The EEG diagnosis of NCSE: concordance between Salzburg Criteria (SCNC) and clinical practice

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Background: The diagnosis of Non Convulsive Status Epilepticus (NCSE) in everyday clinical practice can be challenging. To help identify NCSE, Salzburg Criteria (SCNC) have been recently validated. Here we evaluate the concordance in NCSE diagnosis between neurologists not trained in SCNC use, who take care of the patient in the clinical setting, and an expert panel who retrospectively evaluated the EEG according to them.

Methods: All consecutive urgent EEGs done from January 1st to March 31st 2018 to rule out a NCSE were considered. A pool of three epileptologists trained in the used of SCNC (GG, AO, SM), and not involved in the clinical evaluation of the incident case (and of the corresponding EEG), retrospectively classified the EEG pattern according to SCNC in three categories: definite NCSE (D), no NCSE (N), possible NCSE (P). We defined the degree of concordance between the diagnosis made by the neurologist who took care of the patient and the classification made by the expert. Moreover, we evaluate the evolution of the category “Possible NCSE”.

Results:

Conclusions:
These data suggest that in the evaluation of a clinical suspected NCSE there is a perfect concordance between SCNC and EEG diagnosis in clinical practice in cases of “Definite NCSE” or “No NCSE”. The “Possible NCSE” group is still a grey zone in which many different patterns of Ictal-interictal Continuum (IIC) are represented. In these conditions, the decision to treat has to be based on a specific evaluation of the single patient (burden of lesional and metabolic disturbances) in order to identify those cases in which the disturbance of consciousness is mostly sustained by the derangement of electrical activity itself instead of being completely explained by the underlying etiological condition.

References
5. Taner et al. Clin EEG and Neurosci 2018