

# Psychopharmacology for the Clinician

*The information in this column is not intended as a definitive treatment strategy but as a suggested approach for clinicians treating patients with similar histories. Individual cases may vary and should be evaluated carefully before treatment is provided. The patient described in this column is a composite with characteristics of several real patients.*

## Management of comorbid Tourette syndrome and attention-deficit/hyperactivity disorder: Are psychostimulants an option?

An 11-year-old boy was evaluated for worsening tics over the past 4 months. He had a history of mild tics since age 6 years that never required intervention. At age 7 years, he received a diagnosis of attention-deficit/hyperactivity disorder (ADHD), combined subtype. As ADHD symptoms were interfering with learning and social relationships, he was started on methylphenidate at the time of diagnosis. Treatment with methylphenidate resulted in clinical improvement of ADHD symptoms without exacerbation of tics.

Over the past 4 months, the child, his parents and teachers reported a gradual worsening of tics. Tics were occurring every few seconds and included forceful neck extension; a high pitched squeak; touching the centre of the forehead, nose and chest in sequence; extensor jerks of both arms; and a guttural throat noise. The neck extension tic caused pain, and the vocal tics interrupted speech and disrupted the classroom. The child was having difficulty falling asleep. His parents reported that he was tired and irritable. Methylphenidate was stopped for 6 weeks by the child's pediatrician. There was no remission of tics and substantial worsening of ADHD symptoms; therefore, methylphenidate was restarted. Examination revealed frequent and intrusive motor and vocal tics occurring every 5–10 seconds. Vocal tics were audible from the waiting room and interrupted the child's speech.

The patient was started on clonidine (0.025 mg at bedtime), which was gradually titrated over a period of 3 weeks to 0.05 mg 3 times daily, with the goal of reducing both the frequency and severity of the tics and ADHD symptoms. Methylphenidate was continued at the current dose (extended release tablet, 54 mg). The child was re-evaluated after 6 weeks. He reported initial sleepiness on the medication and occasional lightheadedness on standing. Tics were noticeably less frequent but still present. The child and parents reported a 50% decrease in tics. They reported additional improvement in ADHD symptoms and less time to fall asleep. Habit reversal therapy (HRT) was recommended for the squeaking tic. The child identified a premonitory sensation of chest tightness prior to the squeak. He was trained to perform a slow exhalation when he experienced the premonitory sensation, with good additional benefit.

The use of clonidine for the treatment of ADHD in children with tics has been studied in 2 randomized controlled trials (RCTs) assessing both tic and ADHD outcomes<sup>1</sup> and in 6 RCTs studying the treatment of tics.<sup>2</sup> The Tourette Syndrome Study Group<sup>3</sup> randomly assigned 136 children to clonidine, methylphenidate, clonidine plus methylphenidate, or placebo for 16 weeks. Compared with placebo, all active treatment groups had a significant decrease in tic and ADHD scores, with the largest overall improvements reported in children receiving the combination of clonidine plus methylphenidate. Guanfacine has also been assessed in an RCT in the comorbid Tourette syndrome/ADHD population.<sup>4</sup> After 8 weeks, total tic scores de-

creased significantly with guanfacine compared to placebo, and an improvement in ADHD symptoms was also demonstrated. Recent years have seen renewed interest in the use of HRT for tics. Piacentini and colleagues<sup>5</sup> performed an RCT on HRT versus supportive therapy for the treatment of tics in 126 youth. Comorbid conditions within this sample were considerable, and 36.5% were already on a stable dose of medication for tics. Participants were randomly assigned to 8 sessions of therapy over 10 weeks. Total tic severity decreased significantly in those receiving HRT compared to supportive therapy.

Other options for management of our patient's tics would include the use of an antipsychotic medication, such as risperidone.<sup>6,7</sup> Owing to the risk of metabolic and extrapyramidal side effects of antipsychotic medications and the need for monitoring, treatment is usually first attempted with an  $\alpha$  agonist to see if an adequate response can be achieved. When available, the use of HRT alone or as an adjunctive treatment can be very helpful and lead to lasting improvement in patients with tics. Deciding when treatment should be offered depends on subjective distress, which can vary considerably among individuals.<sup>8</sup>

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*Psychopharmacology for the Clinician columns are usually based on a case report that illustrates a point of interest in clinical psychopharmacology. They are about 650 words long. Columns can include a bibliography which will be available only on the journal website.*

**References**

1. Pringsheim T, Steeves T. Pharmacological treatment for attention deficit hyperactivity disorder in children with co-morbid tic disorders. *Cochrane Database Syst Rev* 2011;(Issue 4):CD007990 10.1002/14651858.CD007990.pub2.
2. Pringsheim T, Doja A, Gorman D, et al. Canadian guidelines for the evidence based treatment of tic disorders: pharmacotherapy. *Can J Psychiatry* 2012;57:133-43.
3. Tourette Syndrome Study Group. Treatment of ADHD in children with tics: a randomized controlled trial. *Neurology* 2002;58:527-36.
4. Scahill L, Chappell PB, Kim YS, et al. A placebo-controlled study of guanfacine in the treatment of children with tic disorders and attention deficit hyperactivity disorder. *Am J Psychiatry* 2001;158:1067-74.
5. Piacentini J, Woods DW, Scahill L, et al. Behavior therapy for children with Tourette disorder: a randomized controlled trial. *JAMA* 2010;303:1929-37.
6. Scahill L, Leckman JF, Schultz RT, et al. A placebo-controlled trial of risperidone in Tourette syndrome. *Neurology* 2003;60:1130-5.
7. Dion Y, Annable L, Sandor P, et al. Risperidone in the treatment of Tourette syndrome: a double-blind, placebo-controlled trial. *J Clin Psychopharmacol* 2002;22:31-9.
8. Sandor P, Carroll A. Canadian guidelines for the evidence based treatment of tic disorders. *Can J Psychiatry* 2012;57:131-2.