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Testing platelet aggregation activity

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ABSTRACT

Aggregatometry is based on the ability of platelets to activate and form cell aggregates under the influence of inductors. During the analysis, changes in the light transmission of platelet-rich plasma are recorded as a result of the interaction of platelets through the IIb / IIIa glycoprotein receptors in response to stimulation by the inducer. The work of optical aggregometer is based on this principle. When assessing platelet aggregation according to G. Born and J. O'Brien, platelets are activated at 37°C by adding one of the agonists (1,2). Then, platelet aggregation occurs and transparency in the blood sample increases, which leads to an increase in the aggregation curve.

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1 Whole blood sampling

Blood sampling was performed in 12-48 hours after PCI in the morning on an empty stomach from the cubital vein into vacuum tubes with 3.8% sodium citrate (in a ratio of 9: 1) with short-term application of a tourniquet and with 0.8 mm. diameter needle. The blood samples were delivered to the laboratory within 20-30 minutes.

2 Platelet-rich plasma production

To obtain platelet-rich plasma, the test tube with blood was rotated on the OPn-3.02 "Dastan" centrifuge (Kyrgyzstan) at 1000 rpm within 10 minutes.

3 Platelet-poor plasma production

The tube with platelet-rich plasma was re-centrifuged at 3000 rpm for 15 minutes.

4 Determining residual platelet reactivity

The antithrombotic efficacy of antiplatelet agents was tested by an AggRAM Helena Biosciences Europe aggregometer using adenosine-5`-diphosphate (ADP) and epinephrine by *Tekhnologiya-Standard* inducer (Russia) at a dilution of 10 µg / ml and 2.5 µg / ml. respectively. The aggregation registration time was 10 minutes. The results of the study of platelet function were assessed by the maximum percentage of aggregation (max%) in response to stimulation with the inductor and the area under the aggregation curve (AUC – area under curve). Platelet-poor plasma was regarded as 100%, while platelet-rich plasma was taken as 0%.

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