MYOCARDIAL ISCHEMIA AND INFARCTION

INFLUENCE OF BIOCHEMICAL ASPIRIN-RESISTANCE ON PLATELET MORPHOLOGY AND FUNCTION IN PATIENTS WITH ACUTE CORONARY SYNDROME WITHOUT ST-SEGMENT ELEVATION

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Sunday, April 03, 2011, 10:00 a.m.-11:15 a.m.

Session Title: Acute Myocardial Infarction -- Antiplatelet Therapies
Abstract Category: 3. Acute Myocardial Infarction—Therapy
Session-Poster Board Number: 1005-323

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Background: To determine the effect of aspirin-resistance (AR) in patients with non ST elevation acute coronary syndrom (NSTACS) according to the data of platelet aggregation with arachidonic acid (AA) on parameters of platelet morphology using electron microscopy and aggregation with ADP.

Methods: In 140 patients NSTACS (age 57.3 +/-6.2 years, men 32.1%), who were regularly treated for >6 month by aspirin for secondary prevention and did not take nonsteroidal anti-inflammatory drugs, were evaluated the degree of platelet aggregation with AA in the concentration of 0.5 mg/ml and ADP at concentration of 5 mmol/l in the 1st day. Criteria for biochemical AR was induced platelet aggregation >20% of spontaneous level. Electron microscopic study of platelet venous blood was performed by transmission electron microscope PEM-125 K (X 9600) with the definition of morphometric parameters. For the analysis we used an average of 15 ± 1,2 platelets in each patient.

Results: AR according to the aggregation with AA was observed in 15 (10.7%) patients. The average aggregation with AA was 40,3±2,5% in patients with AR vs 29,5±1,5% in aspirin-responders (p<0.05). Patients with AR had an increase in residual aggregation with ADP over 70% compare with the baseline (40.3±2.5 % vs 29.5±1.5% in patients without AR, p<0.05), and correlation of the AA-aggregation to ADP-aggregation in this data comparison with the aggregation of AA (r = 0.513, p <0.05). Patients with and without AR had the same number of platelets in venous blood (264,6±1,4 vs 259,9±0,2 x10^12/l, p <0.05). Platelets of AR patients differed greater average area (21,65 ± 1,06 and 16,86 ± 1,23 um^2, respectively, p<0.05), numerical density of granules in AR platelets, which were significantly higher than in the group without resistance (19,80 ± 0,93 vs 14,31 ± 0,79 x10^-2/ mkm^3, respectively) (p <0,001) and volume density of granules (23,84 ± 1,74% vs 18,68 ± 0,79% p <0,001).

Conclusions: Plateletes NSTACS resistant to aspirin have greater average size and granules that is associated with initially higher aggregation not only with AA, but with ADP.