Soluble CD40 ligand Profiles in Patients with Septic Shock

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Aim: Soluble CD40 ligand (sCD40L) has been considered as marker of thrombosis and inflammation in several diseases, including sepsis. Recent studies challenge this view and point to a role of sCD40L in vascular and endothelial function. An indication of that association in sepsis has not been obtained so far. Therefore, herein we evaluated the association of sCD40L with hemorheological and inflammatory markers on context of septic shock.

Methods: Time-changes of sCD40L serum levels over 72 hours of Intensive Care Unit (ICU) admission were assessed in 20 patients with septic shock and 22 healthy volunteers. Association of sCD40L levels with erythrocyte deformability and aggregation (as markers of hemorheology), plasma haemoglobin and white blood cells (WBC) count (as markers of low-grade inflammation) was assessed in patients with septic shock.

Results: At ICU admission, sCD40L levels in patients with septic shock (4.82±4.62 ng/mL) were lower than levels of healthy volunteers (5.95±3.86 ng/mL, p=0.043). sCD40L significantly change over 72 hours of internment (F=2.1, p=0.137). Soluble CD40L levels in patients with septic shock correlate with Hb (r=0.61, p=0.00) and WBC (r=0.63, p=0.00), but not to erythrocyte deformability (r≥0.157, p≤0.235) and aggregation (r≥-0.109, p≤0.192).

Conclusions: These results seem to highlight the association of sCD40L to endothelial function and inflammation in septic shock context.