The Challenge of Pharmacotherapy in Children and Adolescents with Epilepsy-ADHD Comorbidity.


Abstract

Epilepsy is common in children and adolescents where its prevalence is 3.2-5.5/1000. About one-third of patients also have attention deficit hyperactivity/impulsivity disorder (ADHD). The possible relationship between epilepsy and ADHD is still unclear, and ADHD symptoms (such as inattention, hyperactivity, behavioral disturbances) are frequently considered as adverse effects of antiepileptic drugs (AEDs). The literature was searched for data on the behavioral effects of AEDs. Phenobarbital is the most frequently reported medication to induce symptoms of ADHD, followed by topiramate and valproic acid. Phenytoin seems to exert modest effects, while for levetiracetam there are contrasting data. Lacosamide induces some beneficial effects on behavior; carbamazepine and lamotrigine exert favorable effects on attention and behavior. Gabapentin and vigabatrin have limited adverse effects on cognition. Oxcarbazepine, rufinamide, and eslicarbazepine do not seem to aggravate or induce ADHD symptoms, whereas perampanel can lead to a high incidence of hostile/aggressive behavior, which increases with higher dosages. Information about the behavioral effects of ethosuximide, zonisamide, tiagabine, pregabalin, stiripentol, and retigabine is still limited. Because ADHD significantly affects the quality of life of epilepsy patients, the clinical management of this neuropsychiatric disorder should be a priority. Methylphenidate is effective most children and adolescents with ADHD symptoms and comorbid epilepsy, without a significant increase of seizure risk, although data are still limited with few controlled trials.