UPDATE ON MEDICATIONS TO TREAT AD/HD

Research and clinical experience have shown that stimulant medications are the most effective first-line treatment for AD/HD in adults. Currently, there are many new medications to treat AD/HD. If you are a woman with AD/HD (either newly diagnosed or currently being treated with a short acting stimulant or another medication) and feel that a longer-acting medication would help to better address your symptoms, you are urged to consult a physician to discuss the medical treatment of AD/HD and the benefits you could expect from such treatment. Remember, symptoms of AD/HD affect all aspects of your daily functioning including social/romantic relationships, tasks that must be managed daily (food preparation) or weekly (laundry or shopping), and job performance. AD/HD even affects sleep with many adults reporting difficulty with falling asleep, sleeping through the night, or waking up alert the next morning. Sometimes, a single daily dose of a long-acting stimulant or a combination of a long-acting and short-acting medications may be needed to address symptoms throughout the day.

STIMULANT MEDICATIONS

Methylphenidate based products (Ritalin™, Ritalin LA™, Concerta™, Metadate™)

For a number of years, methylphenidate was available only as Ritalin™ with a duration of action, or the length of time its beneficial clinical effects can be observed, of approximately 3-4 hours. Because of this short half-life, methylphenidate required multiple daily doses to obtain clinical benefits throughout the day. Recently, a number of other methylphenidate products have become available (e.g., Concerta™, Metadate CD™ , Ritalin LA™) that require only once daily dosing to address AD/HD symptoms throughout the day. These products use different delivery systems that allow for a slow release of medication throughout the day and have been shown to have pharmacological and clinical profiles comparable to twice a day (b.i.d) or three times a day (t.i.d.) dosing with typically formulated methylphenidate. To date, there is little evidence to support the superiority of any one of the once-daily products over the others.

Long-acting Methylphenidate Medications

Products	**Concerta®**	**Metadate® CD**	**Ritalin® LA**
Formulation Technology	**OROS®**	**Diffucaps®**	**SODAS™**
Dose Available	**18/27/36/54 mg**	**20 mg**	**20/30/40 mg**
Immediate (*%*)	***22%***	***30%***	***50%***
release (dose amt)	**4/6/8/12 mg**	**6 mg**	**10/15/20 mg**
Sustained (*%*)	***78%***	***70%***	***50%***
2nd release (dose amt)	**14/21/28/42 mg**	**14 mg**	**10/15/20 mg**

Amphetamine-Based Products (Dexedrine™, Adderall™, Adderall XR™)

Both Dexedrine™ and Adderall™ are trade names for products whose active component is some form of amphetamine. Dexedrine™, which has been available for a number of years, is equally effective as methylphenidate for a number of problems associated with AD/HD, but is not prescribed as frequently. Adderall™ is the trade name for a generic compound of mixed amphetamine salts (three forms of d-amphetamine and one of l-amphetamine). It has become available for treatment of AD/HD relatively recently compared with the other stimulants and is now available as a once daily formulation (Adderall XR™). Adderall™, , which has been studied primarily in children, has been shown to be equally as effective as methylphenidate in reducing disruptive behaviors in a classroom setting, improving parent and teacher behavior ratings, and improving academic performance. It is recommended that the maximum daily dose not exceed 40 mg (PDR). It has been reported that the duration of behavioral effects ~~of~~ of Adderall ™ is generally dose-dependent with higher doses resulting in longer duration of action (e.g., 5 mg = 3.52 hours; 20 mg = 6.40 hours). This same study found similar results for the time of peak effects for Adderall™ with

lower doses resulting in shorter times to peak effects (e.g., 5 mg = 1.5 hours; 20 mg = 3.0 hours). In general, both the duration of action and the time to peak effects is longer for Adderall™ compared to methylphenidate The half-life of Adderall™ has not been conclusively determined, but given its chemical composition, it would be expected to be similar to that for Dexedrine™ (e.g., 6-7 hours). Adderall XR has a much longer duration of action (e.g. 10-12 hours).

The following table lists medications to treat AD/HD and duration of action

Immediate-release Drugs	*Description*	*Duration*
Ritalin	**methylphenidate**	**(3-4 hours)**
Focalin™:	**a refined form of Ritalin®, isolating only the effective isomer**	**(3-4 hours)**
Dexedrine	**dextroamphetamine**	**(4-5 hours)**
Adderall	**mixed amphetamine salts**	**(4-6 hours)**

Long-acting Drugs	*Description*	*Duration*
Ritalin® LA	**once-daily formulation of Ritalin® that mimics BID dosing and duration and designed to last the school day**	**(6-8 hours)**
Adderall XR™	**extended-release formulation of mixed amphetamines that mimics BID dosing**	**(8-12 hours)**
Metadate® CD	**methylphenidate formulation designed to mimic BID duration**	**(4-8 hours)**
Concerta®	**methylphenidate formulated to mimic TID duration**	**(10-12 hours)**
Dexedrine spansules	**longer-acting amphetamine**	**(8-10 hours)**

Side Effects

The main side effects of stimulants are appetite suppression and insomnia. It appears, however, that these side effects are not as severe with the long-acting stimulants. In addition, long-acting stimulants are smoother and keep symptoms at bay for many hours on end without the feelings of medication effects starting and stopping throughout the day. This long-duration may help the student address not only symptoms causing academic difficulties but also those that can affect social and daily-living activities.

Newer Non-Stimulant Medication

Atomoxetine (Strattera)

Strattera is a selective norepinephrine reuptaker inhibitor, which is indicated for the treatment of ADHD in children, adolescents, and adults. To date, 1109 children and adolescents and 536 adults have been included in double-blind, controlled trials. Strattera is currently the only agent that has an FDA-approved indication for treatment of adult AD/HD. The mode of action of Strattera in the treatment of ADHD is currently not known. However, it is the only medication that affects the regulation of norepinephine by acting as a potent inhibitor of the presynaptic norepinerhrine transporter. It is not associated with an appreciable abuse potential and is not a controlled substance.

The response to treatment of AD/HD was dose-dependent and in open label trials it was suggested that Strattera was as effective as methylphenidate for the treatment of ADHD. Dosing of Strattera depends on body weight. Children and adolescents up to 70 kg body weight should begin with 0.5 mg/kg/day; the dose should be increased to 1.2 mg/kg/day after a minimum of 3 days on the initial dose. The maximum dose should be the lesser of 1.4mg/kg/day or 100 mg/day. Adults and children/adolescents over 70 kg body weight should begin with 40 mg/day; the dose should be increased to 80 mg/day after a minimum of 3 days on the initial dose. After 2 to 4 additional weeks, the dose may be increased to a maximum of 100 mg/day in patients who have not reached optimal response. Strattera is recommended to be administered as a single daily dose in the am or pm. and with effects lasting until the next dose. It may be administered with or

without food. Although, some evidence indicates that taking with food decreases gastrointestinal side effects. Side effects include initial weight loss, gastrointestinal distress, somnolence, and some dizziness.