



CASE REPORT

A probable case of movement disorder (Tardive dyskinesia) due to duloxetine treatment

Duloksetin tedavisine bağı beklenmedik bir hareket bozukluğu olgusu (Tardif diskinezi)

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Summary

Tardive dyskinesia and tardive dystonia are caused by dopamine receptor blocking agents, mostly antipsychotics and sometimes antidepressants or calcium channel blockers. Duloxetine is a serotonin-noradrenaline reuptake inhibitor used in the treatment of diabetic neuropathic pain and fibromyalgia, as well as major depression. In this case, we aimed to discuss the tardive dyskinesia-like appearance of a patient using duloxetine due to fibromyalgia.

Keywords: Duloxetine; fibromyalgia; tardive dyskinesia.

Özet

Tardif diskineziye ve tardif distoniye, çoğunlukla dopamin reseptör bloke edici ajanlar, bazen de antidepresanlar veya kalsiyum kanal blokerleri neden olur. Duloksetin, diyabetik nöropatik ağrı ve fibromiyalinin yanı sıra majör depresyon tedavisinde kullanılan bir serotonin-noradrenalin geri alım inhibitörüdür. Bu olguda fibromiyaljiye bağı duloksetin kullanan bir hastanın tardif diskinezi benzeri görünümünü tartışmayı amaçladık.

Anahtar sözcükler: Duloksetin; fibromyalji; tardif diskinezi.

Introduction

Duloxetine is a serotonin-noradrenaline reuptake inhibitor used in the treatment of diabetic neuropathic pain and fibromyalgia, as well as major depression.^[1]

The mechanisms of action of drugs are also responsible for their side effects. The most frequent side effects are nausea, dry mouth, dizziness, decreased appetite, constipation and insomnia.^[1]

In this case report, we aimed to discuss the presentation of involuntary contraction following duloxetine use and possible tardive side effects.

Case Report

A 60-year-old male presented with occasionally exacerbated headache and sleep disturbance, for 30

years. According to the knowledge obtained from the patient's story, the pain was in his shoulders, neck and the back of his head, which spread to the top of the head. He stated that his pain gradually increased over time and for the last three months his pain continued constantly and that he had a sleep problem. He described his pain as throbbing and like a lightning strike. The patient also stated that his pain decreases slightly with massage and rest, but increases with movement, light and loud noise.

He had previously been examined in neurology and ear-nose-throat clinics, said he tried various treatments for pain, used analgesics and antibiotics, but none of them reduced the pain. The patient had no known systemic illness, he was found to have had acute rheumatic fever in his childhood, but had no residual effect on his follow-up. Physical examina-

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tion revealed normal examination findings except for painful neck movements and trigger points in the neck, which were sensitive to touch.

The patient was diagnosed with fibromyalgia and his pain was evaluated as neuropathic pain. Duloxetine (30 mg/day) and dexketoprofen (25 mg, to be used when the pain intensified) was prescribed. We suggested to keep a pain diary and come to a follow-up after 10 days.

When the patient arrived 10 days later, he stated that his pain decreased significantly. However, he described spasm in the temporomandibular joint and muscles, that began 3–4 days ago. He stated that this spasm starts approximately 5 hours after taking his medication and it lasts for about 4 hours. The physical examination didn't show any pathologic findings. But it should be kept in mind that he didn't have any symptoms at the time of the examination. Based on the patient's expressions, these complaints were thought to be related to tardive dyskinesia. Termination of the treatment was suggested but despite this side effect, the patient didn't want to discontinue his medication and he didn't accept any other treatment. The treatment was continued by recommending caution against movement disorders.

The patient didn't come for a follow-up after that. About a month later we contacted him by phone and he informed us that he used the medication for 10–15 days but did not continue to do so after the headache was fully relieved, and that his jaw contractions disappeared completely.

Discussion

Tardive dyskinesia and tardive dystonia are caused by dopamine receptor blocking agents, mostly antipsychotics and sometimes antidepressants or calcium channel blockers.^[2] Duloxetine-associated tardive syndrome is rarely reported in the literature.

While pathophysiological basis of tardive dystonia is still uncertain, the current model is the hypersensitivity of postsynaptic dopamine-2 (D2) receptors in the nigrostriatal dopamine pathway resulting from prolonged inhibition of receptors. According to this theory, the long-term administration of dopamine receptor blocker causes denervation supersensitiv-

ity and upregulation of these receptors. As a result, there is an increased availability of postsynaptic D2 receptors to interact with endogenous dopamine and this leads to a hyperkinetic motor condition known as tardive dyskinesia.^[3]

Serotonergic and noradrenergic modulation of cholinergic pathways has also been suggested to play a role in the formation of tardive dystonia.^[4] In another theory, while D2 receptor blockade is present, repeated stimulation of D1 receptor by endogenous dopamine causes D1-mediated striatal pathway sensitization and dystonia.^[5]

Neurophysiological and electrical studies have shown that serotonin released by the raphe nucleus inhibits striatal neurons.^[6] Thus, the inhibition of neuronal serotonin reuptake by increasing the presence of serotonin may produce a similar therapeutic effect to dopamine blocking agents. This hypothesis potentially explains the movement disorders that may result from antidepressants. Preclinical researches have shown that duloxetine inhibits neuronal serotonin and norepinephrine reuptake. Increased serotonin transit may also result in inhibition of dopaminergic neurotransmission, which may contribute to tardive dyskinesia and tardive dystonia.^[6]

Tricyclic antidepressants, fluoxetine, paroxetine, venlafaxine, trazodone, valbenazine, antipsychotics, can cause tardive dyskinesia.^[7–13] There are a few case reports of duloxetine-related dystonia reported, and the symptom in one of these patients is mandibular muscle contraction.^[14,15]

In our patient, the facts that the symptoms first began within 3–4 days after the initiation of duloxetine treatment and that they start approximately 5 hours after taking his medication suggest dystonia. Because of this, termination of the treatment was planned.

While there is no definitive treatment for tardive dyskinesia, tetrabenazine is the most effective choice. Vitamin B6, vitamin E, donepezil, levetiracetam and botulinum toxin are other treatment options. In more serious cases, surgical intervention and deep brain stimulation may be the treatment option, but further research is needed.^[16]

Conclusion

Tardive dyskinesia and tardive dystonia are caused by dopamine receptor blocking agents, mostly antipsychotics and sometimes antidepressants or calcium channel blockers. To our knowledge, there is only two report of tardive dyskinesia and tardive dystonia during treatment with duloxetine. Although these medications have a lower risk of causing tardive syndrome, clinicians should be cautious for involuntary movement during duloxetine treatment.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

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