patients undergoing hemodialysis, and early intervention is required. Urokinase has been used as a thrombolytic agent for declotting the thrombosed access.” Wan et al (2019).

Abstract:

Arteriovenous fistula (AVF) thrombosis is a common complication in patients undergoing hemodialysis, and early intervention is required. Urokinase has been used as a thrombolytic agent for declotting the thrombosed access. However, the optimal route for infusing urokinase remains to be determined. In the present retrospective observational study, 49 patients who underwent local venous infusion and 57 patients with peripheral venous infusion of urokinase were included. A urokinase dosage of 300,000 U was administered until successful thrombolysis, which was a maximum of three times. Age, sex, period of dialysis, time of AVF placement, systolic and diastolic blood pressure and thrombus age were similar between the two groups. The efficacy of urokinase infusion via the two routes in resolving thrombosed AVFs, defined as successful fibrinolysis, and the safety, defined as the number of bleeding events, was compared. The cumulative thrombolysis success rate following three sessions of thrombolytic therapy in the local venous thrombolysis group was higher compared with that in the peripheral venous thrombolysis group (85.7 vs. 68.4%; P=0.04). The local thrombolysis group exhibited less ecchymosis (4.1 vs. 14.0%; P=0.07), epistaxis (2.0 vs. 10.5%; P=0.08) and gingival bleeding (4.1 vs. 19.3%; P=0.02) events compared with
the peripheral thrombolysis group. Further analyses demonstrated that systolic and diastolic
(OR=1.08; 95% CI, 1.02-1.14; P<0.05) blood pressure were protective factors, whereas
thrombus age (OR=0.91; 95% CI, 0.84-0.99; P<0.05) was a risk factor for thrombolysis
success among patients who underwent local thrombolytic therapy. Overall, the results
suggest that local venous infusion of urokinase is superior to peripheral venous infusion for
the treatment of patients with thrombosed fistulas.

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