

## Time to electroencephalography is independently associated with outcome in critically ill neonates and children

Ersida Buraniqi

Mayo Clinic, USA



### Abstract

**Objective:** To identify factors associated with in-hospital mortality in neonates and children undergoing continuous electroencephalography (cEEG) monitoring in the intensive care unit (ICU).

**Methods:** We performed a retrospective observational study in patients from birth to 21 years of age who underwent clinically indicated cEEG in the ICU from 2011 to 2013. The main outcome measure was in-hospital mortality.

**Results:** Six-hundred and twenty-five patients (54.2% male) met eligibility criteria, of whom 211 were neonates (55% male, 24.8% premature) and 414 were pediatric patients (53.9% male). Electrographic seizures occurred in 176 patients (28.2%) and status epilepticus (SE) occurred in 20 (11.4%). The time from ICU admission to cEEG initiation was 16.7 (5.1-94.4) h. Eighty-nine patients (14.2%) (30 [14.2%] neonates and 59 [14.3%] pediatric patients) died in the hospital. In neonates-after controlling for gender and prematurity-independent factors associated with mortality were prematurity (odds ratio [OR] 2.63, 95% confidence interval [CI] 1.06-6.5,  $p = 0.037$ ), presence of status epilepticus (SE); OR 8.82, 95% CI 1.74-44.57,  $p = 0.008$ ) and time from ICU admission to initiation of cEEG (OR 1.002, 95% CI 1.001-1.004 per hour,  $p = 0.008$ ). In pediatric patients-after controlling for gender and age-independent factors associated with mortality were the absence of seizures factors associated with mortality were absence of seizures (OR = 4.3, (95% CI: 1.5-12.4),  $p = 0.007$ ), the presence of SE (OR 7.76, 95% CI 1.47-40.91,  $p = 0.016$ ) and the time from ICU admission to initiation of cEEG (OR 1.001, 95% CI 1.0002-1.001, per hour,  $p = 0.005$ ).

**Significance:** Both presence of electrographic SE and time from ICU admission to cEEG initiation were independent factors associated with mortality in neonates and pediatric patients with cEEG in the ICU.

### Biography

Ersida Buraniqi has completed her MD at the Istanbul Faculty of Medicine, in Turkey and her postdoctoral studies in Epilepsy and Clinical Neurophysiology at Boston Children's Hospital and Harvard Medical School in Boston, USA. She is now a Child Neurology Resident at the Mayo Clinic in Minnesota, USA. She has presented her scientific work in more than 20 national and international conferences and meetings and has been serving as an editorial board member of scientific journals

### Publications

1. Time to electroencephalography is independently associated with outcome in critically ill neonates and children
2. Increasing ketamine use for refractory status epilepticus in US pediatric hospitals
3. Electrographic seizures in preterm neonates in the neonatal intensive care unit
4. Relapse of multiple myeloma presenting as extramedullary plasmacytomas in multiple organs
5. Time to continuous electroencephalogram in repeated admissions to the pediatric intensive care unit

[3<sup>rd</sup> International Conference on Central Nervous System & Therapeutics](#) | July 17-18, 2020

**Citation:** Ersida Buraniqi, Time to electroencephalography is independently associated with outcome in critically ill neonates and children, CNS 2020, 3rd International Conference on Central Nervous System & Therapeutics, Amsterdam, Netherlands, July 17-18, 2020, 02