ADHD Pediatrics

Introduction
Attention Deficit Hyperactivity Disorder (ADHD) is the most common neurobiological disorder of childhood. ADHD affects every aspect of a child’s life including academic achievement, social interactions and family relationships. The prevalence of ADHD as reported by the CDC is approximately 11% in all children with a higher prevalence in boys versus girls. Given this prevalence data ADHD is now one of the most common chronic conditions of childhood with adverse consequences that persist through adolescence into adulthood. The burden of illness associated with ADHD is high for affected individuals, their families, and society at large.

The following recommendations are supported by ICSI guidelines and the clinical practice guidelines developed by the American Academy of Pediatrics. The evaluation of ADHD cannot typically be completed in a single office visit due to the comprehensive nature of a complete and thorough evaluation.

Signs and Symptoms
The primary care physician should consider an evaluation for ADHD if a child presents with concerns regarding learning problems and/or behavior problems. Typically there are core symptoms of impulsivity, inattention and hyperactivity. However the presenting symptoms will vary depending on the age, developmental level of the child and the academic demands at different grade levels. Parents may report that the child is noncompliant, disorganized, appears zoned out, has labile moods, and/or seems socially/emotionally immature. Parents may also report that teachers are concerned about off task behavior, social interaction difficulties and school failure.

Diagnostic Evaluation and Screen for Coexisting Disorders
Data on the child’s symptoms and functioning should be gathered from both parents and school personnel. In the case of preschoolers child care may be a source of data. The diagnostic evaluation for ADHD must involve information from 2 different sources. Parent and teacher rating scales that use DSM-V criteria for ADHD are helpful in obtaining the
specific information to make a diagnosis on the basis of DSM-V criteria. Suggested rating scales include but are not limited to the following: Vanderbilt ADHD Diagnostic Rating Scale, ADHD-IV Rating Scale, Child Attention Profile and Conners Parent and Teacher Rating Scale. If scores are elevated consider onset of symptoms, pervasiveness, duration and level of impairment.

Through clinical interview with parents and the child, clinicians must also screen for common co-morbidities including anxiety, depression, oppositional defiant or conduct disorder, language and learning disabilities. A thorough history of biomedical problems such as seizures, tics, hypothyroidism or sleep problems must be included. Finally it is important to obtain psychosocial and family history. In absence of other concerns no further diagnostic testing will assist in making the diagnosis. Standardized psychological testing such as computerized test of attention, have not been found to reliably differentiate between youth with and without ADHD.

Child/adolescent interview is essential to assess a child’s concerns regarding his/her own behavior, family relationships, peers and school. A validated self-report instrument of ADHD and coexisting conditions such as the Conners self-report can aid the assessment process.

Clinicians must assess growth parameters, blood pressure, and complete a general physical exam with emphasis on developmental and neurological examination. Hearing and Vision screening should also be completed.

**Diagnostic Criteria**
The following must be documented for a child to meet diagnostic criteria:

- At least 6 of the 9 behaviors described in the inattentive domain occur often or very often
- At least 6 of the 9 behaviors described in the hyperactive impulsive domain occur often or very often
- The impairments must be present in 2 or more major settings
- Symptoms must be present before 12 years of age
- Symptoms have persisted for at least 6 months
- There is evidence of significant clinical impairment in social, academic or occupational functioning because of the behaviors.
- Symptoms are not attributable to another physical, situational or mental health conditions.

DSM-V criteria define 3 subtypes of ADHD

1. ADHD- primarily inattentive type
2. ADHD –primarily of hyperactive/impulsive type
3. ADHD- combined type

**Treatment**
If a child has been found to meet criteria treatment should be initiated by the primary care physician. Although evidence is variable on the cardiovascular risks of stimulant medications, a thorough history of cardiac symptoms and a cardiac family history should be completed.
Stimulant medications and non-stimulant medications are approved for the treatment of ADHD. The choice of formulation depends on length of coverage, whether a child can swallow pills and expense. The extended release medications provide consistent and sustained coverage with fewer administrations per day. Adolescents often require longer coverage during evening study time and driving, in this case a short acting preparation might be used in addition to long acting preparation.

All approved stimulants are methylphenidate or amphetamine compounds which have similar effects and adverse effects. There is extensive evidence of efficacy and safety; hence these medications should be first line in treatment.

**Further treatment considerations:**
It is important to prepare parents and children for initial medication process that will include titration. Begin with low dose of medication and titrate to the dose that provides the maximum benefit and minimal adverse side effects. Stimulant medications can be titrated every 3-7 days. A follow up is recommended within 4 weeks of beginning medication during which clinicians review response to dose, monitor adverse effects, pulse, blood pressure and weight. Follow up is recommended within 3 months and then at minimum every 6 months. It is essential to monitor core symptoms and target goals.

**Special Considerations**

**Preschool age children:** There is now increased evidence that appropriate diagnosis can be provided for preschool aged children. First line treatment is Parent-focused behavior therapy/parent-training program (not individual therapy or play therapy). Encourage parents to enroll preschoolers in a Qualified preschool program. Consider referral to Early Childhood Special Education Programs if there are other developmental or social/emotional concerns. If medications are indicated evidence suggests Methylphenidate is safe and efficacious.

**Adolescent age children:** It is important to expand assessment to include screening for drugs/EtOH use, intimate relationships, driving, and support system. The adolescent must be educated and included in the treatment plan as they will be transitioning to adult care with time.

**References**


Questions: Please reply to this e-mail, and your questions(s) will be directed to the author of this Pearl, Anjali Goel, MD.

Pearls of Knowledge Archive

All Pearl recommendations are consistent with professional society guidelines, and reviewed by HealthPartners Physician Leadership.