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Epilepsia®

INTRODUCTION

Introduction to the epilepsy syndrome papers

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The epilepsies comprise a broad group of disorders/diseases with diverse etiologies, diverse electroclinical presentations, and marked variability in clinical outcomes.

The 2017 International League Against Epilepsy (ILAE) Classification of the Epilepsies defined three diagnostic levels including (1) seizure type, (2) epilepsy type, and (3) epilepsy syndrome, emphasizing that etiology and comorbidities must be considered at each level.[1] Although *epilepsy syndromes* had been recognized as distinct electroclinical entities long before the first ILAE Classification of Epilepsies and Epilepsy Syndromes was proposed in 1985, and have been summarized in the Guide Bleu and Epileptic Syndromes in Infancy, Childhood, and Adolescence,[2] there was no formally accepted ILAE classification of epilepsy syndromes.

This series of ILAE position papers represents the work of the Nosology and Definitions Task Force, established by the ILAE in 2017 to provide definitions of epilepsy syndromes. We defined an epilepsy syndrome as "a characteristic cluster of clinical and EEG features, often supported by specific etiological findings (structural, genetic, metabolic, immune, and infectious)." The diagnosis of a syndrome in an individual with epilepsy frequently carries prognostic and treatment implications. Syndromes often have age-dependent presentations, meaning that they typically start at specific ages, and in some cases may also remit at certain ages. Many syndromes are strongly correlated with a range of specific intellectual, psychiatric, and other comorbidities, whereas in other syndromes, the absence of such comorbidities is a characteristic feature (Figure 1).

Epilepsy syndromes have traditionally been grouped according to age at onset. Accordingly, the ILAE position papers describe separately syndromes with onset in neonates and infants (up to age 2 years), syndromes with onset in childhood, and syndromes that may begin at variable ages (meaning in both pediatric and adult patients). Additionally, a separate position paper on the idiopathic generalized epilepsies is included.

The syndromes are further subdivided into generalized, focal, or generalized and focal, based on seizure type(s), with a separate category for syndromes with developmental and epileptic encephalopathy (DEE) or progressive neurological deterioration. The 2017 Classification of the Epilepsies proposed the term DEE to denote an epilepsy associated with developmental impairment that may be due to both the underlying etiology (developmental encephalopathy) and superimposed epileptic activity (epileptic encephalopathy).[1] Most DEEs present very early in life; the term DEE is more challenging to apply when epilepsy begins later, following a prolonged period of normal development. Thus, the ILAE Nosology and Definitions Task Force identified

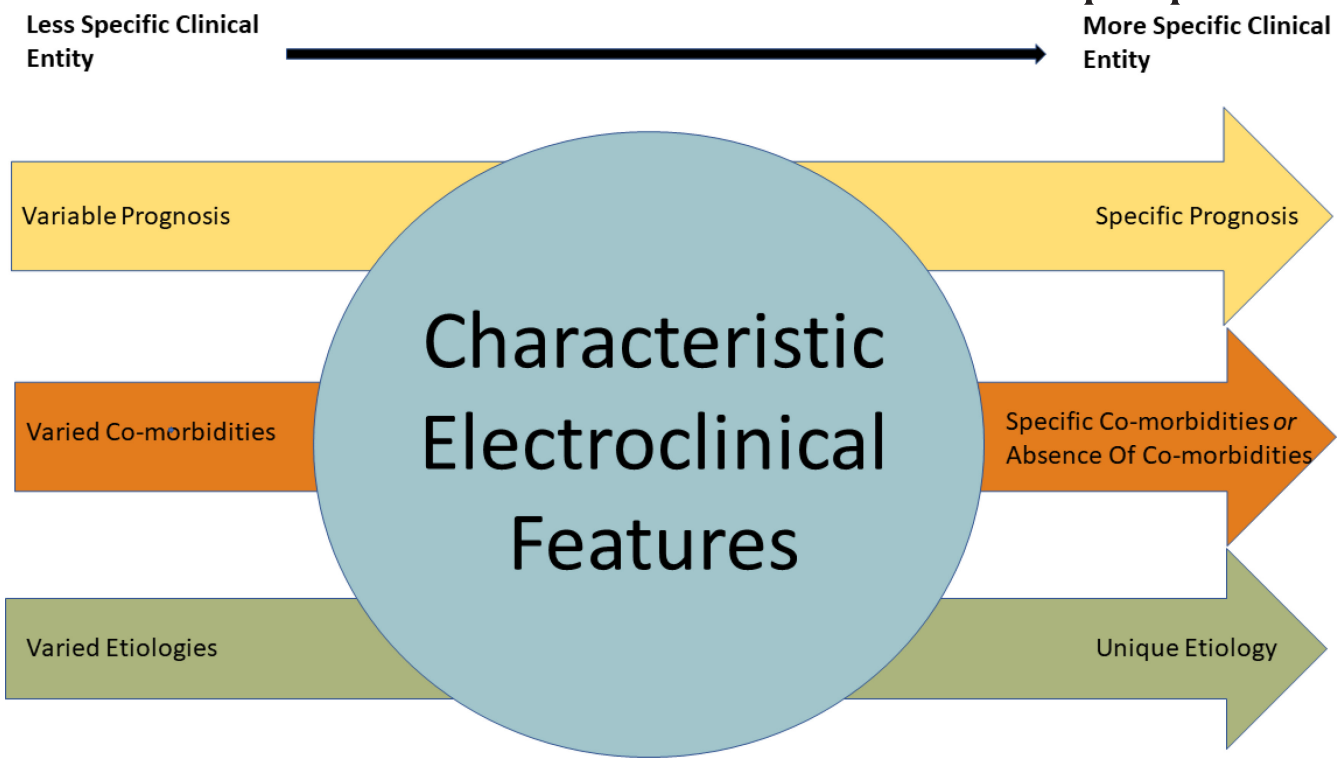

FIGURE 1 At the core, an epilepsy syndrome must have characteristic electroclinical features. Many also are associated with specific comorbidities and prognosis. Additionally, the etiology-specific syndromes are correlated with a specific, unique etiology

syndromes with DEE and syndromes with progressive neurological deterioration. This approach clearly identifies the group of syndromes associated with cognitive impairment with or without other manifestations of neurological deterioration and recognizes that this impairment may be due to the underlying etiology, superimposed epileptic activity, or both.

Furthermore, the ILAE Nosology and Definitions Task Force identified the concept of etiology-specific syndrome, to denote clearly defined entities with a distinct phenotype associated with a specific etiology, examples of which include certain monogenic epilepsies, such as *CDKL5*-DEE and *PCDH19* clustering epilepsy, and structural entities such as mesial temporal lobe epilepsy with hippocampal sclerosis and gelastic seizures with hypothalamic hamartoma. In the current classification, a number of epilepsies with specific etiologies as well as some epilepsies that arise from or involve specific brain regions or networks have not been included as syndromes, although these often also have a characteristic cluster of clinical and electroencephalographic (EEG) features. Further work is needed to extend the range of epilepsies included in the ILAE syndrome classification and to determine whether some of those conditions meet criteria for classification as epilepsy syndromes.

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CONFLICT OF INTEREST

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