Review of Pediatric Attention Deficit/Hyperactivity Disorder for the General Psychiatrist

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Attention deficit/hyperactivity disorder (ADHD) is a common and impairing psychiatric condition, affecting significant numbers of children and adolescents. General psychiatrists serve, both by choice and out of necessity, in the assessment and treatment of children and adolescents who have ADHD and in the education of patients and their families. For many clinicians, however, there are numerous unanswered questions regarding the diagnosis and therapeutic interventions for ADHD. This article provides general psychiatrists with a practical overview and update on the assessment, diagnosis, and treatment of pediatric ADHD.

Background information, recent relevant research, current evidence-based practice guidelines, and tips for clinical practice are reviewed in this article. The information is presented in a question-answer format.

HOW COMMON IS ATTENTION DEFICIT/HYPERACTIVITY DISORDER?

ADHD is one of the most common psychiatric disorders in pediatrics. Conservative estimates report ADHD prevalence rates of 3% to 7% in children,[1] with other estimates

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as high as 7% to 12%.[2,3] Even if the conservative reports are the most accurate, ADHD is clearly a significant public health issue. Additionally, as many as 60% to 85% of children diagnosed with ADHD continue to meet criteria for the disorder as teenagers, and up to 60% continue to experience symptoms as adults.[4–7] It is critical that clinicians be skilled at identifying and managing this impairing condition.

Although ADHD is most commonly diagnosed between ages 7 and 10 years, symptom presentation and impairment can often be seen in children as young as 3 years of age.[8] Epidemiological studies have shown that 2% to 6% of preschoolers meet diagnostic criteria for ADHD.[8,9] Because inattention, impulsivity, and hyperactivity can all be appropriate behaviors for a young child, making a diagnosis of ADHD requires the degree and impairment of these symptoms to be beyond what is developmentally appropriate.

ADHD is diagnosed more often in boys than girls, with a ratio of about 3:1 in clinical settings.[10] This difference may be attributable at least in part to a referral bias[10] because girls may be less disruptive and more likely than boys to meet criteria for the inattentive subtype. With increasing awareness of the variability in the clinical presentation of ADHD in children, girls are now being diagnosed and treated more frequently.

WHY IS IT IMPORTANT TO TREAT ATTENTION DEFICIT/HYPERACTIVITY DISORDER EARLY AND EFFECTIVELY?

One of the crucial elements for making a diagnosis of ADHD is identifying significant impairment in functioning in at least two settings. Three- to 5-year-old children who have ADHD have been shown to be at increased risk for academic, social, behavioral, and family dysfunction.[11] Affected preschoolers are more likely to need special education services and have increased academic difficulties.[12,13] These young children are also at higher risk for accidents and injuries,[13] aggression,[14] and internalizing symptoms.[15]

Throughout grade school, children who have ADHD demonstrate increased difficulties in peer interactions, academic struggles, and conflicts with parents when compared with children who do not have ADHD. Adolescents who have ADHD continue to face significant challenges. Clinical lore has historically led us to think children who have ADHD simply outgrow the disorder with puberty. We now know, however, that ADHD often persists into adolescence and adulthood and is associated with increased rates of substance use and abuse, motor vehicle accidents, academic and occupational impairments, unplanned pregnancy, and sexually transmitted diseases.[16]

WHAT CAUSES ATTENTION DEFICIT/HYPERACTIVITY DISORDER?

ADHD is a disorder with strong neurobiological underpinnings. In a meta-analysis, Faraone and colleagues[17] estimated the heritability of ADHD to be approximately 76%. Although genetics play a significant role,[17,18] nongenetic factors and environmental exposures, such as prenatal smoking and alcohol use, pre- and neonatal hypoxia, lead exposure, and traumatic brain injury have also been associated with the development of ADHD.[19–22] Additionally, neuroimaging studies have reinforced the biological etiology of the disorder by consistently demonstrating structural and metabolic differences in the brains of individuals who have or do not have ADHD.[23,24]

HOW DOES ATTENTION DEFICIT/HYPERACTIVITY DISORDER TYPICALLY PRESENT IN THE PEDIATRIC POPULATION?

Hyperactivity is the most common presenting symptom for preschool children who have ADHD.[25] Inattention becomes more apparent during the school-aged years