

Publication

Association of environmental factors with the onset of status epilepticus

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Keywords status epilepticus, intensive care unit, environment, Circadian, moon phase, weather OBJECTIVE: The goal of the work described here was to investigate the influence of environmental factors on admissions of patients with status epilepticus (SE) to the intensive care unit (ICU). METH-ODS: This retrospective cohort study analyzed all admissions to a university hospital ICU because of SE. Poisson regression and likelihood ratio tests were employed to determine associations between environmental factors and the incidence of SE. RESULTS: Data on 184 patients (mean age: 57, range: 18-89) indicated a significant (P<0.0001) diurnal pattern, with admissions peaking between 4 and 5 PM and reaching a minimum in the early morning. No significant weekly, monthly, or seasonal pattern was observed. Admissions varied significantly across the lunar cycle (P=0.003), peaking at Day 3 after new moon and being minimal 3 days before new moon. The incidence of SE increased on bright days (P=0.04) and with the duration of daily sunshine (P=0.03). High relative humidity (P<0.01), high temperature (P<0.05), and dark days (P=0.02) were significantly protective factors. The incidence of SE on weekends was significantly lower in the subgroup of patients with known epilepsy (P=0.004), and the risk of nonconvulsive SE was significantly higher in summer (P=0.04). CONCLUSIONS: Admissions of patients with SE to the ICU are significantly associated with several environmental protective and precipitating factors, such as diurnal, weekly, and lunar cycles and weather variables.

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