

Psychiatric Comorbidity in Youth with Epilepsy

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Epilepsy is a common, chronic pediatric neurological disorder characterized by recurrent seizures. In addition, more psychiatric disorders have been noted in children with epilepsy (29%) than in the general pediatric population (20%)¹ and in children with other chronic illnesses.² Even though population-based studies demonstrate that 50%-70% of children with epilepsy will achieve stable seizure remission,³ a high rate of educational underachievement and poor social adjustment in adulthood has been observed.⁴ It is important for physicians who treat children to be aware of the relationship between epilepsy and psychopathology so that appropriate intervention can be made in hopes of facilitating the best long-term outcome.

Educational Objectives

At the conclusion of this activity participants will be able to:

- List the psychiatric disorders commonly found in children with epilepsy.
- Describe clinical management issues for primary care treatment of psychiatric disorders in children with epilepsy.
- Identify clinical situations that require psychiatric referral.

Patients with epilepsy are often underdiagnosed and undertreated for psychiatric disorders. Perhaps because the immediate responsibility of coping with seizures and their consequences is overwhelming, families may not associate a child's emotional and behavioral functioning with epilepsy, and so may not bring it to the physician's attention. Additionally, physicians may overlook the psychiatric symptoms as they are confronted with the challenges in attaining maximal seizure control.

Although the majority of youth with epilepsy have normal IQs, they tend to have poorer academic performance, greater rates of grade retention, and increased special education placement relative to their peers. Academic underachievement may be the result of emotional and behavioral problems even in children with epilepsy who have normal cognitive skills, making identification and treatment of psychological issues an important task.

Etiologic factors and risks

Children and adolescents with epilepsy are vulnerable to the same multietiologic risk factors for psychiatric disorders as the general population. Moreover, living with epilepsy creates an additional burden for the child and the entire family, thereby increasing the risk of psychiatric disturbance. Poorly controlled

seizures and a longer duration of epilepsy have been associated with increased psychopathology in youth.^{5,6} The fundamental question of whether seizures independently cause psychopathology remains unanswered; to date, neither the type, laterality of seizures, nor electroencephalographic findings have been associated with psychopathology in children. Nonetheless, the effects of antiepileptic medications (AEDs) alone cannot explain the development of psychiatric problems in children with epilepsy. Certain psychiatric symptoms, such as behavioral activation (irritability, hyperactivity), disinhibition, and sleep problems, are known to be adverse reactions to specific AEDs, but this does not explain the development of comorbid psychiatric conditions in general.

Risk factors not specific to epilepsy, such as low IQ scores and lower socioeconomic status, have been strongly associated with increased psychopathology in youth with epilepsy.⁷ Family factors also play an important role in the etiology and course of medical and psychiatric disorders.⁸ Behavioral problems in children with epilepsy were found to be significantly associated with the presence of stress, psychiatric disorders in mothers, and intrusive parenting styles.^{9,10}

Psychiatric disorders and epilepsy

Attention-deficit/hyperactivity disorder (ADHD) and mood disorders, such as anxiety and depression, are the most common comorbid psychiatric illnesses found in cognitively normal children with epilepsy. Other disruptive disorders, such as oppositional defiant disorder and conduct disorder, are not more prevalent in this clinical group when compared to the general population.⁷ There is, however, evidence of an association between epilepsy and autism, as documented by the presence of seizures in approximately 30% of children with autism.¹¹ Epilepsy also is frequently associated with other behavioral conditions, such as sleep disturbances.¹²

The sequential relationship between the onset of seizures and the development of psychiatric problems is unknown. It was reported that up to 45% of children have emotional and behavioral problems before the onset of epileptic seizures.^{13,14} The identified pre-existing psychopathology may be an early representation of an epilepsy syndrome characterized by seizures and psychopathology. On the other hand, pre-existing emotional problems may be unrelated to epilepsy and may represent an independent comorbid condition.

Clinical management issues

Treatment of youth with comorbid epilepsy and psychiatric disorders is a challenge because the specific aspects of both conditions have to be carefully managed for optimal treatment results. The child's developmental needs, psychosocial stressors, school performance, and family functioning must be evaluated prior to determining the specific treatment modality. Youth with uncomplicated ADHD, anxiety, and the first episode of depression in the absence of other comorbid psychiatric conditions can be successfully managed by a primary care physician. Self-report instruments, such as the Child and Adolescent Symptom Inventory, the Child Behavior Checklist, and the Child Depression Inventory can be used to screen and monitor emotional and behavioral problems. The practice parameters and guidelines for the diagnosis and treatment of ADHD, depression,

and anxiety are available through the American Academy of Child and Adolescent Psychiatry publication catalog¹⁵ to aid in treating patients.

Current use of AEDs should be carefully evaluated prior to the initiation of any psychotropic drug therapy. Potential drug interactions and the specific effects of psychotropic agents on seizures must be taken into consideration. Stimulants, such as methylphenidate (Ritalin, Metadate, Concerta), dexamethylphenidate (Focalin), dextroamphetamine (Dexedrine), and mixed salts amphetamine (Adderall) are the first-line medications for the treatment of ADHD. They are effective and safe for children with seizures, but elevated blood levels of phenobarbital and phenytoin have been reported.^{16,17} The data on the efficacy and safety of atomoxetine (Strattera), a new nonstimulant medication for ADHD, in children with epilepsy is not available at this time.

It is generally accepted that selective serotonin reuptake inhibitors (SSRIs) are the first-line medications for the treatment of anxiety and depression. However, very few double-blind placebo controlled studies of SSRIs have been done with children. Moreover, since children with seizures have been excluded from studies, current knowledge concerning epilepsy and SSRIs is mostly acquired from adult literature.

Most SSRIs inhibit cytochrome P-450 (CYP450) isoenzymes to various degrees. The SSRIs that inhibit CYP450 the least, and therefore have the least potential for interaction with other drugs, are citalopram (Celexa), escitalopram (Lexapro), and sertraline (Zoloft).¹⁸

The important question of whether SSRIs are pro- or anticonvulsive in a clinical pediatric sample remains unanswered. Fluoxetine (Prozac) is reported to demonstrate anticonvulsant effects in animal and human studies.¹⁹ In clinical studies of sertraline and citalopram, the seizure risk in adult patients was minimal.¹⁹ Bupropion (Wellbutrin) is not recommended for use in children with seizures because of its association with seizures (0.4%–0.8%) when taken at high total daily doses.²⁰

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This drawing by the 7-year-old James Fernandez (next page, center) illustrates a sensation in the stomach that he feels before a seizure, which he calls "monster," and which is a recognized phenomenon in epilepsy known as "aura." Sigita Pliophlys, MD, (next page, right) who treats James for ADHD and mild developmental delay, often uses art in her work with children who have difficulties communicating verbally. James' mother, Antoinette (next page, left), plays an active role in the success of his treatment.



When referral is necessary

Families who have a trusting relationship with their primary care physician are more open to accepting a referral to a mental health clinician and seeking psychiatric treatment. Before being referred for psychiatric evaluation, it is important for children and parents to receive objective information about the relationship between psychiatric disorders and epilepsy. Education about psychiatric disorders as biological illnesses helps to decrease parental self-blame and reduce the stigma associated with mental illness.

Psychiatric referral is recommended for coexisting substance abuse issues or other psychiatric disorders, including post-traumatic stress disorder, separation anxiety disorder, nonepileptic seizures, obsessive-compulsive disorder, autism, psychosis, and bipolar disorder. Referral to a child psychiatrist also is needed if a patient has suicidal ideation or attempt, or if psychiatric symptoms are resistant to treatment. Children with prior suicide attempts should be identified as early as possible because past suicide attempts significantly increase the risk of future attempts. An unsafe family environment or parents with mental illness are also significant risk factors for treatment

failure, and these circumstances usually require more intensive psychosocial intervention and support.

Concerns regarding a child's academic difficulties should be addressed early in the course of epilepsy to identify cognitive deficits and special education needs. Parents must be educated about their rights to request a psychoeducational evaluation (a Case Study Evaluation) at school to determine a child's disability. Federal Law 94-142 guarantees educational services to children with special needs in the least restrictive environment. Parents may seek a comprehensive neuro-psychological evaluation to specifically identify a child's cognitive difficulties either through a Case Study Evaluation or independently.

Furthermore, since the responsibilities associated with caring for a child with chronic illnesses can affect the emotional state and functioning of parents and the entire family, it is very important to identify family members who are at risk for psychological problems. Referral for psychiatric evaluation or counseling for family members at risk should be part of the comprehensive management of childhood epilepsy.



Conclusion

Psychiatric disorders in youth with epilepsy are common, but often unrecognized. The primary care physician is in a key position to offer valuable assessment, education, and treatment options. Because both epilepsy and psychiatric disorders are characterized by a chronic course and a poor long-term psychosocial outcome, children who are at risk may be helped by timely recognition and appropriate treatment of psychological, as well as physical, symptoms. ■

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