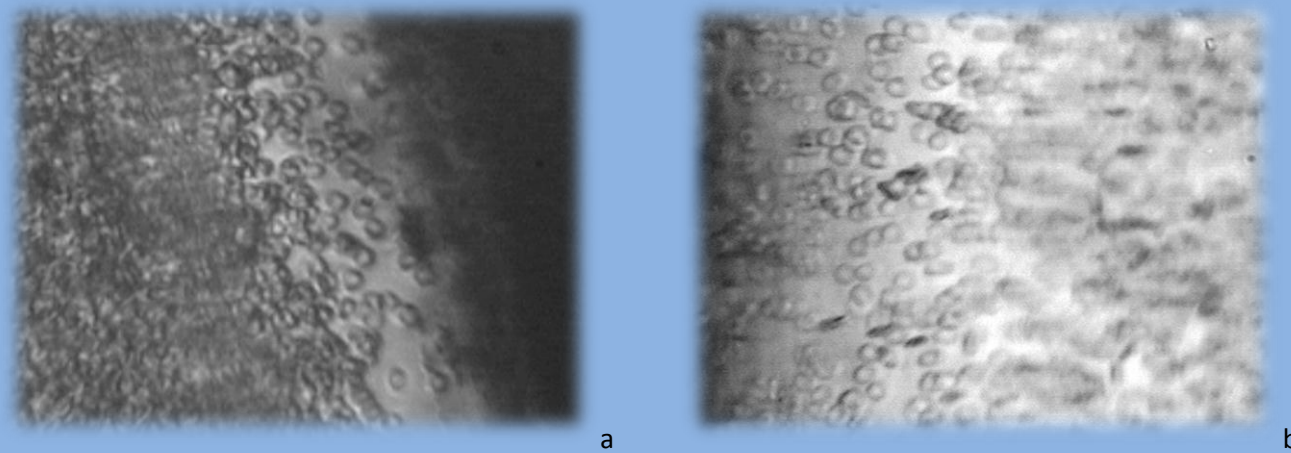


# Coronary atherothrombosis: blood coagulation activity within different types of blood flow patterns

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a

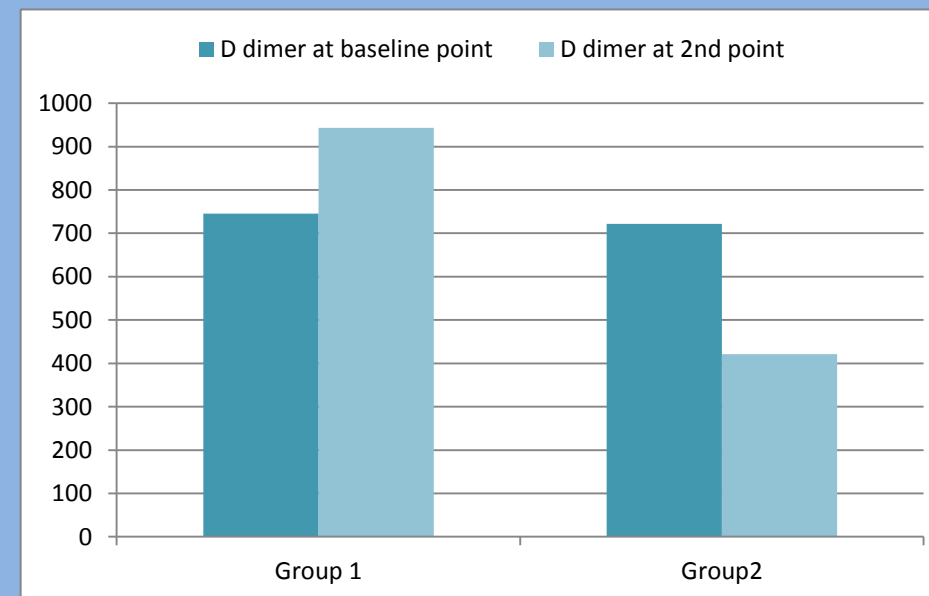
b

Two main types of blood flow pattern violations were detected: a - increased adhesiveness of blood cells to tube walls with peripheral blood flow zone velocity decrease, predominating of shear stress resistant erythrocyte aggregates, truncated erythrocyte aggregation in central layer; b – central blood flow zone linear velocity decrease, phenomena of microclots formation, predominating end-to-end erythrocyte aggregates

**Purpose.** To investigate the time course of D-dimer following acute coronary syndrome to blood flow pattern type.

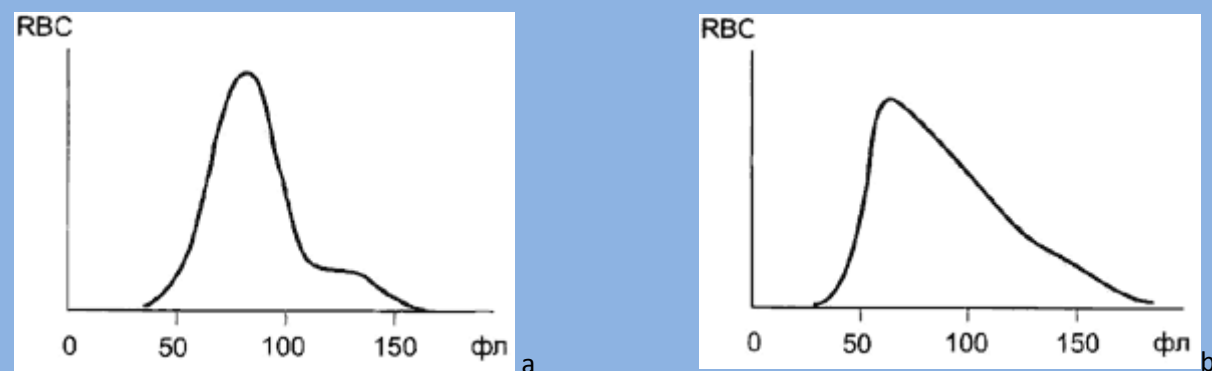
**Methods.** 41 men with ST-segment elevation myocardial infarction in age range from 40 up to 75 years old were included in the study

All patients were under standardized combined antithrombotic therapy according to national recommendations. Blood flow characteristics were studied in vitro at 1ml/h blood flow rate by means of PC integrated camera with after going slide by slide analysis.



D-dimer concentrations were estimated at 2-6 hour and 5-7 days after ACS manifestation points.

Within 7 days all patients were divided into two groups: group 1 - with significant D-dimer level reduction ( $p=0.004$ ) and group 2 - with incrementing D-dimer level ( $p = 0.029$ ).



Blood tests results. Red cell Distribution Width (RDW): a – normocytosis, b - macrocytosis

Patients with 1<sup>st</sup> type of blood flow pattern (minimal peripheral layer velocity, truncated erythrocyte aggregation in central layer) were notable for D-dimer level increase within 7 days through acute coronary syndrome and RDW augmentation.