

A 56-Year-Old Male with Bipolar II, Dysuria

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The patient is a 56-year-old, divorced, unemployed Caucasian male with bipolar II disorder who presented to the outpatient clinic with the chief complaint of unstable mood and decreased ability to concentrate. This led to his inability to work in his role as an associate publisher. His illness led to financial difficulties as well as conflicts with his girlfriend. He did not report any change in his sleep, appetite, or body weight. He denied any suicidal or homicidal ideations. He did not report any manic, anxiety or psychotic symptoms. He was compliant with his treatment regimen of lamotrigine 50 mg twice a day and bupropion 150 mg daily.

The patient had no history of inpatient psychiatric hospitalization. Substance history included a glass of wine daily. There was no history of



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property destruction, aggressive or assaultive behavior. The patient had a history of manic episodes in the past. He was treated with lithium and paroxetine, but both medications were discontinued because of side effects (polydipsia, extrapyramidal symptoms, etc.). He had a family history of bipolar disorder in his maternal aunt, sister and cousin.

On examination, his weight was 145 lb, and height was 5'10". He had appropriate appearance and posture with normal speech. He was cooperative with the interviewer with good eye contact. His mood was depressed and affect was appropriate with thought content with full range. The patient had no auditory or visual hallucinations, and no suicidal or homicidal ideations. No delusions, obsessions, phobias, or themes were elicited. He was awake, alert, and oriented to time, place and person. Cognition and memory was intact with good insight and judgment.

During the course of treatment, lamotrigine was increased to 200 mg daily, as the patient was experiencing racing thoughts, decreased concentration and easy distractibility. Lab work was ordered, including complete blood count, panel 14, folate and B12 levels; all were within normal limits. Due to patient's persistent concern for his decrease in concentration, he was referred to the neurology clinic for evaluation. The patient underwent all the diagnostic workups, including CT head, EEG, and TSH, which were also in normal range.

His inability to focus at tasks was a major concern to his clinicians, and that time he was started on atomoxetine 40 mg/day. While on the medication, he reported improvement in his concentration but noticed urinary retention, hesitancy, and burning micturition. Due to the urinary side effects, the clinician advised him to discontinue atomoxetine and to consider

other treatment options. He continued to use atomoxetine despite his urinary complaints. When his dysuria failed to improve and instead increased in intensity, the patient was referred to an urologist. The urinary workup showed



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no sign of infection. Benign prostatic hyperplasia (BPH) was not detected. Atomoxetine was discontinued at a later appointment, and subsequently, the patient reported improvement in all his urinary complaints; however, he returned to his baseline of being unable to concentrate and was easily distracted. Atomoxetine was re-initiated at a lower dose and the patient re-experienced dysuria with a lessened intensity. At this point, the dose of atomoxetine was divided into 20 mg in the morning and 10 mg at bedtime. With the splitting of the dosage, dysuria was markedly improved. The patient continues to experience urinary hesitancy along with dysuria approximately two times a week, which is tolerable to him.

DIAGNOSIS

Atomoxetine-Induced Dysuria

DISCUSSION

Atomoxetine is a selective norepinephrine reuptake inhibitor that acts by inhibiting the presynaptic norepinephrine transporter. It thus increases the levels of norepinephrine in the brain that is responsible for controlled behavior. Atomoxetine was developed initially as an antidepressant and is the first nonstimulant agent approved by the FDA for treatment of ADHD in children and adults.¹

Locus ceruleus is the primary noradrenergic area in brain responsible for alert waking state and increasing informal processing and attention to environmental stimuli. Animal studies concluded that increased levels of dopamine and norepinephrine in the prefrontal cortex are required for normal functioning. Their shortage in the right dorsal prefrontal cortex will have an effect on attention regulation and inhibition to the response of distracting stimuli. Their deficits in the right orbital prefrontal cortex are related to displays of immature behavior, lack of restraint, and increased motor activity.² Experimental studies conducted showed a threefold increase in the extracellular levels of norepinephrine and dopamine in the prefrontal cortex with atomoxetine without affecting the serotonin levels. In contrast to other psychostimulants, atomoxetine poses a lower risk of patient abuse, as it has no effect on the dopamine levels in striatum or nucleus accumbens.³

As mentioned previously, the patient under discussion had painful micturition, urinary hesitancy and retention, with no evidence of urinary tract infection, BPH, prostatitis or any other medical problems. The urinary symptoms started after the initiation of the drug

atomoxetine and resolved only after it was discontinued. As the patient was re-challenged with the drug, the symptoms reappeared but decreased in intensity when the dosage was split twice daily. Studies in adults showed the most commonly observed adverse events with the use of atomoxetine for ADHD are dry mouth; insomnia; nausea; decreased appetite; constipation; urinary retention and difficulties with micturition; erectile disturbance; dysmenorrhea; dizziness; and decreased libido.³

In clinical trials assessing the effects of atomoxetine in adults with ADHD, the rate of urinary retention or hesitation was 3% in a sample of 269 atomoxetine-treated patients versus 0% in the placebo group.¹ Adler et al conducted a randomized, double blind, placebo-controlled 6-month trial to examine the efficacy and safety of once-daily morning-dosed atomoxetine in adult patients with ADHD and the efficacy through the evening hours. Results displayed the side effects due to the treatment with atomoxetine as nausea, dry mouth,

fatigue, decreased appetite, urinary hesitation, and erectile dysfunction, both at the 10-week time point and the 6-month time point.⁴ Desarkar et al reported a case of atomoxetine-induced acute urinary retention in an adolescent. The parasympathetic system is responsible for the bladder contraction during voiding by sending excitatory input to the bladder; the sympathetic system maintains bladder continence. During micturition, the parasympathetic system gets activated and sympathetic system is suppressed. The author proposed that atomoxetine being a noradrenergic agent can cause an overstimulation of the sympathetic system, thereby suppressing the parasympathetic system and causing urinary retention.⁵

CONCLUSION

Although literature shows evidence of urinary hesitancy and retention as potential side effects of atomoxetine in the treatment of ADHD, we report dysuria as a possible side effect due to atomoxetine use in the treatment

of bipolar disorder. The dysuria associated with atomoxetine and the resolution of urinary symptoms with the discontinuation of the medication proposes that more studies are needed on the safety profile. Clinicians using this medication for patients with bipolar disorder should consider splitting the dosage if urinary complaints are noticed. In this case, it was shown to decrease urinary complaints.

REFERENCES

1. Eli Lilly and Company. Strattera (atomoxetine) package insert. Indianapolis, IN; 2002.
2. Spencer TJ, Biederman J, Wilens TE, Faraone SV. Novel treatments for attention-deficit/hyperactivity disorder in children. *J Clin Psychiatry* 2002;63(suppl 12):16–22.
3. Alisa K. Christman, Pharm.D., Joli D. Fermo, Pharm.D., and John S. Markowitz, Pharm.D. Atomoxetine, a Novel Treatment for Attention-Deficit-Hyperactivity Disorder *Pharmacotherapy* 2004;24(8):1020–1036
4. Once-Daily Atomoxetine for Adult Attention-Deficit/Hyperactivity Disorder-A 6-Month, Double-Blind Trial. *J Clin Psychopharmacol* 2009;29: 44Y50
5. Desarkar P, Sinha VK. Acute urinary retention associated with atomoxetine use. *Aust N Z J Psychiatry*. 2006 Oct;40(10):936.