NATIONAL ASSOCIATION OF SCHOOL PSYCHOLOGISTS

ADHD and Medications: A Guide for Parents

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Attention deficit hyperactivity disorder (ADHD) is the most common neurobehavioral health condition in children. Children with this disorder have difficulty focusing and sustaining their attention appropriately. Depending on the subtype of their ADHD, children may also exhibit high levels of physical activity and have difficulty planning their actions and controlling their impulses. A comprehensive assessment is necessary to diagnose ADHD and to rule out underlying or associated medical or behavioral problems. This assessment also enables the physician to develop individualized recommendations for home and school management. Unless there is a crisis, all academic and behavioral interventions and accommodations should have been implemented for a reasonable period before medication is considered. The use of medication is just one part of the management plan.

STIMULANTS AND RELATED MEDICATIONS

The medications most commonly used in the treatment of ADHD are *stimulants* such as methylphenidate (Ritalin) and atomoxetine (Strattera), a *selective norepinephrine reuptake inhibitor*.

Stimulants

Stimulant medications stimulate activity in specific areas of the brain that are responsible for the attention controls. They do this by altering the concentration and sensitivity of *dopamine* and *norepinephrine*, two chemicals that transmit messages in the brain.

Benefits of stimulants. Research has clearly established that stimulants improve the ability to:

- maintain focused attention
- decrease distractibility
- limit impulsiveness and activity levels

Common stimulants. The most widely used stimulant medications are *methylphenidate* (brand names Ritalin, Focalin, Concerta, Methylin, Daytrana, and Metadate) and forms of *amphetamine* (Adderall, Dexedrine, and Vyvanse). Although these compounds differ slightly in biochemical structure and mechanisms of action, their clinical effects and side effects are very similar.

Common side effects. The most commonly encountered side effects are decreased appetite and difficulty falling asleep. A potential problem is the rebound effect as the medication wears off and leaves the system. Rebound effects can be seen as hyperactivity, irritability, or unhappiness. Side effects such as headache and stomachache are less frequent. Rarely, a rapid motor movement, or tic, may be exaggerated. Stimulants can be associated with a very slight decrease in growth rate in a small subgroup of children.

Potential abuse. There is potential for abuse of the stimulant medications by individuals who obtain the medications illegally and inhale or inject crushed tablets. This is an extremely dangerous practice. The long-acting medications, such as Concerta, are less likely to be abused.

Unusual complications. Following reports of sudden death in individuals who were using stimulant medications, the FDA carried out comprehensive reviews of research studies and other information related to stimulant medications. Although the findings did not indicate an overall increased risk of cardiac

complications in children taking stimulants, the FDA did recommend specific warnings for individuals using these medications. Thus, if there is a family history of sudden cardiac death at a young age, or if the child has a congenital heart anomaly, evaluation by a cardiologist is recommended prior to starting medication. This should also be carried out if a child taking stimulant medication complains of chest pain or irregular heartbeat. There have also been very rare reports of patients experiencing unusual thoughts or hallucinations on these medications. If a child were to complain of such symptoms, these should also be carefully evaluated.

Atomoxetine (Strattera)

Another medication that does not fall in the category of stimulant medications but has a similar mechanism of action is atomoxetine (Strattera). This medication is a selective norepinephrine reuptake inhibitor and is not a controlled substance.

Benefits. Atomoxetine helps in improving attention, but its effects are usually not as dramatic as those of the stimulants.

Potential side effects. Among children and teens, atomoxetine can cause mood swings, fatigue, dizziness, decreased appetite, and upset stomach. However, serious side effects have been observed, including anxiety, agitation, panic attacks, trouble sleeping, irritability, hostility, aggressiveness, impulsivity, restlessness, mania, depression, and suicidal thoughts. New mental and medical health problems have also been observed, including psychotic symptoms, liver, and heart problems. Atomoxetine can inhibit growth in children, and some may experience allergic reactions including hives and swelling. Severe reactions are generally rare (occurring in less than 1% of children and teens taking Strattera), but parents and caregivers should be alert to any unusual reactions and suicidal comments or gestures and immediately seek medical attention.

OTHER MEDICATIONS USED IN ADHD TREATMENT

Two other groups of medications are used in the treatment of attention problems.

Atypical Antidepressants

The medications known as *atypical antidepressants* have effects on both the serotonin and dopamine systems and can be effective in students with associated mood or anxiety problems and ADHD. These medications include Wellbutrin (Bupropion). The primary side effects of these medications are possible agitation, worsening depression, and lowered impulse control.

Alpha Adrenergic Medications

The *alpha adrenergic* medications Catapres (Clonidine) and Tenex (Guanfacine) can also be effective in selected situations. These medications are primarily used in the treatment of high blood pressure; however, they also act to decrease the level of nervous system arousal in children who are very impulsive or who tend to be aggressive. They have been used in combination with stimulant medications and can be helpful for those children who have difficulty falling asleep after taking stimulants. The primary side effect of these alpha adrenergic medications is daytime drowsiness. Because there is also a potential risk of cardiac effects, this combination should be used with caution.

DURATION OF TREATMENT

Predicting how long an individual might need to remain on medication is impossible. Changing academic or career demands, increased understanding of circumstances that aid attention, and maturational changes of the central nervous system may enable a person to discontinue medication. With the help of his or her prescribing doctor, the decision to continue or stop a given medication may be made as your child matures.

SUMMARY

To serve the student with ADHD effectively, there must be solid, consistent, and productive communication between physician, parents, student, and schools. Goals of treatment (that is, target behaviors) must be clearly defined and measured. There must be close monitoring and frequent reassessment of the ongoing need for medication. Rather than relying exclusively on group research and general guidelines, decisions regarding medication must be determined by what is best for the child as an individual.

RECOMMENDED RESOURCES

Print

Dulcan, M. K. (2006). *Helping parents, youth, and teachers understand medications for behavioral and emotional problems: A resource book of medication information handouts* (3rd ed.). Washington, DC: American Psychiatric Press.

Wilens, T. E. (2008). *Straight talk about psychiatric medications for kids* (3rd ed.). New York: Guilford Press.

Online

Attention Deficit Disorder Association: http://www.add.org

An information site for professionals, adults with ADD/ADHD, and parents of children with ADD/ADHD.

Children and Adults with ADHD: http://www.chadd.org

Information and advocacy for children and adults with ADHD.

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