

Aripiprazole Induced Acute Myopia In a Child: A Case Report

Çocuk Hastada Aripiprazol'ün İndüklediği Akut Miyopi: Olgu Sunumu

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ABSTRACT

Aripiprazole, is frequently used in child and adolescent psychiatry clinical practice. Ocular side effects of aripiprazole have been reported to be very rare. We present a child with major depression who developed acute myopia with aripiprazole use.

Key words: Aripiprazole, antipsychotic, myopia.

ÖZ

Aripiprazol çocuk ve adölesan psikiyatri klinik pratiğinde sık kullanılmaktadır. Aripiprazolün oküler yan etkilerinin oldukça nadir görüldüğü rapor edilmiştir. Bu yazıda majör depresyon nedeniyle aripiprazol kullanan ve akut miyopi gelişen bir olgu sunulmuştur.

Anahtar kelimeler: Aripiprazol, antipsikotik, miyopi.

INTRODUCTION

Aripiprazole, is frequently used in child and adolescent psychiatry clinical practice. Food and Drug Administration (FDA) approved aripiprazole for the treatment of schizophrenia, bipolar disorder and behavioral symptoms associated with autistic disorder in children and adolescents.¹ In addition, Open-label studies showed the efficacy of aripiprazole augmentation in adolescents with tic disorders, disruptive behavior disorders, obsessive-compulsive disorder, depression and aggressive symptoms.¹⁻³

Headache, insomnia, nausea, vomiting, lightheadedness, somnolence, constipation, increased appetite and dyspepsia are common adverse effects of aripiprazole.² Ocular side effects of aripiprazole have been reported to be very rare.⁴ Acute myopia is a rare idiosyncratic response to systemic use of medications. A variety of medications such as hyd-

rochlorothiazide, sulfonamide, topiramate, lamotrigine and fluoroquinolones have been reported to cause myopia.⁴ We present a child with major depression who developed acute myopia with aripiprazole use.

CASE REPORT

Sixteen-years-old female child was referred to our clinic with the complaints of sadness, crying, irritability, anger outbursts, self-injurious behaviors, lying and staying out in the night without parental permission. She has reported to have frequent quarrels with her parents and difficulty following family rules since her early adolescent years. In the past 6 months, she committed suicide three times by drug overdose and was hospitalized for two of these occasions. With the diagnosis of major depressive disorder and adjustment disorder with disturbance of conduct according

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to Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-V), was started on fluoxetine 20 mg/day. One-month follow-up, there was a marked improvement in her depressive symptoms without adverse effects. However, her anger outbursts, irritability, lying and impulsive self-injurious behaviors were reported to continue. Aripiprazole, as an augmentation of fluoxetine, was added to the treatment regimen with the dose 5 mg/day. 10 days after the addition of aripiprazole, the patient reported sudden onset blurred vision in both eyes. The patient did not have a history of any ophthalmic disease. For further evaluation, she was consulted to the ophthalmology clinic. Her ophthalmologic evaluation revealed bilateral myopia of -1.0 diopters and best corrected visual acuity was 20/20 in both eyes. Refraction did not change with cycloplegia. Intraocular pressures were found in normal range. Anterior segment and posterior segment examination was normal in both eyes. With the suspect of aripiprazole induced myopia, was advised to discontinue the medication. 1 week later, patient's ocular complaints completely resolved. At the ophthalmologic examination, her visual acuity was found as 20/20 in both eyes without correction. 4 weeks later, a re-challenge with the medication was initiated. Soon after aripiprazole was administered, the patient reported blurred vision again. Aripiprazole was discontinued and, within the following 5 days, patient's ocular complaints resolved. After the discontinuation of aripiprazole, no other medication was added to the ongoing fluoxetine treatment for a period of 15 days. Thereafter, risperidone was initiated in the dose of 0.5 mg/day and gradually titrated to 1 mg/day. At the 1-month follow-up of risperidone treatment, no ocular complaint was reported.

DISCUSSION

Blurred vision, as an adverse effect of aripiprazole, has not been comprehensively studied. In a placebo-controlled study on adult patients with antidepressant resistant major depressive episode, the frequency of blurred vision was reported to be 1.7% in the adjunctive placebo group and 7.4% in the adjunctive aripiprazole group.⁵ However, acute myopia as a clinical condition was not mentioned in this paper. In the available literature, there are four reports of aripiprazole induced myopia, all in adult cases (Table 1). The presenting

diagnosis of these cases were bipolar disorder, schizophrenia and obsessive compulsive disorder.^{4,6-8} The duration of the onset of myopia was reported to be between 5 days and 4 weeks.^{4,8} In parallel with these reports, myopia developed shortly after the aripiprazole treatment in our case. Selvi et al.⁷ described both myopia and diplopia, which was not present in our case. To the best of our knowledge, aripiprazole induced myopia has not been reported previously in a child.

Fluoxetine, a selective serotonin reuptake inhibitor (SSRI), is commonly used in children and adolescents with depression. SSRIs are generally well tolerated and ophthalmic adverse effects are reported to be very rare. The potential ocular side effects related to SSRIs are mydriasis, increase in intraocular pressure, glaucoma and oculogyric crisis.⁹⁻¹¹ To our knowledge, fluoxetine or any other SSRI was not reported to cause myopia previously. However, a drug interaction between aripiprazole and fluoxetine might be a possibility in the present case. Aripiprazole is metabolized via both CYP3A4 and CYP2D6 isoenzymes.¹² The coadministration with fluoxetine, which is a potent inhibitor of CYP450 2D6, may lead to an increased plasma concentration of aripiprazole. On the other hand, aripiprazole has no direct effect on the metabolism of fluoxetine.¹³

The specific mechanism of acute myopia with psychotropic medications is unknown. Different mechanisms have been proposed including accommodation spasm, ciliary body effusion, the effect of ocular serotonergic interneuronal fibers, disruption in ciliary functions and peripheral uveal effusion.⁵ It is difficult to relate these mechanisms with the known mechanism of action of aripiprazole on dopaminergic and serotonergic receptors. In light of the available reports with different doses, myopia with aripiprazole appears to be an idiosyncratic adverse event.

In the present case, patient was started on risperidone after the discontinuation of aripiprazole. One month follow up of risperidone treatment revealed no recurrence of myopia or any other ocular adverse effect. Karadag et al.⁸ also implemented a similar strategy and switched from aripiprazole to paliperidone palmitate treatment, the active metabolite of risperidone. They reported that myopia resolved with the

Table 1: Case reports on aripiprazole induced acute myopia (BAD: Bipolar Affective Disorder, OCD: Obsessive Compulsive Disorder).

	Age	Diagnosis	Dose	Duration	Intervention
Kaya et al. (2009)	21	BAD	15 mg	1 week	Discontinuation
Selvi et al. (2011)	19	OCD	10 mg	2 weeks	Discontinuation
Nair et al. (2011)	33	Schizophrenia	15 mg	30 days	Discontinuation
Karadag et al. (2015)	30	Schizophrenia	20 mg	5 days	Discontinuation and switch to paliperidone
Present Case	16	Depression	5 mg	10 days	Discontinuation and switch to risperidone

drug switch. The findings of these two cases, although must be replicated with future studies, may indicate that risperidone derivatives can be a good medication choice for those who developed myopia with aripiprazole.

Medication induced acute myopia can be distressing for patients and families. Ophthalmologists, patients and adolescent psychiatrists must be aware of this rare adverse effect. Patients who report sudden onset blurring of vision with the start of aripiprazole must be referred promptly for a detailed ophthalmologic evaluation. Whether this adverse effect is specific to aripiprazole or to atypical antipsychotics as a class will be clarified with future studies.

Declaration of Conflicting Interests

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Ethical approval

Informed consent was taken from the patient's parents for publication of this case report.

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