Original article

Epileptic Disord 2018; 20 (6): 490-501

Epileptology of the first tonic-clonic seizure in adults and prediction of seizure recurrence*

Michalis Koutroumanidis, Elisa Bruno

Department of Clinical Neurophysiology and Epilepsy, Guy's & St Thomas' NHS Foundation Trust and Institute of Psychiatry, Psychology & Neuroscience, Division of Neuroscience, King's College London, UK

Received April 26, 2018; Accepted August 22, 2018

Epileptic Disorders

- New epilepsy, its clinical type / syndrome and aetiology can be diagnosed in the majority of adult patients with a first tonic-clonic (TC) seizure. The tools to use are standard in clinical epileptology according to the 2017 ILAE classification criteria and the new ILAE definition of epilepsy that no longer requires a second seizure as the sole diagnostic criterion.

- The risk of TC seizure recurrence (generalized TC seizures, focal to bilateral TC seizures, or of uncertain type) after a first unprovoked TC seizure and the factors involved vary across epilepsy aetiologies and syndromes. Therefore, early diagnosis and classification of new epilepsy, when possible, not only provides maximal information guiding optimal selection of antiepileptic treatment, but also enables stratification of the relevant risks and important adjustments in the management of clinically well-defined patients.

- Epileptic discharges (ED) in routine EEG performed within the first 24-48 hours from the first seizure are typically considered as an independent risk factor for seizure recurrence. However, an early sleep-deprived EEG not only shows increased yield of ED (including patients with first seizure while asleep), but decisively assists epilepsy classification and may also indicate genetic aetiology when generalized spike-wave discharges are present (in 1/4 of patients with a first TC seizure).

- Recognition of seizure modulators and triggers, such as sleep deprivation or photosensitivity, and appropriate advice may allow successful treatment with smaller and better tolerated doses, minimising side effects and improving compliance.

- When early diagnosis of epilepsy is not possible, decisions about immediate or deferred treatment of an adult with a first seizure can still be guided by the presence of at least one of the four generic independent risk factors for seizure recurrence: a previous brain injury, an EEG with epileptic discharges (EDs), a significant brain-imaging abnormality, and a nocturnal seizure.