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The Role of Atomoxetine and Sympathetic Pathways in Encopresis with ADHD

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Dear Editor,

Atomoxetine, an effective, non-stimulant treatment alternative for attention-deficit/hyperactivity disorder (ADHD), is a selective presynaptic norepinephrine reuptake inhibitor. Atomoxetine is also one of the treatment options for encopresis with ADHD[1]. We present a case diagnosed as encopresis accompanied by ADHD and discuss the possible effective mechanism of atomoxetine.

A 7-year-old boy was admitted to the outpatient clinic with complaints of restlessness, forgetfulness, becoming bored quickly, academic failure, and soiling his underpants. In the psychiatric examination, he was conscious, oriented, and his speech was understandable and fluent. There were no hallucinations or delusions. Concentration problems and hyperactivity were observed during the examination. Additionally, impulsivity was described by his parents. He also had developed encopresis occurring five to six times a week during the previous year. His intelligence level was within normal limits according to psychiatric examination and tests using the Wechsler Intelligence Scale for Children-Revised. He was also evaluated with the Conners' Parent Rating Scale and the Conners' Teacher Rating Scale by his parents and teacher, respectively. No abnormalities were observed in the complete blood count, renal function tests, hepatic function tests, thyroid function tests, electrolytes, analysis of urine, erythrocyte sedimentation rate, or abdominal USG. In addition, there were no remarkable results from the physical and anal examination except constipation. The diagnosis was compatible with ADHD, combined type, as well as encopresis with constipation and overflow incontinence, according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). The patient had no history of psychiatric treatment. At first, for the treatment of encopresis, behavioral intervention was suggested; however, the patient and his parents did not comply well with the treatment recommendations. Atomoxetine, 18 mg/day, was initiated and the dose was titrated up to 40 mg/day over a two-week period. The patient was followed up on a monthly basis. In the first month of the follow-up period, attention deficit symptoms decreased and school achievement improved. Furthermore, encopresis was observed only three times during the month. At the end of the fifth month, the medication was tolerated well and there was no further encopresis.

Encopresis, a cause of failure in both social interactions and academic improvement, is defined as recurrent defecation. The DSM-5 describes two subtypes of encopresis, "with constipation and overflow incontinence" and "without constipation and overflow incontinence". Furthermore, coexistence of encopresis and ADHD symptoms is frequently observed. Cox et al. described relationships between encopresis and attention difficulties, disruptive behavior, and academic failure[2]. In a previous study, the efficacy of imipramine was demonstrated in the treatment of encopresis. Also, the successful use of atomoxetine and methylphenidate has been shown in children with encopresis and ADHD[1,3]. Atomoxetine increases

synaptic noradrenaline levels, the basic transmitter of the sympathetic nervous system. Additionally, relaxation problems in the internal anal sphincter may cause encopresis of the type with constipation and overflow incontinence[4]. Akervall et al. have demonstrated that sympathetic efferent activity tends to relax the internal anal sphincter[5]. In this circumstance, atomoxetine might affect both ADHD and encopresis via increased noradrenaline levels and sympathetic activity. In our case, we observed the effects of atomoxetine on both encopresis and ADHD; however, this observation needs to be supported with further studies.

References:

1. Herguner S, Herguner A. Atomoxetine for encopresis in 2 children with attention-deficit/ hyperactivity disorder. J Clin Psychopharmacol 2012;32(2):302-3. **[CrossRef]**
2. Cox DJ, Morris JB, Jr., Borowitz SM, Sutphen JL. Psychological differences between children with and without chronic encopresis. J Pediatr Psychol 2002;27(7):585-91. **[CrossRef]**
3. Golubchik P, Weizman A. Attention-deficit hyperactivity disorder, methylphenidate, and primary encopresis. Psychosomatics 2009;50(2):178. **[CrossRef]**
4. Rao SS. Pathophysiology of adult fecal incontinence. Gastroenterology 2004;126(Suppl.1):S14-S22. **[CrossRef]**
5. Akervall S, Fasth S, Nordgren S, Oresland T, Hulten L. Manovolumetry: a new method for investigation of anorectal function. Gut 1988;29(5):614-23. **[CrossRef]**

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***A.Y., N.Y., E.O.:** The authors reported no conflict of interest related to this letter.*