

## CASE REPORT

# Aripiprazole induced transient myopia: A case report and review of literature

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### Abstract

Aripiprazole is a drug belonging to the group of atypical antipsychotics. Ocular side effects of aripiprazole are rare. We report a case of transient myopia in a 33-year-old male who was being treated for schizophrenia with oral quetiapine and was recently supplemented with aripiprazole. One month after the addition of aripiprazole the patient reported sudden onset painless blurring of vision in both eyes. He was found to have myopia of  $-3.0$  diopters in both eyes; his corrected visual acuity being 20/20. He was advised to discontinue aripiprazole. Ten days later on examination, the patient had an uncorrected visual acuity of 20/20 in both eyes. The stoppage of symptoms on stopping the drug indicates a strong correlation between the drug and the adverse effect. Ophthalmologists and psychiatrists must be aware of this reversible adverse drug reaction, so it may be treated promptly.

**Keywords:** Adverse drug reactions, drug induced myopia, aripiprazole

## Introduction

Aripiprazole is a new drug belonging to a class of atypical antipsychotics. It is a quinolinone derivative with a high affinity for dopamine D2 and D3 receptors, and serotonin 5-HT<sub>1A</sub>, 5-HT<sub>2A</sub> and 5-HT<sub>2B</sub> receptors (1). It is used in the treatment of schizophrenia and schizoaffective disorders, treatment resistant depression, bipolar disorder and obsessive-compulsive disorder (2).

Commonly reported side effects include somnolence, headache anxiety, insomnia, nausea, and vomiting (2). Other less frequently reported side effects include paroxysmal supraventricular tachycardia, Pisa syndrome, hiccups and rabbit syndrome (3). Out of 926 subjects who received oral aripiprazole in short-term, placebo-controlled trials, 3 subjects reported blurred vision. The exact cause and nature of this visual complaint, however, was not mentioned (4). Documented ocular side effects of aripiprazole are rare. There have been, to the best of our knowledge, only 2 other cases of aripiprazole induced transient myopia

## Case history

We wish to report a case of acute transient myopia caused by the use of aripiprazole. A 33-year-old male patient reported to our hospital with a complaint of sudden painless blurring of vision in both eyes. There was no other ocular complaint and he had no prior history of using glasses. His uncorrected visual acuity was 20/80 in both eyes. His best-corrected visual acuity was 20/20 in both eyes with a refractive error of  $-3.00$  diopters. Pupillary evaluation was normal with no afferent pupillary defect. Ocular motility was normal in both eyes. Slit lamp examination revealed shallow anterior chamber depth. Gonioscopic examination showed the angles to be moderately narrow:  $20^\circ$  (Grade II– Shaffer's classification) with a convex iris configuration. There was no evidence of pupillary block. Dilated fundus examination was normal in both eyes. Intraocular pressure in both eyes was 14 mm Hg. Systemically; the patient was not a hypertensive or a diabetic and did not have a history of substance abuse. He had, however been diagnosed with schizophrenia and was being treated with tablet

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quetiapine fumarate (Psynil, Crescent Therapeutics, Hyderabad, India) which had been titrated to daily 25 mg dose over three years. He was subsequently supplemented with a daily dosing of 15 mg of aripiprazole (Arpit, Crescent Therapeutics, Hyderabad, India), 30 days prior to the onset of the ocular symptoms. Given the clinical history, the normal intraocular pressures and the open angles on gonioscopy, there was a high degree of suspicion that the myopic shift was drug induced. The patient was therefore not investigated. A psychiatric referral was sought and subsequently oral aripiprazole was stopped with the patient being under close follow-up. The patient was re-examined 10 days later and was found to have an uncorrected visual acuity of 20/20. The anterior chamber was of normal depth and the intraocular pressures were 14 mm Hg in both eyes. Gonioscopy of both eyes showed the angles to be widely open: 45° (grade IV) Dilated funduscopy was normal.

Table 1. List of drugs reported to have caused acute onset myopia (not exhaustive).

Acetazolamide (7)
Anti-lymphocytic globulins (8)
Aripiprazole (3,5)
Chlorthalidone (9)
Dapsone (10)
Disothiazide (11)
Hydrochlorthiazide (12)
Indapamide (13)
Levomopromazine (14)
Mefenamic Acid (15)
Metronidazole (11)
Sulfasalazine (16)
Topiramate (17)
Triamterene (12)

## Discussion

Acute, transient myopia may be caused by many drugs (Table 1). The various mechanisms of drug-induced myopia reported in literature are accommodation spasm, ciliary body effusion, the effect of ocular serotonergic, interneuronal fibers, ciliary spasm, increase in thickness of the lens and peripheral uveal effusion (3,5). Ciliary body rotation and edema resulting in forward movement of iris lens diaphragm has been reported as another possibility leading to acute myopia (6).

Selvi et al. described a case of a 19-year-old female who was treated with oral aripiprazole for obsessive-compulsive symptoms (3). Fifteen days after the initiation of 10 mg daily dose of aripiprazole therapy, the patient developed myopia and diplopia, which resolved when aripiprazole was stopped. Our case had no complaints of diplopia. Kaya et al. have reported a case of a 21-year-old female, diagnosed to have bipolar affective disorder on sodium valproate (5). Oral aripiprazole 15 mg was added when she presented with manic symptoms. Seven days after the introduction of aripiprazole, she developed myopia in both eyes, which disappeared 10 days after stopping the drug (Table 2). It is also interesting to note that the duration between the initiation of oral aripiprazole and the ocular symptoms in our case was substantially longer than the other two case reports (30 days vs. 7 and 15 days).

We report this case of transient myopia, attributable to the use of aripiprazole. The resolution of symptoms on discontinuing the drug points to a strong co-relation between the symptoms and the medication. Adverse drug reactions such as sudden onset, transient myopia can be distressing for patients. Therefore, we believe that clinicians prescribing aripiprazole must inform and educate the patients regarding this possible ocular adverse effect. Ophthalmologists must be aware of this ocular adverse effect, which may occur well after therapy is initiated; promptly recognize it and stop the drug in order to reverse the symptoms.

Table 2. Details of cases of aripiprazole induced transient myopia.

	Age/Sex	Diagnosis	Pre-existing refractive error	Presenting ocular conditions	Myopia, in diopters	Medication in addition to Aripiprazole
Kaya et al(5).	21/F	Bipolar affective disorder	Nil	Myopia	OD: - 7 OS: - 8	Sodium Valproate
Selvi et al(3).	19/F	Obsessive Compulsive symptoms	Nil	Myopia, Diplopia	OD: - 4.0 OS: - 4.5	Sertraline
Our Case	33/M	Schizophrenia	Nil	Myopia	OD: - 3.0 OS: - 3.0	Quetiapine

## Declaration of interest

The authors report no conflict of interest. The authors alone are responsible for the content and writing of this paper.

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