Gillette Children's Specialty Healthcare

A PEDIATRIC Perspective

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Using Psychotropic Medications to Treat Patients Who Have Disabilities

by Elizabeth Reeve, M.D.

Primary-care providers have an important role to play in treating behavioral disorder symptoms in children who have disabilities. Nationwide, there is a shortage of child psychiatrists, especially those who work with special needs populations, and Minnesota and the surrounding region are no exception. As a result, there is a greater likelihood that primary-care providers will be asked to treat patients who have behavioral disorders.

The following guidelines for using psychotropic drugs will enable providers to better meet the needs of patients in their practice. This article also discusses the ways in which children who have disabilities might respond to such medications. Although patients who have developmental disabilities can display a range of behavioral issues, this article focuses on four specific types:

- Symptoms of hyperactivity and attention deficit hyperactivity disorder (ADHD)
- Obsessive and repetitive behaviors
- Explosive and aggressive behaviors
- Sleep disturbances

The following recommendations emphasize behavior management in lieu of pinpointing specific mental health diagnoses.

Target Key Symptoms, Measurable Outcomes

Consult with parents, teachers and other members of the patient's care team to identify symptoms to target for treatment. Often, symptoms vary among environments. For example, a teacher might feel that impulsive aggression should be the primary focus, while parents might be more concerned with poor sleep.

Choose a measurable outcome and decide how to monitor each symptom. Determine how to quantify the changes, and make sure everyone on the team is working toward the same goals. Although it is possible for one medication to handle more than one type of problem, it remains crucial to focus on one issue at a time.

Considerations When Prescribing Psychotropic Drugs

Keep in mind that many psychotropic medications have Food and Drug Administration (FDA) black box warnings, and frequently the uses recommended in this article are considered off-label — a point you might need to explain to parents. In addition, insurers sometimes allow payment only for narrowly defined uses. For example, insurers might deny payment for a stimulant if a child has an autism diagnosis, even though that child might also have symptoms of hyperactivity and ADHD.

Treating Symptoms of ADHD

Consider using stimulants such as methylphenidate (Ritalin), d-amphetamine (Dexedrine) and mixed amphetamine salts (Adderall) for children or adolescents who display hyperactivity or inattention symptoms, even if there is not a classic ADHD diagnosis. Nonstimulant medications can also be used.

Potential Side Effects

Although stimulants can cause some relatively minor side effects, such as insomnia, headache, nausea and rebound irritability, those effects usually are manageable. For example, to prevent insomnia, give stimulants in the morning.

Patients might also experience weight loss, changes in height, tics, and cardiac effects such as tachycardia.

Weight loss – In less fragile patients, weight loss might not be a serious issue. Because patients who have developmental disabilities might already be on restricted diets or use nasogastric tubes, weight loss for them might be a greater concern. In addition, when patients are immobile and difficult to weigh, weight loss can be overlooked, resulting in significant weight loss before others notice it.

Tics – Patients with neurological impairments might be more likely to develop tics when given stimulants. Usually the tics are mild (e.g., an eye blink), do not affect function and will not progress to a more significant tic. The tics will disappear

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when the medication is withdrawn. The presence of tics before starting stimulants does not contraindicate using this class of medications. Monitor the tic before and after the medication is started. Discontinue stimulants only if the tic is clinically worse after starting the medication and causes dysfunction.

Cardiac effects – Another important concern associated with stimulants is that of sudden cardiac death. However, a study published in Pediatrics in 2006[i] found that the risk is low and the data do not warrant a change in the use of stimulants. The balance of risks to benefits still favors medication. Patients with known structural cardiac abnormalities, with a history of arrhythmia in themselves or a first degree relative, or who are adopted (with no known family history) should receive a baseline EKG before starting stimulant medications.

Recommended Practices for Prescribing Stimulants
There is generally no efficacy difference among the various stimulants, although patients might respond better to one class of drug than another. Duration of the formulations varies, so fine-tune dosing to meet the patient's needs. Unlike antidepressants or other medications, which must build up in the system before they are effective, stimulants begin working with the first dose. Consequently, a three- to four-day trial is sufficient, and doses can be increased quickly.

In addition, stimulants are fast-acting and leave the system quickly. As a result, children might resume ADHD behaviors when the drug wears off. Ask parents for corroborating evidence of the drug's effect/lack of effect before changing or discontinuing it.

Before prescribing a stimulant, review growth records and get baseline measurements. After prescribing, check height and weight every six to 12 months, more often as clinically indicated (e.g., if concerns such as a significantly decreased appetite are evident).

Obtain an endocrinology consultation for patients who significantly decrease in height and weight. Weight is generally recoverable. Although the rate of height growth will resume, the patient may not recover lost height. Document and discuss changes with the patient's family.

Prescribing Nonstimulants
Atomoxetine (Strattera); guanfacine (Intuniv, Tenex); short-acting clonidine; bupropion (Wellbutrin); venlafaxine (Effexor); tricyclics; and modafanil (Provigil) are non-stimulants that also can be used to treat ADHD. Of this group, only atomoxetine and guanfacine are FDA-approved to treat ADHD.

All nonstimulant medications must be given at regular times every day, and they take several weeks to build up to a therapeutic serum level and become effective. They cannot be stopped and started easily, as stimulant medications can. Monitoring nonstimulants might require invasive procedures, such as blood levels or EKGs.

Treating Obsessive and Repetitive Behaviors

Children on the autism spectrum and those who have other developmental issues often display obsessive-compulsive or repetitive behaviors. With classic obsessive-compulsive disorder (OCD), behaviors are typically unwanted and annoying to the patient. By contrast, patients with special needs might find comfort in their repetitive behaviors, even when they significantly interfere with day-to-day function. For OCD-type behaviors, selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine (Prozac) or paroxetine (Paxil), can be good options.

For children or adolescents who perform self-injurious behaviors, such as self-biting or hair-pulling, try SSRIs first. If the medication activates the child, SSRIs can worsen such behaviors. If the behavior is more damaging, such as eye-gouging or head-banging to the point of injury, antipsychotic medications might be a better choice. First, try the newer antipsychotics, such as risperidone (Risperdal) or aripiprazole (Abilify). If they are not effective, consider using older antipsychotics like Haldol.

Often, repetitive motor or tic-like behaviors, such as flapping or rocking, can be treated with guanfacine or clonidine. If that class of drugs is ineffective, try antipsychotics. For a further discussion of antipsychotic drugs, see Treating Aggressive and Explosive Behaviors (below).

Potential SSRI Side Effects
Common SSRI side effects include nausea, headache, fatigue, insomnia and sexual dysfunction, which may be relevant to older teens. More challenging side effects include agitation or restlessness, increased bleeding times, elevated risk of osteoporosis, and serotonin syndrome.

From 20 to 25 percent of patients report **restlessness or agitation** as a result of taking SSRIs. Restlessness is especially frustrating for patients who use wheelchairs, because they cannot simply burn off their excess energy. In younger patients, restlessness might be expressed as inappropriate behavior, such as intrusion into another's personal space, touching, tapping or hitting. This side effect might mimic ADHD-like behaviors.

SSRIs can cause **increased bleeding times**. Recent literature suggests the drugs might be associated with decreased bone mineral density, so the **risk of osteoporosis increases with long-term use**.

Serotonin syndrome and its resulting trembling, fever and chills can distress patients, particularly if they are nonverbal. The primary treatment is to remove the medication and provide support care. The use of 5-HT blockers, such as cyproheptadine and chlorpromazine, can be considered but is rarely necessary.

Recommended Practices for Prescribing SSRIs
Although there are no efficacy differences among the various SSRIs, patients might respond better to one formulation than another. Choose several SSRIs, understand their strengths and limitations, and get comfortable with prescribing them. If they do not have the desired effect, consider referring the patient to a psychiatrist. Keep in mind that abrupt withdrawal of all SSRIs (except fluoxetine) can result in flu-like symptoms that last for several days. If the patient discontinues the drug abruptly and has withdrawal symptoms, restart the medication and taper off more gradually.

Treating Aggressive or Explosive Behaviors

For aggressive or explosive behaviors, try antipsychotic drugs. The older drugs include haldoperidol (Haldol), thioridazine (Mellaril) and proclorpromazine (Thorazine). Newer antipsychotic medications include aripiprazole (Abilify), quetiapine (Seroquel) and risperidone (Risperdal).

Potential Side Effects
Although antipsychotic drugs can be effective in addressing aggressive behaviors, all can have significant side effects, such as weight gain, increased risk of diabetes, lipid abnormalities and elevated prolactin levels. Although tardive dyskinesia is associated with all of the newer antipsychotics, the condition occurs more often with risperidone and older antipsychotics.

Weight gain – Some patients gain 20 to 30 pounds while taking antipsychotics. In addition to contributing to low self-esteem, weight gain can make the difference between independence and dependence for fragile patients. A patient who uses a wheelchair may no longer be able to manage transfers alone. Added weight might also make a child harder for parents to manage. Try Topiramate (Topamax) and metformin (Glucophage) to treat weight gain, or consider different antipsychotics. For patients who are mobile, diet and exercise can help manage weight gain.

Hypertension and diabetes also are associated with increased weight. Elevated glucose is associated with anti-psychotics even if patients do not gain weight, so it is important to monitor glucose levels.

Increases in cholesterol and triglycerides can be dramatic, with or without weight gain. It is vital to get a baseline fasting lipid panel as well as fasting glucose or HgbA1c. Then check levels at six-month intervals.

All antipsychotics have dopamine antagonism, so they can **increase prolactin levels**. Estrogen increases prolactin responsiveness, so women can have greater increases in prolactin levels than men. Prolactin's effect on FSH and LH levels can contribute to amenorrhea, stimulate lactation and decrease libido. In males, increased prolactin can cause sexual dysfunction. Monitor patients for such side effects; if the effects are intolerable, reduce, change or stop the drug altogether. Risperidone might cause more prolactin changes than the other new antipsychotics. Checking prolactin levels is indicated only if clinical side effects of prolactin elevation are present and do not diminish when the medication dose is decreased. There is no need to routinely draw prolactin levels on patients who take antipsychotics.

Recommended Practices for Prescribing Antipsychotics
When choosing an antipsychotic drug, keep these guidelines in mind.

- Consider choosing drugs such as aripiprazole, which may have lower metabolic risks.
- Give ziprasidone (Geodon) with food — absorption may vary by as much as 60 percent if patients take the medication without food.
- Consider quetiapine, which might have an added antianxiety benefit and can help with sleep issues.
- Avoid olanzapine (Zyprexa) because of its side effect profile. It has a greater risk for metabolic syndrome.
- Always get baseline glucose and fasting lipids and weight. Calculate BMI. Repeat laboratory tests within three months of starting the drug and then every six months, even if the patient does not gain weight.
- Use these dosing guidelines:
  Abilify - 2.5 to 20 mg, dose in morning
  Seroquel - 25 to 600 mg total daily dose, varied dosing strategies
  Risperdal - 0.125 mg bid to 3 mg bid

Treating Sleep Disturbances

For a variety of reasons, children who have developmental disabilities might have sleep disturbances. Consider and assess medical causes, such as untreated pain or sleep apnea. Discuss family environment and sleep hygiene issues. When sleep problems continue despite efforts to correct environmental and treat medical issues, it is important to treat the sleep issues. Chronic sleep deprivation can lead to significant behavioral changes, including changes in memory and cognition, irritability and aggression.

To address sleep issues, begin with over-the-counter sleep aids such as Benadryl and melatonin. If they are ineffective, consider clonidine (Catapres), an antihypertensive. Clonidine is most useful in patients who have trouble falling asleep, but once asleep are able to maintain sleep. Clonidine may be used in low doses (0.1 to 0.2 mgs) at bedtime to induce sleep. It is short-acting and will not cause daytime drowsiness. Trazodone (Desyrel) or mirtazapine (Remeron), both antidepressants, may

be more useful for children who have trouble falling asleep and maintaining sleep. Other options include imipramine (Tofranil), doxepin (Silenor), quetiapine, zolpidem (Ambien), eszopiclone (Lunesta) and ramelteon (Rozerum).

Potential Side Effects of Sleep Medications
Side effects of sleep medications vary depending on the choice of agent. Clonidine is typically tolerated well with few side effects except sedation, which is desired. Trazodone and mirtazapine can both cause **"hangover" sedation** the next day. Mirtazapine typically causes **weight gain**, which may be substantial. With mirtazapine, monitor weights carefully.

Imipramine and doxepin both require baseline EKGs because of the **risk of QTc prolongation**. Follow-up EKGs may be necessary if higher doses of medication are needed. If using quetiapine, patients will need baseline lipid, glucose and weight measurements because quetiapine is an antipsychotic medication (see above). Because of its side effect profile, carefully consider its use for treating sleep issues. Traditional sleep medications, such as zolpidem or eszoplicone, may cause nighttime behavior changes, such as eating during sleep, confusion and agitation.

Recommended Practices for Prescribing Sleep Medications
When choosing an antipsychotic drug to address difficulty sleeping, keep these guidelines in mind.

- Always address sleep hygiene and medical issues first.
- Be aware that clonidine has a short half-life, so children fall asleep but can wake up after it wears off.
- Before prescribing quetiapine, obtain baseline glucose and lipid profiles.
- Before starting a course of imipramine or doxepin, get an EKG.
- Give mirtazapine at lower doses (7.5 to 15 mg) when treating sleep difficulties. At higher doses, the sedative effect may be lost. Always monitor weight.

By keeping in mind the guidelines described above, primary care providers can often manage some of the challenging behaviors exhibited by children who have disabilities. When the basic approaches do not produce the desired results, however, it is best to refer to a psychiatrist because of the complicated nature and multiple diagnoses of children who have special needs.

References

[1] *Stimulants and Sudden Death: What Is a Physician to Do*? Timothy E. Wilens, M.D., Jefferson B. Prince, M.D., Thomas J. Spencer, M.D., Joseph Biederman, M.D. Pediatrics Vol. 118 No. 3 September 2006, pp. 1215-1219.

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