



Tissue Factor Pathway Inhibitor and P-Selectin as Markers of Sepsis-Induced Non-overt DIC

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Abstract:

Inflammation and coagulation occur concomitantly in sepsis. Thrombin activates platelet that leads to P-selectin translocation, which upregulate tissue factor (TF) generation. Tissue factor pathway inhibitor (TFPI) is an anticoagulant that modulates coagulation induced by TF. The term non-overt disseminated intravascular coagulation (DIC) refers to a state of affairs prevalent before the occurrence of overt DIC. It was suggested that an initiation of treatment in non-overt DIC has better outcome than overt DIC. This study investigated the role of TFPI level, P-selectin, and thrombin activation markers in non-overt and overt DIC induced by sepsis and its relationship to outcome and organ dysfunction as measured by the Sequential Organ Failure Assessment (SOFA) score. It included 176 patients with sepsis. They were admitted to the pediatric intensive care unit (ICU). They included 144 cases of non-overt DIC and 32 cases of overt DIC. There was a significant difference in hemostatic markers, platelet count, partial thromboplastin time (PTT), P-selectin, thrombin activation markers, TFPI, and DIC score between overt and non-overt DIC in both groups. It was noticed that P-selectin was positively correlated with DIC score, fibrinogen consumption, fibrinolysis (d-dimer), thrombin activation markers, and TFPI. Tissue factor pathway inhibitor was significantly correlated with fibrinolysis, DIC score, and prothrombin fragment 1+2. Sequential Organ Failure Assessment score was correlated with DIC score and other hemostatic markers in patients with overt DIC. To improve the outcome of patients with DIC, there is a need to establish more diagnostic criteria for non-overt-DIC. Plasma levels of TFPI and P-selectin may be helpful in this respect.

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