for differences in seizure duration, the average rate of ripples and fast ripples was normalized according to the duration of the seizure. The preprocessed ECoGs were filtered in the 80-200 Hz and in the 250-500 Hz frequency range by a finite impulse response filter. The filtered ECoGs were then normalized using a 60 s reference period selected from 120 s to 60 s before the seizure onset. oscillatory events in each frequency band needed at least four consecutive cycles having an amplitude of 3 SD above the mean of the reference period. Also, the time lag between two consecutive cycles ranged from 5 to 12.5 ms for ripples and from 2 to 4 ms for fast ripples. We arbitrarily divided each period into three equal parts to compare the rates of occurrence of ripples and fast ripples during the ictal and postictal periods. We then compared the rate of occurrence of ripples and fast ripples using Wilcoxon signed-rank tests followed by Bonferroni–Holm corrections to correct for multiple comparisons.

Results: Forty seizure (24 in isolated group, 16 in clustered group) from 8 patients were analyzed. All ictal ECoGs were manifested with 3 subsequent phases including low-voltage fast activity, irregular spiking and poly-spikes bursting. Before seizure offset, the fast ripple activity kept highly and ceased abruptly in the isolated group. Postictally, the fast ripple activity didn't remain silence in the clustered group ($p < 0.05$).

Conclusions: Ripples may represent synchronous IPSPs generated by principal cells in response to inhibitory interneurons firing while fast ripples reflect the abnormal synchronous firing of principal neurons. The ceaseless fast ripple activity after each one of frequently reoccurring seizures suggests that there should be a system fail to overcome or conversely to enhance the high band HFO. The HFO patterns at seizure-offset and post-ictal stages associated with the seizure termination and clustering.

Prospective evaluation of ADAN Scale: a tool to a prompt identification of Status Epilepticus (SE)

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Background: The ADAN scale was designed to select those patients with risk to develop status epilepticus (SE) after experiencing an epileptic seizure. This scale was defined after a retrospective study and it is based on 4 clinical items: **A**bnormal speech, ocular **D**eviation, **A**utomatisms and **N**umber of motor seizures. However, this scale needs a prospective evaluation and this is the purpose of our study.

Methods: This is a prospective evaluation of all patients arriving at our emergency department with a suspicion of seizure or other neurological symptoms. All these patients were scored using the ADAN scale upon arrival. Afterwards, all patients were evaluated by a neurologist and were performed all necessary ancillary tests; if all the symptoms were not clearly explained by a stroke, they performed an emergent EEG to rule out SE. We ruled out stroke patients for this study.

Results: A total of 128 no-stroke patients were evaluated using ADAN scale upon arrival during 6 months (June - December 2018). Median age was 58.5; 79 (61.7%) were male. 58 (45.3%) had a

previous history of epilepsy. Regarding ADAN score: 65 (51,6%) had a low risk for SE (ADAN=0-1) it was 0; 28 (21,9%) had a moderate risk (ADAN=2) ADAN and 34 (26,6%) had a high risk (ADAN>2). After a thorough clinical evaluation and a EEG, 45 (35.2 %) fulfilled criteria for SE. When analyzing the ADAN score and the finding of SE, a score >1 was significantly associated with a diagnosis of SE (69% in ADAN>1 group vs. 3% in ADAN=0-1; p=0.0001). The predictive capacity of the scale for identifying SE in the validation dataset was 95.6%. Taking into account, the different groups according to risk, 85.3 % of high-risk group showed SE, 50 % of moderate-risk group and 3% of low-risk group.

Conclusion: ADAN scale is a strong predictor of the diagnosis of SE in patients who experience an epileptic seizure. This scale may be a useful tool for clinical use in order to help to select patients in high risk of SE, and allow a faster diagnosis and an early treatment.

The outcome of non-convulsive status epilepticus

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Background: It is not entirely clear, to what extent, non-convulsive status epilepticus (NCSE) contributes to clinical impairment and neurological injury. To assess the clinical impact of NCSE, we retrospectively analysed the cases of NCSE in our cohort.

Methods: NCSE episodes diagnosed during electroencephalographic evaluation over a period of three years from January 2012 to December 2014 were identified, and the clinical data of patients was analysed for the admission during which NCSE occurred. Outcomes at discharge were defined as good if the patient was back to baseline functional status or had mild functional decline requiring some rehabilitation; and poor if death occurred or if the patient had significant functional decline.

Results: From 2663 inpatient EEGs done over three years, 81 episodes of NCSE were identified (3.04%). The average age of patients with NCSE was 65 years. 42 were females and 39 males. The mean duration of NCSE was 3.36 days. The average length of inpatient stay during the admission under consideration was 30.66 days. 29(25.8) had a primary neurological cause for NCSE, 15(18.5%) had a systemic (metabolic/septic/toxic) cause, and 36(44.4%) had both. 23(28.4%) were known to have epilepsy prior to the NCSE episode.

35(43.2%) had a good outcome at discharge, whereas 46(56.8%) had a poor outcome. It was apparent that the poor outcome was unrelated to the NCSE itself, from the wide difference in the averages of length of hospital stay and length of NCSE itself, and there being no relation between the number of antiepileptic drugs used or anaesthetic agent usage (midazolam in most cases) with the outcome.

Factors associated with poor outcome were no prior epilepsy (OR 3.85; 95% CI 1.26 to 1.78; p=0.01); no episode of clinical seizure associated with NCSE (OR 4.06; 95% CI 1.41 to 11.6; p=0.009) and NCSE due entirely to systemic causes (OR 3.2; 95% CI 0.97 to 10.45; p= 0.05).

Conclusion: In our cohort, outcome of NCSE is poor and is likely to be influenced by the nature of underlying illness rather than NCSE