Acute phase proteins and white blood cell levels for prediction of infectious complications in status epilepticus

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ABSTRACT: INTRODUCTION: Infections in status epilepticus (SE) patients result in severe morbidity making early diagnosis crucial. As SE may lead to inflammatory reaction, the value of acute phase proteins and white blood cells (WBC) for diagnosis of infections during SE may be important. We examined the reliability of C-reactive protein (CRP), procalcitonin (PCT), and WBC for diagnosis of infections during SE. METHODS: All consecutive SE patients treated in the ICU from 2005 to 2009 were included. Clinical and microbiological records, measurements of CRP and WBC during SE were analyzed. Subgroup analysis was performed for additional PCT measurements in the first 48 hours of SE. RESULTS: 22.5% of 160 consecutive SE patients had infections during SE. Single levels of CRP and WBC had no association with the presence of infections. Their linear changes over the first three days after SE onset were significantly associated with the presence of infections (p=0.0012 for CRP, p=0.0137 for WBC). Levels of PCT were available for 31 patients and did not differ significantly in patients with and without infections. Sensitivity of PCT and CRP was high (94% and 83%) and the negative predictive value of CRP increased over the first three days to 97%. Specificity was low, without improvement for different cut-offs. CONCLUSIONS: Single levels of CRP and WBC are not reliable for diagnosis of infections during SE, while their linear changes over time significantly correlated with the presence of infections. In addition, low levels of CRP and PCT rule out hospital-acquired infections in SE patients
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