Psychiatria Danubina, 2022; Vol. 34, No. 2, pp 306-307 https://doi.org/10.24869/psyd.2022.306 *Case report*

ACUTE ANGLE CLOSURE IN A PATIENT USING OLANZAPINE

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INTRODUCTION

Drug-induced secondary acute angle closure is a vision-threatening emergency. Many different drugs may cause acute angle closure by using different mechanisms (Lai & Gangwani 2012, Khurana et al. 2012, Lachkar & Bouassida 2007, Caglar et al. 2012).

Olanzapine is an atypical antipsychotic. It has a high affinity for D1, D2, D4, 5HT2A, 5HT2C, 5HT3, α-1 adrenergic, histaminergic, and muscarinic receptors. Olanzapine is a potent antagonist of serotonin 5HT and dopamine D2 receptors. There is also a weak anticholinergic effect (Citrome et al. 2019, Bymaster et al. 1996).

There are only two case reports in the literature on Olanzapine-related acute angle-closure (Achiron et al. 2015, Alarfaj & Almater 2021). In this case report, we aimed to present an extremely rare acute angle-closure secondary to Olanzapine treatment.

CASE

A 65-year-old male patient applied to the ophthalmology unit because of blurred vision and eye pain for two weeks. The patient, using 1x5 mg Olanzapine for two months, has a known schizophrenia diagnosis. In his history, there was no head injury, trauma, or surgery. We could only examine him in the supine position due to his physical disabilities.

At the examination, visual acuity was hand motion for each eye. Intraocular pressures of the right and left eyes were measured 47 and 53 mmHg, respectively, by using Portable Contact Tonometer. There were bilateral shallow anterior chambers with mid-dilated non-responsive pupillary and advanced cataracts (Figure1). We were unable to assess optic disc due to advanced cataracts. Ultrasonographic findings were short axial lengths (21.80 mm/ 21.96 mm), thick lenses (3.41 mm/ 4.30 mm), shallow anterior chambers (2.74 mm/ 2.24 mm). The diagnose was acute angle closure secondary to Olanzapine.

After hospitalization, we treated the patient by using intravenous mannitol 100 ml and topical medications including a fixed combination of Dorzolamide-Timolol 2x1, Brimonidine-Tartrate 2x1, and Latanoprost 1x1. Olanzapine treatment was discontinued by psychiatry due to ophthalmologic emergency.

Figure 1. Right (1) and left (2) anterior segment photo from first examination of the patient

Complaints of the patient regressed three days after starting treatment. Intraocular pressures of the right and left eyes were measured 18 and 19 mmHg, respectively. Despite our recommendation for cataract surgery, the patient did not accept a surgical approach. We discharged the patient after arranging his long term medical treatment.

DISCUSSION

Drug-induced acute angle closure is characterized by a sudden increase in intraocular pressure. Symptoms include blurred vision, headache, nausea, and vomiting. It is an emergency that can cause vision loss, glaucomatous optic neuropathy, a decrease in visual acuity, and loss of visual field. It can also cause corneal damage and cataracts (Lai & Gangwani 2012).

Certain drugs such as topical mydriatics, anticholinergic drugs, adrenergic drugs, antidepressants, sulfa derivatives, antipsychotics, anticoagulants, and botulinum toxin may cause acute angle closure by using different mechanisms (Lai & Gangwani 2012, Khurana et al 2012, Lachkar & Bouassida 2007, Caglar et al. 2012).

Secondary acute angle-closure glaucoma due to Olanzapine has been previously reported in the literature (Achiron et al. 2015, Alarfaj & Almater 2021), and this case is the third case with this side effect.

Antipsychotic drugs are important agents for schizophrenia treatment. They are classified as typical and atypical antipsychotic drugs (Souza et al. 2008). Olanzapine, an atypical antipsychotic used in schizophrenia and psychotic conditions (Bymaster et al. 1996), may cause pupillary blockage using anticholinergic effect. The anticholinergic effect of Olanzapine causes pupillary dilatation, which makes it contact with the anterior surface of the lens, results in blockage of the aqueous humor at the

posterior chamber of the eye. Increasing pressure in the posterior chamber pushes the iris anteriorly and causes the enclosure of the iridocorneal angle (Lai & Gangwani 2012, Achiron et al. 2015).

Ocular side effects of anipsychotic drugs are not limited to acute angle-closure. Cataract and retinopathy are other dose-dependent ocular side effects of these drugs (Li et al. 2008).

Female gender, family history, narrow iridocorneal angle, shallow anterior chamber, short axial length, and thick lens were the risk factors for acute angle closure (Lai & Gangwani 2012). Although the ultrasonographic findings of the patient were consistent with ocular biometric risk factors, the patient did not carry the risks of gender and family history.

The approach to acute angle-closure varies according to the underlying mechanism. The first step is the discontinuation of the causative drug. The recommended treatment for patients with narrow-angle is iridotomy and antiglaucomatous drugs (Khurana et al 2012). However, we could not perform iridotomy due to the physical disability of the patient. In spite of our cataract surgery recommendation, the patient did not admit it. After his complaints were regressed, we informed the patient and discharged him with medical antiglaucomatous treatment.

CONCLUSION

Acute angle-closure is a well-known emergency. In case of sudden intraocular pressure increase, the clinician should make systemic questioning and should be familiar with the side effects of Olanzapine and similar drugs.

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Gülce Gökgöz Özişik: design of the study, literature searches and analyses, manuscript writing.

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