Combination Use of Atomoxetine and Risperidone for Hyperactivity and Impulsivity in Autistic Disorder

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The management of target symptoms in autistic disorder is challenging. Associated behavioral problems including hyperactivity and impulsivity may respond to risperidone or other agents but are often difficult to control. We describe the successful use of combination atomoxetine and risperidone for control of hyperactivity and impulsivity in an adult individual with autistic disorder.

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ssociated features of autistic disorder might include impulsivity and problems with attention although prevalence rates for co-morbid Attention-Deficit/Hyperactivity disorder (ADHD) and autistic disorder are not readily available. Pharmacological treatments for both disorders might overlap, especially with the use of risperidone for the treatment of autistic disorder and behavioral problems in children. Aman et al.2 analyzed data from two trials of risperidone use in ADHD, disruptive disorders and sub-average IQ and concluded that risperidone was effective when used alone or with psychostimulants for behavioral problems and co-morbid ADHD in children. Santosh and Baird9 point to the role of psychotropics for managing some of the behavioral symptoms of autistic disorder but caution about the long-term use of medications, especially because of potential harmful side effects from various agents. Others have noted that individuals with autistic disorder may be particularly sensitive to the side effects of medication.11 A growing literature suggests that the atypical antipsychotic risperidone, in particular, can be efficacious for treating behavioral problems, including hyperactivity, in autistic disorder. Most of the studies reported have looked at risperidone use in children.9,12,17 Few studies have examined the use of risperidone in adults with autistic disorder.5,10,14 Risperidone has not received FDA approval for the treatment of autistic disorder. Psychostimulants have been the mainstay of pharmacotherapy for ADHD and have been used to treat hyperactivity in autism spectrum disorders.6,7,15 Aman3 notes that neither the atypical antipsychotics nor the psychostimulants have been completely successful for the management of behavioral symptoms and hyperactivity associated with autistic disorder. Atomoxetine, a methylphenoxy-benzene propanamine derivative, is an inhibitor of the presynaptic norepinephrine transporter and is a non-stimulant alternative for the treatment of ADHD.4 Both open-label1 and random controlled trials8,13 have supported the efficacy and tolerability of atomoxetine for the treatment of ADHD.

We describe a good response from the combination use of risperidone and atomoxetine for an adult patient with autistic disorder and symptoms of hyperactivity/impulsivity.

CASE REPORT

The patient is a 24-year-old single black male with intellectual disability (moderate level) and autistic disorder, who was referred to the Special Needs Clinic at Johns Hopkins Bayview Medical Center in Baltimore in June 2004 for treatment of mood symptoms and disruptive behaviors on the job site.

The history indicates a normal birth and age appropriate development. The patient sat without support at age six months, walked at ten months, and was speaking single words and putting a few words together at age two. At around the age of 2-1/2 to 3, the patient reportedly had a high fever and stopped speaking although he did not lose any motor milestones. However, some significant behavioral changes were noted in that he had great difficulty around crowds, and reportedly would scream and cry when he was near people.
He became socially withdrawn, avoided eye contact, and seemed to become attracted to objects such as calculator buttons. He was also noted to have hand flapping and hypersensitivity to loud noises. There is a history of self-injurious behavior as well as a history of grabbing and pinching others. In school he was described as fidgety, having a short attention span and being easily distracted. Psychological testing in October 1993 indicated a Verbal IQ of 46, Performance IQ of 47, and Full Scale IQ of 42. He was diagnosed in 1993 with autistic disorder and intellectual disability. The etiology of the patient’s intellectual disability was not documented. In 1996 the diagnosis of Attention Deficit Hyperactivity Disorder-Combined Type was added. The patient was treated with Ritalin and clonidine with some overall improvement in his attention and behavioral problems. He had been taking Ritalin for more than 10 years, with some reported loss of efficacy over time. Medication was eventually changed to risperidone and the dose was gradually increased to 5mg/day. He did fairly well on this medication with gradual improvement in his behavior. Attempts to reduce the risperidone dose were followed by some exacerbation of behavioral problems including more impulsive and aggressive behaviors usually directed towards peers at his sheltered worksite program. Despite improvement in some of the problematic aggressive behaviors, the patient continued to have difficulty sustaining attention, completing tasks and was easily distracted. He continued to be impulsive and was frequently intrusive.

The patient was referred to the Special Needs Clinic because of ongoing behavioral problems at his job site. He required a great deal of supervision to stay on task because of a very limited attention span. He also had a history of running away from the job site. Staff was concerned that the patient might run into traffic due to his impulsivity and attention problems. In October 2004, atomoxetine was added to the patient’s current regimen of risperidone 5mg/day and titrated up to 40mg bid. In March 2005 the family reported an improvement in the patient’s attention span and increased productivity at work. In addition to improvement in his attention and ability to complete tasks, the patient was cooperative with staff and had better interpersonal contacts with peers. He was noted to focus better at the day program and needed less redirection. The family also reported that the patient was more attentive and less tangential during conversation and felt that his overall “awareness” was better. His speech was more goal-directed and he began to initiate meaningful conversations more often. He seemed to be less restless at home and during family outings such as church events. Others concurred with his parents’ impressions and had similar observations of the patient’s progress. The patient tolerated his current regimen of risperidone and atomoxetine without any side effects. His compliance with his medications was good. The patient has sustained this improvement as of July, 2005.

**Discussion**

The pharmacological management of the target symptoms of autistic disorder can be challenging. Behavioral problems including hyperactivity and impulsivity may be associated features of autistic disorder or represent symptoms consistent with co-morbid ADHD. While risperidone has been widely used in the treatment of autistic disorder, residual symptoms of hyperactivity/impulsivity may require additional pharmacological interventions. Combination risperidone and atomoxetine resulted in improved control of symptoms in an adult patient with autistic disorder. On the combined regimen, the patient may be able to tolerate a reduction in the risperidone dose without exacerbation of symptoms. It is unclear whether the patient’s symptoms of hyperactivity and impulsivity represented core symptoms of his autistic disorder or were due to a co-morbid diagnosis of ADHD. Risperidone’s postsynaptic dopamine and serotonin receptor blockade and atomoxetine’s selective noradrenaline reuptake inhibitor activity might explain the patient’s response to treatment. More research is necessary to determine if this approach using the novel, non-stimulant atomoxetine in combination with risperidone is an effective and safe regimen for the long-term treatment of individuals with autistic disorder and features of ADHD.

**References**


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