Pediatric Psychogenic Nonepileptic Seizures

A Concise Review

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KEYWORDS

• Psychogenic nonepileptic seizures • Conversion • Functional neurologic disorder
• Epilepsy • Pediatric

KEY POINTS

- Psychogenic nonepileptic seizures in youth is a complex biopsychosocial disorder with high rates of medical and psychiatric comorbidities.
- Timely recognition and effective treatment of psychogenic nonepileptic seizures in youth requires a team approach, with both medical and mental health professionals conducting comprehensive evaluations and providing diagnostic feedback and interdisciplinary treatment.
- Risk factors for psychogenic nonepileptic seizures in youth are different than in adults and include social and family stress, high rates of comorbid general medical and psychiatric diagnoses, and lifetime adversities, including violence and sexual abuse, but the rates are much lower than reported in adults with psychogenic nonepileptic seizures.
- Treatment entails both short-term symptom management and return to normal daily function and long-term treatment of psychiatric comorbidities.

INTRODUCTION

Psychogenic nonepileptic seizures (PNES) is a conversion disorder (Functional Neurologic Symptom Disorder in Diagnostic and Statistical Manual of Mental Disorders 5 [DSM 5])[1] involving alterations in behavior, motor activity, consciousness and sensation that resemble epileptic seizures.[2] Unlike epilepsy, PNES are not associated with epileptiform activity in the brain as measured with electroencephalography,[3] but seizurelike symptoms develop in response to psychological stress.[4] A conceptual biopsychosocial model of conversion proposes that unresolved psychological stress

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creates a cascade effect of physical, emotional, and social consequences that perpetuate the physical symptoms.[5,6]

PNES represents up to 25% of all admissions to inpatient epilepsy monitoring units.[3,7,8] There are no population-based studies of PNES, but it is estimated that there are between 300,000 to 400,000 individuals with this condition in the United States alone.[2] Although this might be less common in the pediatric population than in adults, it is difficult to estimate its prevalence, as most studies of PNES originate from epilepsy centers in which video-electroencephalography (VEEG) aides in the most accurate diagnosis. Therefore, estimates of PNES prevalence from those studies are likely underrepresentative of the prevalence in the general population, where VEEG is less accessible.[9]

PNES in children is an understudied condition with severe medical and psychiatric comorbidity,[10–12] significant health care service burden,[13] and parental financial hardship because of missed work and cost of medical investigations.[7,14] Children with PNES who get incorrectly diagnosed with epilepsy receive unnecessary medical interventions and diagnostic tests, including intubation in the case of presumed status epilepticus. They experience academic and social difficulties because of frequent PNES episodes, missed school days, and cognitive and psychiatric side effects from the antiepileptic drugs (AEDs) given to treat their "seizures."[7,14]

Diagnostic delay in children ranges from weeks up to 3.5 years on average.[8] This delay is thought to be caused by multiple factors with the most common being misdiagnosis of epilepsy, lack of resources and access to VEEG, or family and patient not accepting that the child's symptoms have a psychological rather than physical origin.[2,15] Misdiagnosis can contribute to significant delay in treatment of underlying psychopathology, which may hamper PNES prognosis for remission in symptoms.[7] Several studies speculate that longer duration from onset of PNES symptoms to treatment can significantly impact response to the therapy, with higher rates of recidivism of symptoms and emergence of other somatic complaints.[16–18]

Psychogenic Nonepileptic Seizures Risk Factors

Historically, PNES was thought to occur as the result of a devastating experience, often sexual abuse.[3] Contrary to adults, this has not borne out in pediatric studies. In the risk factors study by Plioplys and colleagues,[19] youth with PNES were found to have a complex profile of interrelated biopsychosocial risk factors. Compared with their siblings, the youth with PNES had significantly more lifetime comorbid general medical, neurologic (including epilepsy) and psychiatric diagnoses; used more medications and intensive medical services; experienced greater anxiety sensitivity; and used more venting (solitary emotional expression) coping. The patients also reported significantly more lifetime adversities than their siblings.

In the study by Plioplys and colleagues,[19] individual child-related factors, such as fearful response to physical sensations, bullying, learning struggles, and high frequency of comorbid internalizing psychiatric disorders, made the youth more vulnerable to the development of PNES. In an earlier study examining children with epilepsy (CWE) and those with PNES, anxiety sensitivity (ie, fearful perception of somatic symptoms when anxious) was found to be more common in the youth with PNES than in those with CWE.[20]

Family functioning is postulated as impacting the development of PNES, but few studies examine this risk factor in children with PNES specifically. Youth with PNES report family stress as a significant daily hassle, although this stress was not significantly different from that reported by their siblings.[19] Family modeling and learned behavior theories postulate that youth can develop conversion/functional symptoms