Salzburg Tourismus

The 6th London-Innsbruck Colloquium on Status Epilepticus and Acute Seizures

6-8 April 2017

Salzburg, Austria

Final Programme

www.statusepilepticus.eu

ILAE-CEA
COMMISSION ON EUROPEAN AFFAIRS

UNIKLINIKUM SALZBURG
CHRISTIAN DOPPLER KLINIK

ÖGfE
österreichische gesellschaft für epileptologie

death at discharge or within 30 days after discharge. Cox proportional hazards regression was used to evaluate the association of co-morbid condition or complications of SE and mortality.

Results: During the study period, there were 21,732 eligible patients. The total observation time was 3,547.08 person-years with the median time of 6.34 years (95%CI: 5.06 – 8.38). The total mortality rate was 102.67 per 100 person-years (95%CI: 99.39 – 106.07) or 3,642 patients who died. The survival rates at 1, 3, 5, and 10 years were 58.1%, 54.6%, 52.5%, and 39.8% respectively. The co-morbid condition or complications positively associated with mortality were heart disease HR : 2.26 (95%CI : 2.08 – 2.46), shock HR : 1.90 (95%CI : 1.71 – 2.12), septicemia HR : 1.81 (95%CI : 1.67 – 1.96), acute renal failure HR : 1.75 (95%CI : 1.59 – 1.93), central nervous system infections HR : 1.74 (95%CI : 1.48 – 2.05), cancer HR : 1.57 (95%CI : 1.28 – 1.92), chronic renal failure HR: 1.56 (95%CI : 1.39 – 1.76),and respiratory failure HR : 1.48 (95%CI : 1.38 – 1.59).

Conclusion: Among several co-morbid condition or complications, heart disease was the highest risk factor for mortality in SE by national database.

CLINICAL INVESTIGATION

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Quantitative EEG interpretation by EEG-naive Neurointensivists before and after expert training

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Background: Continuous and quantitative EEG (cEEG/QEEG) is a powerful monitoring tool for guiding diagnosis and therapy in the Neuro Intensive Care Unit (NICU), but its effective interpretation by non-Neurophysiologists is an unsettled issue. We evaluated the effect of a single cEEG/QEEG-focused training seminar on the interpretation skills of EEG-naive Neurointensivists in two distinct NICUs.

Methods: From 06/2015 to 09/2016, 35 Neurointensivits evaluated cEEG/QEEG tracings (350 before training; 86 after training) selected from patients admitted in the participating NICUs for different types of acute brain disorders. Four parameters were assessed: 1. depth of sedation, 2. asymmetry, 3. artifacts and 4. seizures. QEEG settings included density spectral array (DSA), amplitude-integrated EEG (aEEG), and burst-suppression rate (BSR). Data were collected using a web-based system. Answers given before and after training were compared with those of two expert Neurophysiologists, which performed the training seminar and represented the gold standard reference. Agreement was evaluated using Cohen's Kappa.

Results: At baseline, sedation was correctly evaluated in 39.1%, asymmetry in 71.4%, artifacts in 40.6%, and seizures in 61.1% of tracings. K-values was poor for depth of sedation (0.06) and artifacts (0.08), fair for seizures (0.39), and moderate for asymmetry (0.46). After training, sedation was correctly recognized in 90.7%, asymmetry in 81.4%, artifacts in 95.3%, and seizures in 80.2% of cases. K-values of all parameters improved after training, particularly for depth of sedation (0.74) and artefacts (0.59), while a smaller effect was observed for asymmetry (0.63) and seizures (0.47).

Conclusions: A simple cEEG/QEEG-focused training was effective in improving detection rates by Neurointensivists of common phenomena in NICU patients monitored with cEEG/QEEG.

Discussion: We discuss the importance of recognising and understanding the significance of this rare but striking clinical sign. We argue that such an understanding can provide additional guidance for clinicians as well as patients' relatives when navigating the challenging clinical and ethical questions surrounding the care of patients who have suffered hypoxic brain damage following cardiac arrest.

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Generalized periodic discharges characteristics and outcome in post cardiac arrest

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Background: The neurophysiological findings of generalized periodic discharges (GPDs) are generally recognized as "malignant" pattern in cardiac-arrest survivors. However, their predictive role is controversial. The American Clinical Neurophysiology Society standardized the terminology of periodic patterns. The aim of this study is to evaluate the association between GPDs major and minor modifiers and outcome at hospital discharge in comatose post-cardiac arrest patients.

Methods: we retrospectively collected clinical and electrophysiological data of adult patients (≥18 yrs old) admitted at the King's College Hospital from 1st January 2010 to 31st March 2016 with in- or out of the hospital cardiac arrest who underwent at least one EEG and this showed GPD pattern. ACNS terminology was used to characterize GPD patterns and appropriate statistical analysis were performed to identify clinical and electrophysiological elements associated with outcome.

Results: 36 out of 234 patients had a GPD pattern: 16 patients survived and were discharged from the hospital. Statistical analysis showed significant correlation between survival and a low to normal background voltage, theta background rhythm, background reactivity to external stimuli, low to normal GPD interdischarge voltage, sharp or blunt morphology and no GPD evolution. Interestingly, response to BDZ was associated with greater mortality.

Conclusions: Different intrinsic characteristics of generalized periodic patterns may predict survival in post-cardiac arrest patients. ACNS standardized terminology is a useful tool for a better characterization of GPD patterns and its use is highly recommended. Further prospective and multicentre data are needed to validate our findings.

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Which is the adequate ketamine EEG pattern to control status epilepticus?

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Objective: The aim of the study is to describe the EEG changes produced by Ketamine (KET) in patients with superefractory Status Epilepticus (SRSE).

Methods: We retrospectively analyzed the data of patients with SRSE treated with KET alone(without other anesthetics at coma dosis) in the Intensive Care Unit , Hospital de Bellvitge, Spain ,from 2008 to 2016. Data collection included demographic features, clinical presentation, diagnosis, continuous video-electroencephalogram (cEEG) data, treatment with KET: duration, effect of loading dose and mantenance dose on Seizure control and on cEEG and side effects. Outcomes were seizure control, status control and death.

Results: 6 patients with SRSE were treated with KET of them, 2 patients were excluded. One patients because no cEEG was done during the KET treatment and the other patient was excluded because KET did not produce EEG changes (the dose administrated was low, less that 100 mgr per day). Finally 4 patients were included, 2 women (50%)(mean age 51.2).Prior to KET the patients received a median of three anesthestetic comas and five iv-antiepileptic drug. One patient received several bolus of KET (up to 250mgr) followed by a continuous infusion and