Dizziness associated with sertraline treatment in a 12-year-old male with generalized anxiety disorder and panic disorder

Cagla Celikkol Sadic[1], Merve Uzun[2], Aziz Kara[3]
[1]Assis. Prof., [2]M.D., [3]Assoc. Prof., Afyonkarahisar Health Sciences University Faculty Of Medicine, Department Of Child And Adolescent Psychiatry, Afyonkarahisar /Turkey https://orcid.org/0000-0001-6153-301X-https://orcid.org/0009-0007-9008-5990-https://orcid.org/0000-0003-0925-5723

Dear Editor,

Anxiety disorders are seen extremely frequently in children and adolescents (1). A meta-analysis reported the prevalence of anxiety disorder as 6.5% in children and adolescents (2). In the treatment of anxiety disorders, selective serotonin re-uptake inhibitors (SSRI) are used as a safe and effective treatment method with tolerable side-effects (3). Moreover, there is also some data in the literature that there has been a reduction in dizziness with the use of SSRIs. Conversely, patients may rarely experience intolerable side effects (4,5). The case of a 12-year-old male patient is presented, describing the onset of severe dizziness with sertraline use, along with a discussion of the treatment process in the context of relevant literature.

A 12-year-old male presented together with his parents at our outpatient clinic with the complaints of heart palpitations, nausea, boredom, and continuous anxiety, all of which made him not want to go to school. The patient stated that for about a year he had the feeling almost every day that something bad was going to happen. He felt restless, had other complaints of internal discomfort, had difficulty falling asleep, and found it difficult to concentrate in class. Over the past month, the patient has experienced sudden attacks of intense anxiety, with a feeling of being unable to breathe, a rapid heartbeat, numb and trembling hands, abdominal pain and a feeling of dying. He was afraid of having another attack and facing situations such as the feeling of not being able to breathe or the sensation of dying, which made him extremely anxious.

The patient was urgently referred to the Pediatric Cardiology Department because of these complaints. The results of electrocardiography (ECG) and echocardiography (ECHO) examinations were normal. The patient had no previous psychiatry presentation, and had never used any psychiatric drugs. When the family psychiatric history was questioned, it was learned that the mother had previously been diagnosed with generalized anxiety disorder (GAD) and had a history of medical treatment for that. After a psychiatric evaluation using the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL) (6), a widely used semistructured diagnostic interview for examining current and lifetime psychopathology in children and adolescents, the patient was diagnosed with GAD and panic disorder (PD) (respectively, Clinical Global Impressions (CGI)-Severity subscale=5; CGI-Severity subscale=5). Treatment of 25 mg/day sertraline was started for GAD and PD. On the third day of sertraline treatment, the patient was admitted to the emergency department due to severe dizziness. According to the information obtained from the patient and his family, severe dizziness started within 24 hours after the use of psychopharmacological drug (CGI- Efficacy index =0.5). The Naranjo scale was used to assess the patient's symptoms (7), and the patient scored 4 points on the scale, which was considered a possible adverse drug reaction. Due to the complaints of dizziness, Pediatric Neurology and Pediatric Cardiology were consulted. Examinations with electroencephalography (EEG), ECG, ECHO, an brain magnetic resonance imaging (MRI) were

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reported as normal. The patient was also evaluated by an otolaryngologist for dizziness complaints, and the examination was reported as normal. In the patient's laboratory test results, complete blood count (CBC), blood biochemistry, thyroid function tests, and vitamin B12 levels were evaluated as normal. Arterial blood pressure was measured as 110/60 mm Hg.

The medical treatment of the patient was changed to 5 mg/day fluoxetine, which has a longer half-life than sertraline. At the follow-up examination after 3 weeks, there was seen to be no change in the complaints in respect of anxiety disorder, but the complaints of dizziness had completely recovered (CGI- Efficacy index =1). As the GAD and PD complaints were still ongoing, the fluoxetine treatment was increased to a dose of 10 mg/day. After a further 3 weeks, the GAD and PD complaints had receded, but anxiety continued to have a negative effect on the functionality of the patient, so the fluoxetine was increased to 20 mg/day. During the subsequent follow up of the patient, the GAD and PD symptoms significantly decreased (respectively, CGI- severity subscale=2; CGI-severity subscale=1) and there were no complaints of dizziness after starting the fluoxetine treatment. Verbal and written consent was obtained from the patient and her family to publish this case report.

In this case report, a patient diagnosed with GAD and PD, who had no previous complaints of dizziness, experienced severe dizziness with the initiation of sertraline treatment, then these complaints were seen to recover when the treatment was changed to fluoxetine.

Sertraline is among the most selective (as opposed to noradrenaline) and effective SSRIs in inhibiting serotonin reuptake. Since the vestibular nucleus complex (VNC) has abundant serotonin receptors, it has been suggested that changes in serotonin may have a significant effect on the electrophysiological activity of neurons, and that changes in serotonin in the VNC would impair the function of its neurons, causing dizziness (8). It has also been reported that the half-life of sertraline is 15-26 hours, whereas the half-life of fluoxetine is 4-6 days, and norfluoxetine, which is an active metabolite, has a half-life of 4-16 days (9). In the light of these data, it was thought that the dizziness in our patient who used sertraline treatment may have been caused by the sudden change in serotonin levels in the vestibular nucleus complex caused by sertraline, which has a shorter half-life than fluoxetine.

In another aspect, studies have reported that fluoxetine may increase noradrenaline (10,11). In addition to this, it has been suggested that noradrenaline may regulate the intensity of central responses to vestibular stimulation and that adrenergic drugs may have a prophylactic effect against motion sickness (12). In light of this information, the improvement in our patient's dizziness may be attributed to fluoxetine, which, unlike sertraline, regulates vestibular stimulation by increasing noradrenaline.

In conclusion, the adverse effect of dizziness resolved after discontinuation of sertraline and did not recur after initiation and upwards titration of fluoxetine. In addition, considering that dizziness was not among the patient's initial complaints and its relationship with changes in the medical treatment, it was concluded that the patient's dizziness was not caused by an existing psychiatric diagnosis. We suggest that the dizziness in this patient may have improved due to sertraline's shorter half-life compared to fluoxetine or due to the regulation of vestibular stimulation from increased noradrenaline levels associated with fluoxetine. Clinicians should be aware of this adverse effect when starting sertraline in patients. Therefore, further studies on the possible association of dizziness with sertraline and fluoxetine are needed.

Correspondence address: Assis Prof., Cagla Celikkol Sadic, Afyonkarahisar Health Sciences University Faculty of Medicine, Department of Child and Adolescent Psychiatry, Afyonkarahisar, Turkey dr.cagla90@gmail.com

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