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#188 - EFFECTS OF ENDOTOXIN ACTIVITY ON PLATELETS FUNCTION AND COAGULATION IN SEPTIC PATIENTS

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Description

Introduction: Platelets and coagulation system are fully activated in sepsis. Hypothesis: We have presumed a correlation between endotoxin activity levels and the alterations of coagulation parameters in septic patients. Methods: We have studied 9 patients admitted to ICU with a severe sepsis/septic shock diagnosis. After written informed consent three peripheral blood samples were collected respectively from each patient, at the admission, on the 3rd and the 7th day of ICU stay. The EAA (Endotoxin Activity Assay) was performed on the sample. At the same time, platelets count, TEG test, PAI-1, vonWillebrand, factor VII, factor VIII, AT-III, fibrinogen, D-dimer measuring and arachidonic acid-induced platelets aggregation tromboelastographic test were performed with the aim of finding a significant correlation among these parameters - which were also related to overall mortality at the 28th day after the ICU admission. Non-parametric analysis has been used to process our data -Wilcoxon test and Mann-Whitney test for independent data and for paired data, respectively- and regression lines between EA and other data have been calculated. Results: Our data show a decrease of AT-III activity (mean 77,13 - range 49-105 - n.v. 80-120) and of TEG C.I. (mean -3,43 - range -8,1-1,8 - n.v. -3 - 3), and an increase of D-dimer levels (mean 2,39 - range 0,2-10,13 - n.v. 0,22-0,74), supporting the hypothesis of coagulation activation up to non-overt DIC. Patients affected by thrombocytopenia at the admission have a 50% death rate, while non-thrombocytopenic patients have a 20% death rate. TEG C.I. rises from 1st to 3rd day ($p=0,016$), more in survived patients than in non-survived patients (mean 4,48 vs. 0,95). In the whole sample, factor VII levels are correlated to EA ($R=0,78$). In the same patient, AT-III variations are highly and negatively correlated to EA variations ($R=0,98$). Conclusions: Hemostasis is activated up to non-overt DIC in septic patients. Greater alterations in hemostatic parameters are correlated to higher mortality rates. EA seems to directly affect coagulation abnormalities increasing factor VII levels and decreasing AT-III activity.

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