Attention Deficit/Hyperactivity Disorder At A Glance*

ADHD is persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development. It generally has its onset in childhood, and because it is a developmental disorder, its presentation may change with advancing age. Typically, the symptoms, when present, exist in almost any setting the individual with ADHD is exposed to. Commonly, hyperactivity and impulsivity decline with age while attention problems persist.

Terms that have been used to describe children with "distractability, impulsivity, and usually overactivity" include minimal brain dysfunction/damage (MBD), hyperkinetic reaction, and hyperkinesis.

The diagnosis of ADHD has generated great controversy involving clinicians, teachers, policymakers, parents, and the media. Opinion about ADHD range from those who do not believe it exists to those who believe that there is genetic and physiological evidence supporting its existence.

Diagnosis and treatment of ADHD is frequently problematical because approximately 65% of persons with ADHD may have at least one comorbid disorder in the form of anxiety, communication, mood, conduct, oppositional defiant, and learning disorders; Tourette's syndrome; and subnormal intelligence. ADHD has been associated with impaired academic achievement, rejection by peers, and family resentment and antagonism. For this reason, it also is likely that children and adults with other behavioral problems and disorders are, to some unknown degree, mistakenly diagnosed with ADHD.

DIAGNOSIS

The assessment of ADHD in children and adolescents should include (American Academy of Child and Adolescent Psychiatry, 2006; Nutt 2007):

- Psychiatric, developmental, social, educational, family, and medical history from the person served and the family. Family history should include questions about parental ADHD and cardiac history
- Review of medical evaluation, including physical exam and lab tests, to rule out medical causes of the signs and symptoms.
- Rating scales from the person served, parents and teachers
- Comprehensive assessment for comorbid psychiatric disorders.
- Observation

Adults generally have more cognitive than hyperactive symptoms. Self-report and clinician-administered rating scales aid in the assessment of ADHD these symptoms in adults.

TREATMENT

There also is variation and controversy about the treatment of ADHD, which often includes stimulant medication. To reduce inappropriate variation in treatment, major

organizations in North America are in the process of developing, practice parameters or clinical practice guidelines to inform treatment decisions.

Research indicates that stimulants may be more effective than nonpharmacological interventions. There is not yet sufficient evidence to support the use of nondrug interventions as adjunct to treatment with stimulants.

Medications

Many persons with ADHD benefit from long-term treatment with medications. Medication should aim to improve ADHD symptoms with minimal adverse effects, address comorbidities, minimize the potential for abuse, provide uninterrupted coverage and be administered in a form that maximizes adherence.

Amphetamines and methylphenidate are first line treatments available in short-acting and slow-release formulations. About three-quarters of school-aged children with ADHD respond to stimulant medications. Children and adolescents with comorbid conduct problems are usually insufficiently treated by stimulants alone, and need psychosocial treatment as well. Adults, including those naïve to treatment, also may benefit from the use of stimulant medications.

Stimulants primarily affect the hyperactivity, impulsivity, and inattentiveness, and aggression. The onset is rapid, the dose is readily adjusted and adverse effects are generally mild and easily managed.

For as many as 30% of persons served, stimulants do not sufficiently relieve ADHD symptoms. And negative side effects, including headache, insomnia, abdominal pain, blood pressure changes, appetite reduction, tics, weight loss, and reduced growth rates for children may occur.

Atomoxetine, a non-stimulant, relatively long-acting, selective norepinephrine reuptake inhibitor, also is used as first line treatment for ADHD. Unlike controlled substances there is no abuse potential. Clinicians have reported using atomoxetine when anxiety, depression, or tics complicate ADHD and in combination with stimulants when persons served do not responded to a trial of either alone. Atomoxetine has not been found as effective for ADHD symptoms as stimulants. It also has a black box warning from the FDA about the potential for increased suicidality. In addition, it is much more likely to result in morbidity or mortality when taken in overdose (either accidental or otherwise) than are the stimulant medications.

Antidepressants also have been used to treat ADHD and may be effective for persons served with comorbid depression and/or substance abuse. Like atomoxetine, there is the potential for increased suicidality, so persons served must be closely monitored.

Behavioral Treatment

Research suggests that pharmacological intervention is more effective than behavioral treatment alone. Behavior therapy alone is however, indicated in certain clinical situations, e.g., if ADHD symptoms are mild with minimal impairment, the diagnosis of ADHD is uncertain, parents refuse medication treatment, or there is marked disagreement about the diagnosis between parents or between parents and teachers. The family's preference should be considered when choosing a treatment modality.

*Adapted from Treatment of Attention-Deficit/Hyperactivity Disorder Evidence Report/Technology Assessment Number 11, Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services, November 1999.