Acute-phase proteins and mortality in status epilepticus: a 5-year observational cohort study

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Acute-phase proteins, such as C-reactive protein and albumin, may be related with course and outcome in status epilepticus, as changes of cytokine levels and blood-brain barrier breakdown during status epilepticus have been demonstrated. The aim of this study was to elucidate the association of C-reactive protein and albumin with course and outcome of status epilepticus.; Observational cohort study.; This study was performed on the ICU of a university-affiliated tertiary care center.; All consecutive patients with status epilepticus from 2005 to 2009 were selected from a prospectively established electroencephalography database.; None.; Albumin was assessed at admission and status epilepticus onset, and C-reactive protein was assessed during the first 3 days of status epilepticus. Outcomes were defined as refractory status epilepticus and death.; One hundred thirty-five consecutive status epilepticus patients were analyzed. Patients with higher levels of albumin at status epilepticus onset had significant lower odds for the development of refractory status epilepticus and death (with every 1g/L: odds ratio 0.91, 95% confidence interval 0.86-0.96, p = 0.001; odds ratio 0.88, 95% confidence interval 0.82-0.95, p <0.0001, respectively). These associations remained significant after multiple adjustments for possible confounders and correction for multiple comparisons (with every 1g/L: odds ratio 0.92, 95% confidence interval 0.86-0.97, p = 0.004; odds ratio 0.87, 95% confidence interval 0.80-0.94, p = 0.001, respectively). Increased C-reactive protein levels at status epilepticus onset were associated with higher rates of refractory status epilepticus and death (with every 1mg/L: odds ratio 1.01, 95% confidence interval 1.00-1.02, p = 0.021; odds ratio 1.01, 95% confidence interval 1.00-1.02, p <0.007, respectively). These associations were inconsistent after adjustment for possible confounders and corrections for multiple comparisons (with every 1mg/L: odds ratio 1.01, 95% confidence interval 1.00-1.02, p = 0.109; odds ratio 1.01, 95% confidence interval 1.00-1.02, p = 0.043).; Albumin levels measured early in status epilepticus are independently associated with refractory epileptic activity and death while C-reactive protein levels were inconsistent. Further studies are needed to assess the potential of acute-phase proteins for inclusion in prediction models allowing to identify patients with poor outcome of status epilepticus.

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