

2nd International Conference in Pharmacology: From Cellular Processes to Drug Targets Rīga, Latvia, 19–20 October 2017

MEETING ABSTRACT

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Results of screening of new salts of 7-thietanyl-3-propyl-xanthine derivatives on platelet aggregation under conditions *in vitro*

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Background: Preventing and control of bleeding is important in various areas of clinical medicine in the light of increasing numbers of patients with hemorrhagic manifestations, extensive use of anti-coagulants, increasing number of invasive diagnostic and treatment methods [1,2]. However, the drugs traditionally used in medical practice to control bleeding are often inefficient and unable to lead to effective reduction of blood loss.

Objectives: We have studied the influence of 25 firstly synthesized derivatives of 7-thietanyl-3-propylxanthine and medically applied therapeutic agents on the hemostasis system under conditions *in vitro* with donated human blood [3,4].

Methods: Experimental work was done *in vitro* with the blood of healthy male donors. The impact of firstly synthesized derivative xantine, aspirin and etamsylate on the functional activity of platelets under conditions *in vitro* was studied with the help of a laser analyzer of platelet aggregation Biola 230 LA (Russia). Adenosine diphosphate of 20 µg/ml exposure and collagen of 5 µg/ml exposure were used as an aggregation inducer, produced by Technology-Standard company in the city of Barnaul, Russia. Thrombelastography (TEG 5000, Haemoscope Corporation, USA) was performed in accordance with instructions of the manufacture and performed within 1 h of blood sampling. TEG parameters of reaction time, angle and maximal amplitude and conventional coagulation data of platelet count.

Results: We have defined different influence of the studied compounds on functional activity of platelets. The lithium salt of 2-[1,3-methyl-7-(dioxothietanyl-3)xanthinyl-8-thio]acetic acid shows hemostatic activity, which exceeds levelwise that of etamsylate.

Conclusions: The findings prove that it is necessary and up-to-date to continue research of this number of derivatives influencing the hemostasis system as potential antiplatelets and hemostatic agents.

Keywords: xanthine derivatives – hemostasis – thrombelastography

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