Recent publications

Following you find a brief abstract of a scientific publication concerning LEUKOCARE's technologies. Please find the full text article at the given reference.

Shock 2008 Dec; 22 [Epub ahead of print]

Increased plasma kynurenine values and kynurenine: tryptophan ratios after major trauma are early indicators for the development of sepsis

LÖGTERS TT[1], LARYEA MD[2], ALTRICHTER J[1], SOKOLOWSKI J[1], CINATL J[3], REIPEN J[1], LINHART W[1], WINDOLF J[1], SCHOLZ M[1], WILD M[1].

[1]Department of Trauma and Hand Surgery, University Hospital Düsseldorf, Germany,
[2]Department of General Paediatrics, University Hospital Düsseldorf, Germany,
[3]Institute for Medical Virology, Johann Wolfgang Goethe University, Frankfurt am Main, Germany

Kynurenine, the major degradation product of tryptophan has been shown to directly damage tissues but its possible contribution to posttraumatic morbidity is unknown. Herein, we studied the kinetics of kynurenine in patients after major trauma and whether this correlates with development of posttraumatic sepsis. Kynurenine and tryptophan of 60 multiple injured patients with Injury Severity Score (ISS) > 16 were quantified prospectively by high-performance liquid chromatography (HPLC). Blood samples were obtained daily from admission until day 10 after admission. Significantly increased kynurenine values were detectable already at day 1 after admission in blood from patients that later developed sepsis, regardless of injury pattern ($p<0.01$). In contrast, kynurenine values of non-septic patients remained low throughout the observation period. However, all patients exhibited significantly decreased tryptophan values versus healthy controls ($p<0.01$). Moreover, significantly increased kynurenine: tryptophan ratios rapidly predicted subsequent sepsis, multiple organ failure, and death ($p<0.01$).Both, increased kynurenine values and kynurenine: tryptophan ratios predicted posttraumatic development of sepsis and organ failure. This ought to be validated in subsequent studies.