

Epilepsy in childhood: cognitive functions, emotional-behavioral symptoms and tolerability of anti-seizure medications.

Introduction: Considering the complexity of different clinical pictures, the wide range of available treatments (pharmacological and non-pharmacological), the coexistence of comorbidities and the continuous discoveries in the field of research, managing patients with epilepsy in developmental age is a significant challenge for clinicians, both in terms of diagnosis and especially in prognosis. The purpose of this paper was to describe the cognitive, emotional/behavioral profile of subjects with epilepsy in developmental age, as well as the different tolerability profiles of anti-seizure drugs, in the perspective of a comprehensive patient management.

Methods: This work is based on evidence from various observational studies conducted in recent years at the Child and Adolescent Neuropsychiatry Unit of the University of Salerno. The various forms of epilepsy, comorbidities, and pharmacological treatments were considered in order to obtain a global evaluation of the pediatric patient. In all the studies, standardized and internationally validated tests were administered to investigate the cognitive and emotional/behavioral aspects. Finally, we considered the effect of different anti-seizure medications on the cognitive and emotional/behavioral profile of patients, through regular follow-ups over time.

Results: Our results suggest that subjects with epilepsy in their developmental age may experience difficulties in some cognitive abilities, particularly in executive functions (working memory, cognitive flexibility, inhibition, shifting, etc.). Such deficits were present in patients with different forms of epilepsy, even in the absence of pharmacological therapy, when compared to a reference population. It seems that some factors related to epilepsy (age of onset of epilepsy, duration of epilepsy, etc.) may be related to these impairments, although the exact mechanism underlying these dysfunctions is not known. Antiseizure medications can influence cognitive performance and executive functions differently, and it appears that newer-generation drugs have a better cognitive tolerability profile than older. Furthermore, our data suggest that children and adolescents with epilepsy experience greater internalizing and externalizing problems than their peers and that these difficulties are often correlated with higher levels of parental stress.

Conclusion: In conclusion, we can affirm that children and adolescents with epilepsy have a complex clinical management, in which the choice of the antiseizure medication represents a crucial moment for the clinician. Particular attention should be paid to monitoring the comorbidities of pediatric patients in terms of emotional/behavioral aspects, through regular follow-ups over time. The choice of

the most appropriate pharmacological therapy should take into account both seizure control and tolerability in terms of cognitive and emotional/behavioral aspects, in order to seek the best possible quality of life for the patient and their family, and develop targeted therapeutic interventions.