Concerning hemorheological disturbances in sepsis.

_De omnibus dubitandum est_

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Abstract

Hemorheological and microcirculatory alterations play an important role in the pathophysiology of sepsis. In severe sepsis blood and plasma viscosity increases, red blood cell deformability is impaired, erythrocyte aggregation is enhanced, and the microcirculation is damaged. For studying pathophysiology and novel treatment possibilities for sepsis, various animal models are known. Using a porcine model of fulminant sepsis, we found that skin microcirculatory distortion appears during the bacteremia and the early phase of sepsis, earlier than the alterations in hemodynamic parameters. Red blood cell deformability and mechanical stability impairment, and decreasing erythrocyte aggregation were observed. Consumption in fibrinogen, effect of nitric oxide, direct effect of bacteria on red blood cells, changes in surface glyocalyx ultrastructure might be the possible explanation of this phenomenon. It is suggested that the fulminant sepsis and the slowly developed severe sepsis differ rheologically.

Keywords: Sepsis, microcirculation, hemorheology, experimental models