Attention Deficit Disorder

 Author Note

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Attention deficit disorder is a clinically heterogeneous neuropsychic disorder that makes it difficult to control impulsivity, pay attention or manage excitable behavior. It is associated with enormous financial burden, adverse vocational and academic outcomes, and stress to families. This disorder is multifactorial with complex etiology and affects the child's quality of life. The inattention component of attention deficit disorder is manifested by difficulty in focusing, daydreaming and distractibility whereas, the hyper component is expressed as restlessness, fidgeting and excessive talking. Attention deficit disorder is amongst the most common neurobehavioral disorder in children. It is associated with a high rate of psychiatric conditions such as mood and anxiety disorder, substance use disorder and oppositional defiant disorder. Worldwide, this disorder affects approximately 4 – 12 % of school-aged children. During the last few decades, epidemiological studies have shown high rates of concurrent learning and psychiatric disorders among ADHD patients. Anxiety usually confounds the treatment and diagnosis of ADHD. The likelihood of depressive disorder increases two folds in ADHD. Recent studies have shown that stimulant decreases the risk of depression and anxiety in ADHD patients (Potvin, Charbonneau, Juster, Purdon, & Tourjman, 2016).

**Symptoms of ADHD**

The symptoms of ADHD vary from one person to another but it consists of hyperactivity, impulsivity and inattention(Fuller-Thomson & Lewis, 2015).

**Inattention**

 People with inattention have a very hard time keeping their mind focused. Focusing on completing and organizing routine tasks sometimes become very difficult for ADHD patients. These people forget things easily and suffer from procrastination, trouble staying seated during activities and meeting and restlessness.

**Hyperactivity**

 People with ADHD are not able to sit still. These individuals have difficulty playing quietly. They usually interrupt conversations, activities and games. They use other people’s belongings without their permission.

**Impulsivity**

Those individuals who are overly impulsive are unable to think before they act. Impulsivity makes it difficult for them to wait longer for the things they want. They usually have difficulty in making friends. Recent studies have shown that the prevalence of ADHD is 7-8% among school-going children. The prevalence of ADHD varies with risk factors such as gender, age, family dysfunction, chronic health problems and the presence of developmental impairment. ADHD disorder is present in almost all countries. Current advances in neuroimaging, behavioral, cognitive neurosciences have provided great evidence that attention deficit disorder is a complex neurobiological disorder.

**Comorbid Conditions**

Child ADHD usually co-occurs with different psychiatric disorders that include anxiety, disruptive behavior and mood disorders. Similarly, adult ADHD is associated with a diagnosis of mood, anxiety and substance use disorder. In adults, ADHD is not always comorbid with different psychiatric disorders and studies have shown that it exists in 20-26% of adults.

**Current Research**

During the past 30 years, research has been published on attention deficit disorder. In the last 3 years, different theories of ADHD therapies have evolved. Different pharmacological agents affecting α-2-adrenergic and catecholaminergic transmission are used in the treatment. Over the last few years, attention has been paid in prescribing pattern of medicines related to patient characteristics and the factors which promote adherence of treatment in young adult and pediatric population.

**ADHD Treatment**

There are both nonpharmacological and pharmacological treatments for ADHD. Pharmacological treatments are more commonly used and consist of stimulant medications such as dexmethylphenidate, mixed amphetamine salts, methylphenidate and lisdexamfetamine dimesylate (LDX). Nonstimulants such as clonidine, atomoxetine, and guanfacine are also proved to be efficacious in treating attention deficit disorder. Other than medicines, non pharmacological treatments are also very common. Teachers and parents adopt effective behavioral management techniques that aim to reduce behavioral problems in children with ADHD. Child behavioral therapy is an effective approach for the treatment of ADHD (Chan, Fogler, & Hammerness, 2016).

**Stimulants**

For most ADHD patients, stimulant remains the first choice. Meta-analysis has shown that stimulants are more efficacious than non-stimulants. For both the amphetamine and methylphenidate families, there are wide arrays of choices that enable physicians to better tailor the dose of medicines. Studies have shown that methylphenidate and osmotic-release oral system lessens the symptoms of ADHD with increase adherence. Transdermal methylphenidate and dexmethylphenidate extended-release are also effective in treating ADHD. In recent studies, it is found that comorbid anxiety does not affect the efficacy of stimulants. Stimulants decrease the likelihood of the occurrence of other psychiatric comorbidities in adulthood such as cigarette and substance abuse. The side effects associated with stimulant treatment include trouble with sleep and decreased appetite. Serious cardiovascular adverse effects have been reported with the use of stimulants. However common side effects on heart rate and blood pressure are of no clinical significance.

**Non-stimulants**

Some children are not able to tolerate treatment with stimulants due to its side effects such as loss of appetite. Several non-stimulant medications are also used for the treatment of ADHD. The non-stimulants that are used for attention deficit disorder include reboxetine and modafinil. Drugs that are approved by the FDA for ADHD treatment include atomoxetine, norepinephrine reuptake inhibitors, clonidine, and guanfacine. Both gaunfacine and clonidine have been approved by the FDA for co-administration with stimulant medications. Specialized educational planning is also used for treating children with ADHD. Learning disorders occur in approximately 1/3rd of the youth, therefore, ADHD children must be screened and adequate educational plans should be developed. Children with ADHD usually suffer from academic failure and tend to have more injuries and accidents as compared to children who don't have ADHD. These children have poor self-esteem and trouble interacting with others. These children are at an increased risk of alcohol and drug abuse. The exact cause of ADHD is not clear. Factors that contribute to the development of ADHD include environmental, genetic and problems with the central nervous system.

**References**

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