



The aim of the present study was to investigate whether the rescue of thrombolysis with the recombinant tissue plasminogen activator (rt-PA) alteplase was an effective and safe therapeutic option in patients who did not respond to urokinase” Gong et al (2019).

Abstract:

The aim of the present study was to investigate whether the rescue of thrombolysis with the recombinant tissue plasminogen activator (rt-PA) alteplase was an effective and safe therapeutic option in patients who did not respond to urokinase. Between February 2016 and February 2017, 26 patients with deep venous thrombosis (DVT) underwent rescue thrombolysis with alteplase. Unsuccessful thrombolysis with urokinase was defined as a lack of improvement in the degree of thrombotic removal with a lysis rate <50% under one of the following three conditions: Two consecutive venography procedures, administration of >3 million units of total urokinase, or >7 days infusion duration. The thrombus score, lysis rate and post-thrombolysis safety of alteplase, following unsuccessful urokinase thrombolysis were all evaluated. At the end of the unsuccessful urokinase thrombolytic therapy, the mean duration of the perfusion was 6.09 ± 1.60 days, and the mean total dose was $(362.5 \pm 90.0) \times 10^4$ units. No significant difference was detected in the total thrombus score before (7.85 ± 2.40) and at the completion (6.19 ± 2.33) of urokinase thrombolysis ($P > 0.05$). The mean duration of perfusion was 3.36 ± 1.69 days, and the mean total infusion dose was 44.8 ± 22.6 mg for the rescue thrombolysis with alteplase. The mean thrombus score

decreased to 1.19 ± 2.10 at the completion of rescue thrombolysis. The alteplase post-thrombolysis scores were significantly decreased compared with those of urokinase thrombolysis ($P < 0.05$). There were 23 (88.5%) patients who achieved a successful lysis rate (grade II/III) following rescue thrombolysis with alteplase, and symptoms of swelling and pain in the affected limbs were significantly improved. Successful thrombolysis rates in patients in the acute (<14 days) and subacute (14-28 days) phases were high (93.3 and 81.8%, respectively; $P > 0.05$). No symptomatic pulmonary embolism or major bleeding occurred during rescue thrombolysis, but minor bleeding complications occurred in 4 cases (15.4%). In conclusion, rescue thrombolysis with alteplase led to an effective and safe outcome in patients with DVT who did not respond to initial thrombolysis with urokinase, and may be a valid and easy alternative treatment option.

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Reference:

Gong, M., Zhao, B., He, X., Gu, J. and Chen, G. (2019) Feasibility of low-dose infusion of alteplase for unsuccessful thrombolysis with urokinase in deep venous thrombosis. *Experimental and Therapeutic Medicine*. 18(5), p.3667-3674. doi: 10.3892/etm.2019.7938.

