Attention-deficit/hyperactivity disorder is a developmental disorder with neuro- and psycho-biological correlates on affective, cognitive, and behavioral dimensions, characterized by inattentiveness, hyperactivity, and impulsivity that is associated with social and academic impairment.

Although current diagnostic criteria specify that onset is before age 7 years, it is often a persistent disorder that extends into adulthood.

In the recent World Health Organization World Mental Health Survey Initiative, an average of half of all children with attention-deficit/hyperactivity disorder (ADHD) continued to meet Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) criteria for ADHD as adults. Persistence was most associated with the combined type of childhood syndrome (odds ratio [OR] = 12.4) and less so for the impulsive-hyperactive type alone (OR = 2).

HIGH PREVALENCE RATES

The recent National Comorbidity Survey Replication found an estimated prevalence of adult ADHD of 4.4%. However, fewer than one in five adults with ADHD were diagnosed or treated, oftentimes due to under-recognition of symptoms. This is despite the presence of significant disability and impairments in functioning on multiple levels, including self-care, mobility, cognition, days of work, productivity, achievement, social relationships, legal issues, and safety, as shown by multiple long-term, epidemiological and clinical studies.

Although ADHD may be accurately thought of as a potentially chronic condition, the core symptoms of ADHD often present differently in adults than in children. This is not widely known by the public, by primary care doctors, or by adult psychiatrists, possibly due to stigma or inadequate education. Childhood hyperactivity may manifest as adult inner restlessness, feeling on the go, or inability to relax. Inattentiveness noted in children may be better described in adults as distractibility, disorganization, being late, being bored, lack of overview, and difficulty making decisions.

Impulsivity may be expressed as impatience, acting without thinking, spending money recklessly, and/or starting or ending new jobs and relationships on impulse. This change in symptom profile — especially the decline in hyperactivity — may lead to the patient’s (and doctor’s) erroneous assessment that medication is no longer required.

Many adults with ADHD experience lifetime mood lability, with highs and lows and short tempers. Many will not have settled by age 30 years, but will continue to change or lose jobs and relationships. Adults with ADHD may feel and often experience being thought of as lazy or intentionally/voluntarily underachieving, further deteriorating their self-esteem and confidence. Even a high IQ does not protect adults with ADHD from feeling lonely, isolated, and ashamed.

Of particular note is the presence of executive function deficits, which are present in one-third to one-half of adults with ADHD, and are often associated with a high degree of impairment. (For a recent comprehensive review of ADHD...
Biologically, family and twin studies have shown high heritability of ADHD, with estimates around 70% to 80% (See Franke et al\textsuperscript{7} for a recent review of the genetics of adult ADHD), and structural and functional neuroimaging studies have found cerebral abnormalities — some of which can be normalized with medication treatment — that persist into adulthood.\textsuperscript{8-12}

**IMPORTANCE OF CLINICAL HISTORY**

The clinical history and interview form the centerpiece of diagnosing ADHD in adults, with the clinician carefully discerning childhood onset, persistence, and current presence of symptoms, as well as evaluating for comorbidity, psychosocial stressors, and family history. Essentially, the clinician must assess for the presence of trait-like symptoms over time, as well as more severe symptoms resulting in significant impairment.

Assessing for impairment is crucial because, as with anxiety and depression, symptoms of ADHD may be continuously distributed throughout the population and experienced by most people, but not to a persistently impairing extent. This is indicated by problems with self-esteem, social dysfunction, behavioral problems, development of comorbidity, etc.

There are currently no neurobiological or neuropsychological tests with the sensitivity and specificity to serve as individual diagnostic tests.\textsuperscript{4} Likewise, in clinical practice, rating and symptom scales are used primarily in an accessory manner and can neither solely make nor refute the diagnosis.\textsuperscript{13}

**PRESENCE OF COMORBIDITIES**

The presence of comorbid psychiatric disorders is the rule in adults with ADHD and includes mood and anxiety disorders, personality disorders, substance use disorders, tic disorders (more in children and adolescents), and sleep problems, among others. When co-occurring with ADHD, such disorders are often associated with their own greater symptom severity, treatment non-adherence, treatment refractoriness, lower patient insight, and poorer long-term outcomes.\textsuperscript{3,14,15}

Additionally, the presence of such comorbid syndromes may serve to mask symptoms of adult ADHD; the National Comorbidity Survey Replication found that most individuals with ADHD and a comorbid disorder had received treatment for the latter rather than for ADHD.\textsuperscript{3}

Although some studies have found that successful treatment of childhood and adult ADHD may have positive effects on symptoms of coexisting psychiatric disorders, this treatment implication does not appear to have made its way into much clinical practice with adults.\textsuperscript{16}

**NEW DIAGNOSTIC CRITERIA**

Treatment of adult ADHD may lead to improvements in psycho-social impairment, associated features, and comorbid disorders. On a hopeful note, the ADHD and Disruptive Behavior Disorders Workgroup of *DSM-5* has worked to better reflect the characteristics and natural course of the disorder and ameliorate the lack of diagnosis and treatment received by adults with ADHD. (While the American Psychiatric Association’s board of trustees has recently approved this new edition of the diagnostic

**VARIETY OF PRESENTATIONS**

In several of the case challenges in this issue, the authors present patients with significant comorbidities, as well as patients representing diagnostic dilemmas. These diagnostic issues are further clouded by the fact that symptoms resulting from ADHD (eg, mood lability) may often be mistaken for comorbid psychopathology (eg, borderline personality disorder, bipolar disorder, dysthymia, etc.) and clinically treated as if they arose from such comorbidity.

While affective instability in adult ADHD patients may certainly be reflective of a comorbid syndrome, it is often the case that affective instability (and other clinically significant symptoms) results instead from core aspects of ADHD. In fact, recent trials in ADHD patients have shown that affective instability improves with stimulant pharmacotherapy, as does low self-esteem, anger outbursts, cognitive problems, and social and family functioning.\textsuperscript{4,17}

**There are many difficulties inherent in evaluating and treating adults with ADHD, with diagnosis often being the trying first step.**
manual, specifics likely will not be available until publication in May 2013.)

The ADHD workgroup has proposed: 1) changing the age of onset of impairing symptoms from age 7 years to age 12 years; 2) changing the nomenclature of the three “subtypes” (ie, predominantly inattentive, predominantly hyperactive-impulsive, combined) to “current presentations”; 3) adding a fourth presentation for restrictive inattentive type (ie, threshold inattentive symptoms and very few hyperactive-impulsive symptoms); 4) changing the described examples to accommodate a lifespan relevance of each symptom and to improve clarity; 5) modifying the preamble to indicate that information must be obtained from two different informants (parents and teachers for children and third party/significant other for adults) whenever possible.18

CASES IN THIS ISSUE

There are many difficulties inherent in evaluating and treating adults with ADHD, with diagnosis often being the trying first step; the clinician must distinguish among the panoply of comorbid disorders and create a symptom narrative extending dozens of years back in time. Phenomenological diligence, thorough corroborative assessments, and contemporary knowledge of emerging literature are required for effective diagnosis and further treatment planning. Along these lines, the following compilation of case challenges includes a small slice of these difficulties and how some academic psychiatrists have navigated the process.

Garakan and colleagues (see page 10) present their work treating a geriatric patient with ADHD, detailing the lack of response to and/or intolerance of multiple psychopharmacological interventions. Describing their thinking behind each step in their treatment of this challenging patient, they eventually reach clinical efficacy through a combination of psychopharmacological and psychotherapeutic strategies.

Data increasingly show that psychological treatments may in fact play a critical role in the clinical care of adults with ADHD.19-21 Further describing this application, LaLonde and colleagues (see page 15) present their use of Mary Soltanto’s evidence-based cognitive-behavioral therapy (CBT) approach developed specifically for patients with adult ADHD. This form of CBT is used for more than augmentation of medications. It also helps the patient develop coping skills and strategies to address organizational, executive, interpersonal, and other cognitive and affective impairments, and assists patients in the best ways to “make use of” their newfound freedom from the symptoms of ADHD.

Furthering a focus on executive dysfunction, Soleimani and colleagues (see page 20) present two diagnostic dilemmas through which they describe the overt and more subtle cognitive deficits experienced by adults with ADHD, as they compare these phenomena to those observed in patients with bipolar disorder.

Following the well-established bidirectional link between ADHD and substance use disorders and the recognized paucity of ADHD treatment this population receives, Leikauf and Ivanov (see page 26) describe the treatment of a methamphetamine-abusing man found to have ADHD symptomatology. They highlight the risks involved in such treatment and provide guidelines for evaluation and management in similar cases.

Working with another potentially problematic comorbidity, Leib and Coffey (see page 30) detail the effective use of psychopharmacology to treat ADHD in a young adult with a comorbid tic disorder.

Along with the authors represented in the following case challenges, I hope you and your patients benefit from a deepened recognition of the diagnostic challenges in and therapeutic potentials for adult ADHD. I would also like to express great appreciation to Jeffrey H. Newcorn, MD, who dedicated his expertise in reviewing many of the cases that follow.

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