

Publication

Intracranial pressure in patients with sepsis

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 1194297**Author(s)** Pfister, D; Schmidt, B; Smielewski, P; Siegemund, M; Strebel, S P; Rüegg, S; Marsch, S C U; Pargger, H; Steiner, L A**Author(s) at UniBasel** [Rüegg, Stephan](#) ; [Pargger, Hans](#) ; [Steiner, Luzius A.](#) ; [Marsch, Stephan](#) ; [Strebel, Stephan P.](#) ; [Siegemund, Martin](#) ;**Year** 2008**Title** Intracranial pressure in patients with sepsis**Journal** Acta neurochirurgica. Supplementum**Volume** 102**Pages / Article-Number** 71-5**Keywords** Intracranial pressure, Cerebral perfusion pressure, Sepsis, S-100 beta

INTRODUCTION: In sepsis the brain is frequently affected although there is no infection of the CNS (septic encephalopathy). One possible cause of septic encephalopathy is failure of the blood-brain barrier. Brain edema has been documented in animal models of sepsis. Aggressive fluid resuscitation in the early course of sepsis improves survival and is standard practice. We hypothesized that aggressive fluid administration will increase intracranial pressure (ICP) and may cause critical reductions in cerebral perfusion pressure (CPP). **MATERIALS AND METHODS:** Patients with sepsis were investigated daily on up to four consecutive days in the intensive care unit. Mean arterial blood pressure (MAP) and blood flow velocity in the middle cerebral artery were monitored for one hour each day. ICP was calculated non-invasively from MAP and flow velocity data. S-100beta was determined daily. **FINDINGS:** Fifty-two measurements were performed in 16 patients. ICP could be determined in 45 measurements in 15 patients. Seven patients had an ICP >15 mmHg and 11 patients had a CPP <60 mmHg on at least 1 day. We found no significant correlation between ICP and fluid administration, but low CPP was significantly correlated with elevated S-100beta ($r = -0.47$, $p = 0.001$). **CONCLUSIONS:** Further research is needed to determine the role of ICP/CPP monitoring in patients with sepsis.

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