Information Sheet:
For Healthcare Providers

DEPRESSION IN PEDIATRIC EPILEPSY

Features of Depression in Pediatric Epilepsy

- Symptoms of depressed or irritable mood lasting for most of the day nearly every day for 2 weeks or more AND
    - Loss of interest or pleasure in usual activities
    - Academic decline
    - Sleep and appetite disruption
    - Tearfulness for no reason
    - Agitation or significant restlessness
    - Regressive behaviors (separation anxiety)
    - Nonspecific physical complaints such as lethargy, stomachaches, or headaches.
- Hypersomnia, cognitive distortions, weight fluctuations, and substance abuse may be more common in older youth.
- In younger children, depressive symptoms may primarily manifest as irritability, such as explosive mood and outer-directed irritability.

Epidemiology

- Depression or depressive symptoms are one of the most common comorbid psychiatric disorders in children and adolescents with epilepsy.
    - A population based study of youth with epilepsy found that approximately 8% of children ages 6-12 and 20.6% of adolescents ages 13-18 years old had a clinical diagnosis of depression
    - Up to 20% of children with epilepsy report suicidal thoughts. In the majority, these are passive suicidal thoughts ("I'd be better off dead), but can be active suicidal ideation (SI; "I am thinking about how to kill myself") in 4-11% of children.
- The risk factors and etiologies for depression in children and adolescents with epilepsy are multifactorial and include neurobiological and psychosocial factors.
- Symptoms of depression may precede the first recognized seizure.
- Children with epilepsy and depression may often have a first degree relative with depression. Child depression may have a negative impact on caregiver mood and vice versa. However, children with epilepsy can also have a depressive episode in the absence of a close family history of depression.

Diagnostic Considerations for Depressive Symptoms in Pediatric Epilepsy

- Some of the anti-epileptic drugs (AEDs) have side-effects that can be similar to symptoms of depression, including feeling sad, fatigued, having difficulty falling asleep or sleeping too much, slow thinking, difficulty concentrating, feeling irritable, having poor or excessive appetite. Furthermore, in people with a prior

history of depression and/or a family history of depression, certain AEDs can cause psychiatric adverse events mimicking a depressive episode. Therefore, it is important to establish a prior personal and/or family history of depression.

- Depressive symptoms in children with epilepsy may change over time; therefore, repeated assessment is important.
- Similar to adults, cognitive symptoms of depression (e.g., difficulty concentrating, memory problems, slowed thinking) can be identified frequently in children with depression and epilepsy.
- Obtaining both child and parent report may be helpful in diagnosis**.**

Assessment Tools

- Surveys
  - There are two free survey assessment tools that are specific to depressive symptoms in children with epilepsy
    - The NDDI-E-Y is an 11-item child self-report survey and contains a SI item.
    - Neuro-QOL has an 8-item Depression subscale.
  - The Children's Depression Inventory-2 (CDI-2), a generic tool, has also been systematically used in pediatric epilepsy clinical population. The CDI-2 must be administered by a qualified mental health professional and costs approximately $2 per administration. The CDI-2 does contain an SI item.
  - Notably, screening tools provide an index of symptom severity but do not, in their singularity, provide a diagnosis of depression.
- Standardized Interviews
  - Can provide a clinical diagnosis of depression.
  - Require additional time.
  - Are usually available as a part of clinical research studies.

Treatments for Depressive Symptoms in Pediatric Epilepsy

- **Psychological Interventions**
- In the general pediatric population, cognitive-behavioral treatment (CBT) has been shown to be beneficial for improving mild to moderate depressive symptoms.
- CBT focuses on the relationships between thoughts, feelings, behaviors, and body sensations. Children learn self-regulation skills including behavioral activation, self-monitoring, relaxation, problem-solving, establishing healthy habits, and cognitive modification to improve mood.
- A variety of mental health professionals can provide CBT including child psychologists, school psychologists, counselors, social workers, and child psychiatrists.
  - Developing connections with mental health providers in community mental health clinics and private practice can assist with connection to resources and continuity of care. Pediatricians and insurance companies can assist with identifying local providers.
  - For younger children, it is important that parents be involved in treatment so they can help children apply skills in daily life.

- **Pharmacological Interventions**

- The selective serotonin reuptake inhibitors (SSRIs) sertraline and fluoxetine have been shown to be safe and effective in the treatment of depressive symptoms in children with depression or obsessive compulsive disorder.
- The most efficacious intervention for moderate to severe depression in the general pediatric population includes a combination of pharmacotherapy (e.g., SSRIs) and CBT. We do not yet have randomized controlled clinical trials examining a combined treatment approach in children with epilepsy.
    - Child psychiatrists typically are most qualified for medical treatment of mood symptoms, however, some pediatricians and neurologists may also have expertise in this area.

Resources and Links

- https://www.epilepsy.com/learn/challenges-epilepsy/moods-and-behavior
- What to do when you grumble too much: A child's guide to overcoming negativity by Dawn Huebner, PhD. This workbook teaches children cognitive-behavioral strategies to address negative thinking patterns, become better problem solvers, and improve mood. http://www.dawnhuebnerphd.com/GrumbleTooMuch.aspx
- http://effectivechildtherapy.org/concerns-symptoms-disorders/disorders/sadness-hopelessness-and-depression/
- **Mood Notes app.** This app encourages users to employ cognitive-behavioral strategies to improve mood. Includes thought monitoring, feeling identification, cognitive modification, problem-solving, and tips on changing common thinking errors.

Primary References

Guilfoyle SM, Monahan S, Wesolowski C, et al. Depression screening in pediatric epilepsy: evidence for the benefit of a behavioral medicine service in early detection. Epilepsy Behav 2015;44:5–10.

Salpekar JA, Mishra G, Hauptman AJ. Key issues in addressing the comorbidity of depression and pediatric epilepsy. Epilepsy Behav 2015;46:12–18.

Thome-Souza MS, Kuczynski E, Valente KD (2007). Sertraline and fluoxetine: safe treatments for children and adolescents with epilepsy and depression. Epilepsy Behav 10:417-425.

Additional References

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Arlington, VA, American Psychiatric Association, 2013.

Hesdorffer DC, Baldin E, Caplan R, et al. How do we measure psychiatric diagnoses? Implications of the choice of instruments in epilepsy. Epilepsy Behav 2014;31:351–355.

Kovacs. Children's Depression Inventory – 2nd Edition (CDI-2). North Tonawanda, NY; Multi Health Systems, Inc. 2010.

Lai JS, Nowinski CJ, Zelko F, et al. Validation of the Neuro-QoL measurement system in children with epilepsy. Epilepsy Behav 2015;46:209–214.

Puka, K., Widjaja, E., Lou Smith, M. The influence of patient, caregiver, and family factors on symptoms of anxiety and depression in children and adolescents with intractable epilepsy. Epilepsy Behav 2017;67: 45-50.

Reilly, C, Agnew, R, & Neville, BGR. Depression and anxiety in childhood epilepsy: A review. Seizure 2011; 20:589-97.

Wagner JL, Kellermann T, Brooks B, et al. (2016). Development and validation of the NDDI-E-Y- a depression screening tool for pediatric epilepsy. *Epilepsia, 57,* 1265-1270.

Wagner JL, Wilson DA, Smith G, et al. Neurodevelopmental and mental health comorbidities in children and adolescents with epilepsy and migraine: a response to identified research gaps. Dev Med Child Neurol 2015;57:45–52.

Disclaimer: This information sheet is designed to serve as a quick reference resource for clinicians. It is not intended to establish a community standard of care, replace a clinician's medical judgment, or establish a protocol for all patients. The clinical conditions contemplated by this information sheet will not fit or work with all patients. Approaches not covered in this information sheet may be appropriate.