



## LETTER TO THE EDITOR

# Atomoxetine Use May Cause Leukopenia

Mahmut Zabit Kara<sup>1</sup>\*, Mehmet Hamdi Orum<sup>2</sup>

<sup>1</sup>Adiyaman University School of Medicine, Department of Child and Adolescent Psychiatry, Adiyaman, Turkey  
<sup>2</sup>Adiyaman University School of Medicine, Department of Psychiatry, Adiyaman, Turkey

Dear Editor,

Hematologic disabilities following drug use remains a major problem of drug therapy. Drug-induced leukopenia is a potentially life-threatening side effect that may occur secondary to therapy with various agents. Psychotropic agents may also cause leukopenia (1). Atomoxetine is a selective norepinephrine reuptake inhibitor, known as a non-stimulating and safe alternative therapy for the treatment of ADHD (Attention Deficit Hyperactivity Disorder) particularly in cases of anxiety disorder and Tourette disorder as a co-diagnosis. Most commonly known side effects are weight loss, nausea, chest pain, numbness and burning pain. Hematologic side effects associated with the use of atomoxetine are rare (2). Here, we report the case of a patient with leukopenia associated with atomoxetine.

Mr. A was a 15-years old adolescent diagnosed with ADHD according to Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> Edition (DSM-5) criteria at a child and adolescent psychiatry outpatient clinic (There was no additional psychopathology according to Kiddie Schedule for Affective Disorders and Schizophrenia for School-Age Children—Present and Lifetime Version (K-SADS-PL) and the Wechsler Intelligence Scale for

Children-Revised (WISC-R) is considered normal.). Complete blood count (CBC) values were as follows: Thyroid-Stimulating Hormone (TSH), tetraiodothyronine (sT4), liver functions, kidney functions, ferritin, folate, vitamin B12, and vitamin D seen at normal level. White blood cell (WBC) count was 7.2 ( $10^3/\mu\text{L}$ ), haemoglobin (Hb) was 15.7 (g/dL), and platelet count was 246 ( $10^3/\mu\text{L}$ ). Body mass index was 22 and body weight was 63 kilograms. Atomoxetine was prescribed and it was planned to gradually titrate to 60 mg/day. Partial remission was seen at 40 mg/day dose. After 10 days of 60 mg/day increased dose, the patient was admitted to the emergency department with abdominal pain. CBC showed WBC count 2.2 ( $10^3/\mu\text{L}$ ), Hb 15.5 (g/dL), and platelet count 263 ( $10^3/\mu\text{L}$ ). No infection source could be detected (Sedimentation rate and C-reactive protein were at normal levels). There was no history of fever or additional use of drugs. It was thought that leukopenia and abdominal pain may be related to the use of atomoxetine and the drug was discontinued. CBC were applied 5 days after drug discontinuation: WBC 6.6 ( $10^3/\mu\text{L}$ ), Hb 15.5 (g/dL), and platelet count 235 ( $10^3/\mu\text{L}$ ). Methylphenidate treatment was recommended but the family did not accept it. A similar complaint and blood dyscrasia were not encountered in the follow-up. Naranjo Adverse Drug Reactions Probability Scale score was 8 (3).

Psychotropic medications can influence hematologic parameters. Leukopenia is a rare but important hematologic disorder that may result in hospitalization (1). Possible mechanisms of toxicity include: (I) inhibiting

**Corresponding author:** Mehmet Hamdi Orum, MD  
Adiyaman University School of Medicine, Department of Psychiatry,  
Adiyaman, Turkey

**E-mail:** mhorum@hotmail.com

**Received:** June 01, 2018 **Accepted:** August 29, 2018

**Citation:** Kara MZ, Orum MH. Atomoxetine use may cause leukopenia. Psychiatry and Behavioral Sciences 2018;8(3):145-6.  
https://doi.org/10.5455/PBS.20180601125642

effect on cell production or DNA synthesis, folic acid deficiency (bone-marrow hypoplasia or suppression); (II) immune-related element destruction; (III) sudden direct toxicity to bone marrow elements; (IV) direct toxicity to peripheral blood elements; and (V) liver function impairment (4). During treatment with psychotropics, routine WBCs are usually not very useful in the early detection of agranulocytosis because of the extremely rapid onset, with normal WBCs often being reported only a few days before the onset of agranulocytosis. The best precaution is alertness of the clinician to any signs of infection (especially of the pharynx) in patients treated

with psychotropics. Hematologic side effects of psychotropic drugs usually disappear after discontinuation of the offending drugs without adverse sequelae, and it is rare for these effects to require further treatment (1). We found this to be a unique case of leukopenia suspected to be secondary to extended use of atomoxetine according to the PubMed search.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study has received no financial support.

## REFERENCES

1. Sedky K, Lippmann S. Psychotropic medications and leukopenia. *Curr Drug Targets* 2006;7(9):1191-4. [\[CrossRef\]](#)
2. Abali O, Yilmaz O. Atomoxetine induced hypothermia: A case report. *Psychopharmacol Bull* 2011;44(2):88-90.
3. Kose S, Akin E, Cetin M. Adverse drug reactions and causality: the Turkish version of Naranjo Adverse Drug Reactions Probability Scale. *Psychiatry and Clinical Psychopharmacology* 2017;27(2):205-6. [\[CrossRef\]](#)
4. Oyesanmi O, Kunkel EJ, Monti DA, Field HL. Hematologic side effects of psychotropics. *Psychosomatics* 1999;40(5):414-21. [\[CrossRef\]](#)