

THE EFFECTS OF PLASMINOGEN ADDITION ON FIBRINOLYSIS WITH DIFFERENT r-tPA DOSES IN SYSTEMIC EMBOLISM RAT MODEL

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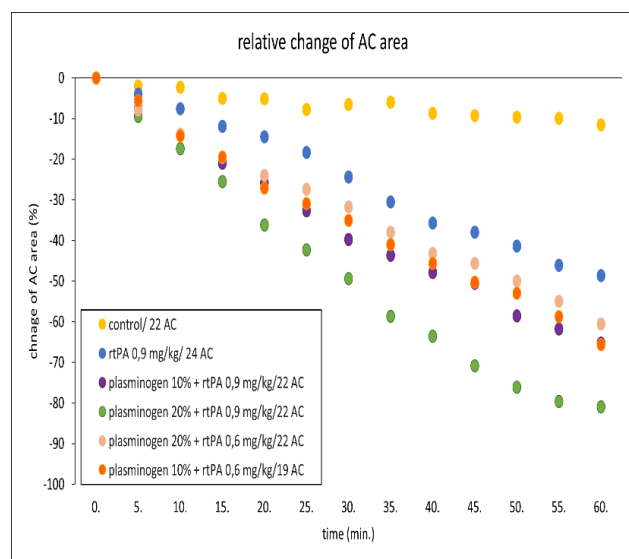
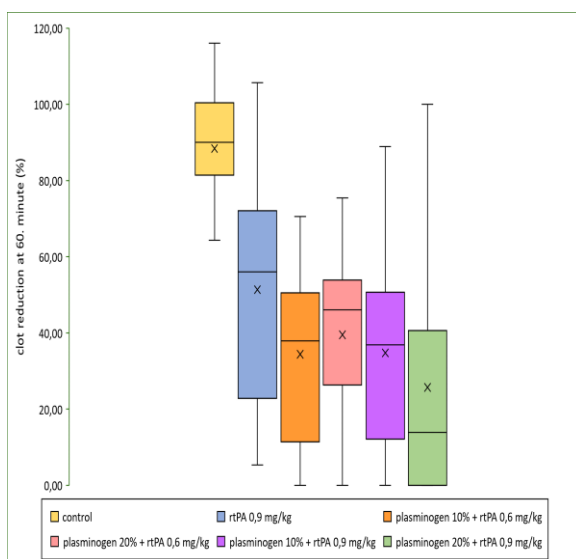
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Acute ischemic stroke and thromboembolic disorders are one of the most frequent causes of mortality and chronic health problems all over the world. For treatment of acute ischemic stroke, recombinant tissue plasminogen activators (r-tPA) are commonly used, and golden hour of treatment considered crucial. In addition to that, amount of plasminogen in blood, types of plasminogen and quantity of plasminogen inside fibrin complex can modify efficacy of r-tPA.

The aim of our study is evaluating the effects of 2 plasminogen (PLG) doses (4 or 8 mg/kg) addition with 2 r-tPA doses (0,6 mg or 0,9 mg/kg BW/hour) on fibrinolysis rate on *Wistar albino* rats. 65 animals were divided to 7 group as follows: Control (n=10), r-tPA 0,9 (n=10), r-tPA 0,9/PLG4 (n=10), r-tPA 0,9/PLG8 (n=10), r-tPA 0,6/PLG8 (n=10), r-tPA 0,6/PLG4 (n=9) and r-tPA 0,9/PLG4 (n=6) infusion 60 min. before r-tPA administration. Artificial clots (AC) based on human fibrin were labelled for optimal X-ray visualisation with BaSO₄. Systemic embolism induced with injection of ACs from common carotid artery to aortic arch in all animal groups retrogradely. For fluoroscopic visualisation we used Bench-Top LabScope™ X-ray device for imaging ACs inside the branches of abdominal aorta. Radiographs during first hour of drug infusion were recorded every five minutes. Degradation of thrombi and relative change of AC area in radiographs were measured using ImageJ. After the first hour of infusion, blood samples were collected for measurement of plasminogen/plasmin ratio.

Experimental outcomes demonstrated that the addition of PLG improves thrombolysis at both r-tPA concentrations but non-significant in each group. In r-tPA 0,9/PLG8 group, lysis rate (mean value+-SD -0,5558 ± 0,1503) and AC shadow area change (mean value+-SD -32,33 ± 7,684) were significantly higher in 60 minute of protocol in comparison with r-tPA group.



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