

Methylphenidate Induced Intraocular Pressure Increase

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Dear Editor;

Attention Deficit Hyperactivity Disorder (ADHD) is a neurobiological disorder presenting with impairment in attention, hyperactivity and impulsivity. ADHD usually becomes apparent in early childhood and may continue until early adulthood and even late adulthood (1). It is a worldwide common disorder effecting 5-10% of children and 4% of adults (2,3). Methylphenidate which is a well-known and commonly used central nervous system stimulant is one of the agents used in the treatment of ADHD. It is preferred both for children and adults with ADHD and behavioral disturbances (4,5). In addition, it may also be used in depression, narcolepsy, traumatic brain injury, aches due to cancer and Human Immunodeficiency Virus related cognitive impairments (6). The effectiveness, reliability and side effects of methylphenidate is well-known and most frequently seen side effects are difficulty in falling asleep, decreased appetite, stomachache and headache (7). In addition, methylphenidate as a sympathomimetic amine, which may trigger disorders increasing intraocular pressure, like open-angle glaucoma (8,9).

AK is a 23-year-old, single, university student living

with her family. Two months ago, the patient was admitted to our psychiatry clinic with complaints of inattention, difficulty in sustaining attention during listening and reading, easily getting bored by activities and decrease in school performance. Methylphenidate 18mg/day was started. After 2 months of regular treatment, she was admitted to our clinic claiming that her complaints were improved. In her psychiatric history, she had these complaints since early childhood, but she had never applied for professional help. In her mental state examination, there were signs of distractibility, difficulty in concentration, anxiety, irritability and impulsivity. In addition to these findings, the patient had blurred vision, which was gradually increased in the last 2 weeks. She was referred to an ophthalmology clinic, and it was reported that her intraocular pressure was high (32mmHg) with hemorrhagic lesions on the optical disc. As she had never had pre-existing problems related to eye, her vision and no history of intraocular pressure (IOP) in her family; these signs were evaluated as adverse effects of methylphenidate and the medication was stopped. Drug induced open-angle glaucoma was considered. During follow up, 2nd week and 4th week intraocular pressure of the patient were decreased to 25mmHg and

18mmHg, respectively. As the IOP values were stable and decreased no further recommendations were made.

Attention deficit hyperactivity disorder is a chronic disorder which should be treated regularly with medication. There are significant differences in cognitive abilities, school and/or occupational performance and quality of life between people who are on medication and who are not (10). In the literature, a case series of 14 children diagnosed with ADHD who had increased intraocular pressure, and decreased anterior chamber depth after 9 months of treatment with methylphenidate was present. These findings were interpreted as determinants of open-angle glaucoma (11). In another case which was treated with 60mg/day short action methylphenidate for 2 years, it was reported that intraocular pressure was increased to 30mmHg, as well as cataract and glaucoma were

developed. The disorder was resistant to anti-glaucomatous therapy and surgical intervention was required. In that case, changes in vision and values of ocular examination were interpreted to be related to methylphenidate. The maximum recommended dose of methylphenidate was 60mg/day (12). In our case, intraocular pressure was improved after 2 months' treatment of methylphenidate 18mg/day. Hence, increase in IOP was observed irrespective of the dose. When the medication was stopped IOP was decreased.

In conclusion, regarding our case and other literature results, we have concluded that methylphenidate treatment even in short duration, and low doses may effect intraocular pressure. From this perspective, it is necessary to take into account changes in intraocular pressure when stimulation drugs with sympathomimetic effects are planned.

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