

# Aripiprazole induced transient myopia

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## ABSTRACT

The aim of this study was to present a case of transient myopia due to aripiprazole used in the treatment of depression. A 21-year-old female who was being treated for depression with 15 mg/day aripiprazol during 2 months. She normally uses -3.75 D glasses. She was admitted our outpatient clinic with sudden onset blurring of vision in both eyes in spite of uses glasses for about 3 days. Using of aripiprazole was observed in the patient's story. She was found to have myopia of -6.0 diopters in both eyes with measurement of otorefractometer; her visual acuity being 6/10 in both of eyes with her glasses. The other eye examination findings of the patient was normal. The drug was discontinued and patient was followed. One month later on examination, the patient's visual acuity increased of 10/10 in both eyes. Follow the first day of the Ax values measured were 0.3 mm longer than 1 month after the measurement, the minimal difference between the other anterior segment findings were recorded. Although the specific mechanisms that cause acute myopia has not been fully revealed, it can be ciliary spasm, ciliary bodies effusion, peripheral uveal effusion and effects of ocular serotonergic intraneural fibers. We believe that it would be important for clinicians. They should keep in mind these conditions, when prescribing aripiprazole and need to inform patients about the side effects related to the eye.

*Keywords: Aripiprazol; myopia; otorefractometer; pentacam.*

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Aripiprazole is a new drug from the atypical antipsychotics group. Dopamine D2 and D3 receptors are serotonin 5-HT<sub>1A</sub>, 5-HT<sub>2A</sub>, 5-HT<sub>2B</sub> receptors with high affinity quinolone [1]. Schizophrenia is expected to occur in schizoaffective disorders, intractable depression and obsessive compulsive disorders [2]. The main side effects during aripiprazole treatment include somnolence, headache, vomiting, anxiety, and nose bleeds [2].

This drug-induced transient myopia was reported in only a few cases and the purpose of this study was to present a case of transient myopia in a young medical student treated with aripiprazole because of persistent depression [3–8].

## CASE REPORT

A 21-year-old female patient was diagnosed with depression and started on aripiprazole 15 mg / day for one month. The patient used -3.75 D glasses for both eyes glasses was admitted to our clinic with complaints of sudden decrease in visual acuity for 3 days. The use of aripiprazole was determined in the history of the patient and the visual acuity was -6/10 in both eyes. In addition, -6.0 D in both eyes was measured with autorefractometer. The fundus examination, intraocular pressures, eye movements and VEP results were normal.

The drug was discontinued and patient was followed.



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At the end of 1 month follow-up, the patient's sight with his own glasses increased to 10/10 in both eyes. On the first day of follow-up, the axial length (Alx) value measured by LENSTAR LS 900 Optic Biometer (Haag-Streit USA) was 23.40 mm, and the next measurement was 23.10 mm (0.3 mm shorter), while the other ten segment findings were minimal.

Anterior chamber depth (ACD) was 3.14 mm, first month was 3.12 mm, anterior chamber volume (ACV) was 188.56 mm<sup>3</sup>, 1 month after 188.18 mm<sup>3</sup>, anterior chamber angle (ACA) was 37.16 degrees, 1 month later 37.03 degrees, central corneal thickness (CCT) was 541 microns, 544 microns one month later, mean keratometry (mean K) 43.22, 43.08, and lens thickness (LT) 3.49 mm, and 3.40 mm, respectively. On gonioscopic examination, the angles were clearly observed.

## DISCUSSION

Although the specific mechanism causing acute myopia has been suggested to be related to ciliary spasm, ciliary body effusion, peripheral uveal effusion, and the effect of schooler serotonergic intranural fibers, the subject yet to not be fully cleared.

Three of the previous cases was connected with subject, while Selvi et al. mentioned myopia and diplopia [4]. However, only myopia and Parkinson-like motor movements were observed in this case. Selvi et al. presented myopia case related with aripiprazole (10 mg/day). They mentioned that two weeks after taking aripiprazole, myopia and diplopia in both eyes was observed [4]. Our study reported myopia case related with aripiprazole (15 mg/day). Myopia was observed 1 month after patient started taking the drug.

Kaya et al. reported that shorter than seven days after taking aripiprazole, myopia was observed in patient's both eyes. Also, when 10 days after patient stopped using aripiprazole (15 mg/day), myopia disappeared suddenly [5]. The conclusion of their study was similar to our study in terms of the adverse effect of aripiprazole (15 mg/day) on the patient.

In a similar case study by Nair et al. presented emetropic case related with aripiprazole (15 mg/day). Also, 1 month later taking aripiprazole, emetropic was observed [6]. Our study reported myopia case related with aripiprazole (15 mg/day). Thirty days after taking aripiprazole, myopia was observed.

In contrast to other studies, we measured some an-

terior segment parameters (ACD, ACV, ACA, CCT, K, LT) and Alx values at the time of myopia development and discontinuation of myopia. Alx was not very significant in the other parameters of 0.3 mm, but higher values were obtained in during myopia than in the later period. Although this situation is temporary, Aripiprazole may trigger ciliary spasm.

One of the cases developed myopia investigated the occurrence of earlier myopia at a dose of 10 mg/day compared to a dose of 15 mg/day. They found that the amount of Aripiprazole is independent factor for risk of myopia. In addition, all patient used the drug not developed myopia or rarely reported. Personal background, genetic predisposition can be risk factors for myopia.

Other drugs made temporary myopia (Acetazolamide, Topiramate, Hydrochlorothiazide, Metronidazole) were questioned in the patient [5]. The patient had no history of using systemic drug.

The outhar cause of myopia is choroidal effusion reported a few cases [9, 10]. Fundus examination, OCT and B sacn USG findings had not supported to choroidal effusion in our case.

We believe that this case report is important for clinicians prescribing aripiprazole. Clinicians should consider that the use of aripiprazole might cause side effects associated with the eye such as myopia and inform the patient about the side. When they observe similar side effects related to eye, they should discontinue and referral of the patient to an ophthalmologist.

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