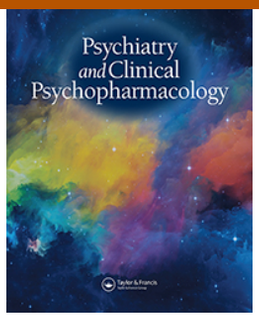

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CASE REPORT

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Reversible cycloplegia caused by duloxetine: a case report

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ABSTRACT

A Duloxetine is a balanced and potent dual reuptake inhibitor of serotonin and norepinephrine (SNRI) that has previously been shown to be effective in the treatment of major depressive disorder (MDD), generalized anxiety disorder, and diabetic peripheral neuropathic pain (DPNP). Cycloplegia is paralysis of the ciliary muscle of the eye, resulting in a loss of accommodation. Here, we present a reversible cycloplegia case caused by duloxetine use. The patient was a 24 years-old woman with MDD diagnosis. Patient had somatic symptoms like fatigue, myalgia, and headache, besides her depressive symptoms for the last two months. Escitalopram and sertraline were used for her MDD before and she had to quit both owing to side effects such as nausea and drowsiness. Duloxetine 30mg/day treatment was started in our outpatient clinic. In her first follow-up exam, she reported light sensitivity and increased visual impairment. The visual impairment led dizziness and an increase in headache. She was consulted to ophthalmology unit of our hospital and cycloplegia was detected in her eye examination. Duloxetine was stopped in the ninth day of treatment but cycloplegia negatively affected the patient's daily life for almost 4 weeks and impaired her functionality. Because of the paralysis of the ciliary muscle, the curvature of the lens can no longer be adjusted to focus on nearby objects. Eye pain, changes in vision and swelling or redness in or around the eye are mentioned as possible visual side effects in the medication of duloxetine. The ocular and visual side effects from a patient's systemic medication can range from mild to severe. These side effects may or may not be serious enough to warrant discontinuing treatment. Cycloplegia seems as a rare adverse effect in antidepressant treatment and may take a long time to wash out. Recognition of ocular and visual side effects is important to prevent and minimize serious complications. In such visual disturbances, eye examination of the patient should be performed and the responsible drug should be discontinued as early as possible.

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KEYWORDS
Duloxetine; cycloplegia; side effects; adverse effects

Introduction

Duloxetine is a balanced and potent dual reuptake inhibitor of serotonin and norepinephrine that has previously been shown to be effective in the treatment of major depressive disorder (MDD), generalized anxiety disorder and diabetic peripheral neuropathic pain [1]. Absorption of duloxetine begins two hours after oral administration, reaching a maximum plasma concentration in six hours. Half-life and volume of distribution are 12 hours and 1640 L, respectively. Similar remission rates with selective serotonin-reuptake inhibitors (SSRIs) increase the use of SNRIs in MDD [2]. The adverse effects of duloxetine are similar to traditional SSRIs. Most common adverse effect of duloxetine is nausea that is generally associated with discontinuation. Other common adverse effects are constipation, insomnia, hypersomnia, dizziness, weakness, drowsiness, sedation, fatigue, diarrhea, headache and xerostomia [3]. With the increased use of duloxetine, clinicians have begun to encounter different adverse effects. Cycloplegia is paralysis of the ciliary muscle of the eye, resulting in a loss of accommodation [4]. In this case report, we present a reversible cycloplegia caused by duloxetine use.

Case

Miss A, is a 24-year-old single patient, who lost her mother four years ago and lives with her retired father. She has had somatic symptoms like fatigue, myalgia and headache, besides her depressive symptoms like anhedonia, feeling of unworthiness, pessimistic thoughts, irritability, reduced self-confidence, aversion, lack of appetite and insomnia for last two months. Her social life has frustrated. She was examined in internal medicine clinic in last month for fatigue and her blood tests and revealed no problems.

In mental state examination, her affect was depressed and her range of mood was reduced. She appeared anxious and irritable. She answered questions at slow rate and speed. In her thought content, she did not have any suicidal thoughts or psychotic symptoms.

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She has been diagnosed with MDD. She mentioned that she used escitalopram and sertraline for MDD four years ago while she was at college education. She stated that she had to quit escitalopram and sertraline owing to side effects such as nausea and drowsiness. Duloxetine 30 mg/day treatment was begun in our outpatient clinic. In her first routine control at the end of first week, she suffered from light sensitivity and an increasing visual impairment. The visual impairment led dizziness and an increase in headache. She was consulted to ophthalmology unit of our hospital. She had no history of ocular disease or use of any eye drops. In the eye examination, her pupils were mydriatic, equal, round and were not reactive to light. Extraoculer movements were in full range. In slit lamp examination, the anterior compartment of the eye was normal and clear. Detailed ocular examination revealed normal fundus and intraocular pressure. Cycloplegia was detected in her eye examination.

A magnetic resonance imaging (MRI) of the brain with contrast and neurological examination was normal. A contrasted MRI report of the brain and neurological examination was also normal. Cycloplegia was assessed with Naranjo's adverse drug reaction (ADR) probability scale and the score was 9. According to this scale, it is considered that; 9 points and above: definite, 5–8 points: probable 1–4 points: possible and 0 points: doubtful ADRs [5]. Cycloplegia was considered to be associated with duloxetine. Duloxetine was stopped in the 9th day of treatment but cycloplegia persisted for almost 4 weeks and negatively affected the patient's daily life and impaired her functionality.

Discussion

Cycloplegia is paralysis of the ciliary muscle of the eye, resulting in a loss of accommodation. Because of the paralysis of the ciliary muscle, the curvature of the lens can no longer be adjusted to focus on nearby objects.

The factors that are likely to lead to cycloplegia in this case should be considered as adverse effect of duloxetine on ciliary muscle, neurological factors as Adie's tonic pupil, intracranial lesions affecting the third (oculomotor) nerve and third nerve nucleus.

In our case, the patient had no history of any eye diseases or neurological disorders and before the duloxetine administration, she had no complaints about her vision. Normal MRI report, normal neurological examination and the gradual recovery after the cessation of duloxetine, supported the idea that cycloplegia was an adverse reaction induced by duloxetine.

Antidepressants have various ocular and visual adverse effects. For instance, the tricyclic antidepressants produce many anticholinergic side effects. Symptoms of blurred vision, cycloplegia and dry eye are transient and reversible [6]. Reducing or changing the medication may improve the symptoms. In some cases, near vision lenses may be helpful. SSRIs are known not to have any significant ocular effects. Eye pain, changes in vision and swelling or redness in or around the eye are mentioned as possible visual side effects in the medication of duloxetine. The ocular and visual side effects from a patient's systemic medication can range from mild to severe. These side effects may or may not be serious enough to warrant discontinuing treatment. Recognition of ocular and visual side effects is important to prevent and minimize serious complications.

Conclusion

Cycloplegia seems as a rare but disturbing adverse effect in antidepressant treatment and may take a long time to wash out. In case of visual disturbances, eye examination of the patient should be performed and the responsible drug should be discontinued as soon as the cycloplegia was found.

Disclosure statement

No potential conflict of interest was reported by the authors.

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