

PHARMACOLOGY

For many individuals, the primary symptoms requiring pharmacological treatment may be behavioral or emotional, such as hyperactivity, impulsivity or obsessions and compulsions. The majority of patients with TS can manage well without drug therapy.

Pharmacotherapy (Medication) for Tics and Co-Occurring Conditions

Haloperidol, pimozide, and aripiprazole are currently the only U.S. Food and Drug Administration (FDA) approved medications to treat tics. However, because all three medications have the potential to cause many unwanted side effects, most physicians start with “off-label” use (not FDA approved specifically for treatment of tics) of guanfacine or clonidine, both of which are alpha-adrenergic agonist medications that are approved for use in the treatment of high blood pressure. These medications have been found to be moderately effective in reducing tics and to be better tolerated.

Problems with the co-occurring conditions, such as ADHD and OCD, often require medication, which can improve quality of life in patients with TS. It is not unusual that treatment of these conditions can also result in a reduction of tics. ADHD symptoms of inattention, impulsivity, and hyperactivity often cause problems for school-aged children. Stimulant medications, such as methylphenidate, can be effective in children who have TS and ADHD. Other non-stimulant medications, such as guanfacine, clonidine, and atomoxetine, may also be beneficial. The selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine, sertraline, and fluvoxamine, are effective in youth and adults with anxiety/ OCD. Side effects are generally tolerable. If medication is recommended, make sure the clinician answers all questions about the benefits and risks.

When to Consider Medication Therapy for TS

Medication therapy for TS should be considered if symptoms are functionally disabling and not remediable through non-drug interventions. While a variety of therapeutic agents are now available to treat TS symptoms, each medication should be chosen on the basis of specific target symptoms and potential side effects.

For example, in one patient, tic-suppression may be the important goal, while treatment of obsessive-compulsive features may take precedence in another. Dosages should be titrated slowly in order to achieve the lowest satisfactory dosage. The maximum dosage utilized depends on achieving a “tolerable” suppression of symptoms. “Tolerable” is determined by the nature of the symptoms (for example, coprolalia is usually less tolerable than eye tics) and the ability of an individual to exercise voluntary modulation of his/her vocalizations and motor tics.

Some children may have relatively few tics in school but a great many at home, thus allowing less overall use of medication. In our view, home is a haven where a child can have some relief from holding symptoms in check. It is vital that the patient and the family understand the ever-changing nature of TS, so that medications can be adjusted in a rational fashion, increasing when the symptoms upsurge and decreasing during periods of

relative remission. It is essential for effective dosage adjustment that “target symptoms” are monitored at all times.

For example, if an individual is treated with so much medication that all movements are suppressed, it can never be known when tics, which tend to wax and wane in severity during the course of the illness, decrease spontaneously. In the long run, our goal is to use as little medication as possible (i.e., “less is best”).

Available Medications

Currently there are a variety of medications available for the treatment of tics and the non-tic symptoms. There is no single medication that is helpful to all individuals with tics or Tourette Syndrome.

For individuals with mild to moderate tics, specific medications effective for tic reduction include clonidine or guanfacine. For individuals with moderate to severe tics, the newer atypical neuroleptics such as risperidone or older traditional neuroleptics such as haloperidol may be indicated.

The decision to use medication should take into account a variety of factors in addition to tic severity such as the child’s age, medical history and past history of response to medication. Typically, one medication can be used over several months or longer until the tics have abated.

Medications that target the non-tic symptoms, such as anti-obsessionals (selective serotonin reuptake inhibitors, or SSRIs), or medications for ADHD, such as methylphenidate, dextroamphetamine, or atomoxetine may be indicated. These medications may or may not have direct effects on the tics, in addition to the effects on the behavioral or emotional symptoms.

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One Medication or A Combination?

If the major symptoms include both tics and behavioral or emotional difficulties, medication may be effective to address both sets of symptoms. The first option is called monotherapy when just one medication is used to address two or more problems; this strategy is recommended, if possible, as a first choice since it is easiest to use and may have the best compliance. The physician may start with one agent that can address both the tics and the non-tic symptoms, such as clonidine for tics and ADHD or clonazepam (Klonopin) for tics and moderate to severe anxiety.

If monotherapy is not possible or has not been effective, individuals may require the use of two (or more) medications simultaneously to control both tics and behavioral or emotional symptoms. This approach is called targeted combined pharmacotherapy, referring to the careful, judicious use of more than one medication simultaneously. Although this is a more complicated approach, it has several advantages including:

- Using lower doses of each medication, reducing the likelihood of side effects associated with higher doses of single agents and
- Potential augmentation or synergism (booster effects) of combination therapy. Given the increasing recognition of the prevalence and clinical significance of the co-occurring problems in individuals with TS, this approach is becoming more frequently used.

The combined use of haloperidol (Haldol) and fluoxetine (Prozac) would be an example of a combination used to control both tics and obsessive-compulsive behaviors. Another example is the combination of clonidine (Catapres) and dextroamphetamine (Dexedrine) to reduce both tics and symptoms of Attention Deficit Hyperactivity Disorder.

Less frequently, more than two medications can be used in the treatment of tics and the co-occurring problems. This is a more complicated approach since the likelihood of interactions between the medications increases as the number of medications used together increases.

Medication Interactions

Potential interactions between two or more medications prescribed simultaneously need to be taken into account when the decision is made to use targeted combined pharmacotherapy. These interactions include those between the prescribed medications and those that may occur when non-prescribed (“over the counter”) medications are used.

Many children with TS and other tic disorders may receive over the counter medications to reduce symptoms of upper respiratory illness, such as nasal decongestants and cough suppressants. Others may take acetaminophen (Tylenol) for muscle pains or for fever, or nonsteroidal anti-inflammatory agents (NSAIDs) such as Ibuprofen (Motrin, Advil) for headaches or muscle pain. Antibiotics are frequently prescribed for children for ear infections or strep throats. While these medications are generally safe for pediatric usage, some may have significant interactions with medications prescribed for children with TS.