



EDITÖRE MEKTUP / LETTER TO THE EDITOR

Methylphenidate induced first manic episode in adolescents: two cases

Ergenlerde metilfenidat ile indüklenen ilk manik atak: iki olgu

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To the Editor,

Early-onset bipolar disorder (EOBD) is a mood disorder that occurs in prepubertal age¹. In last decade, diagnosis of bipolar disorder in childhood and adolescence has increased. It is estimated that general child population is affected by Attention-Deficit/Hyperactivity Disorder (ADHD) between 3-7% and psychostimulant drugs –methylphenidate (MPH), amphetamine- are used in the first-line treatment. The most common side effects associated with MPH treatment include headache, insomnia, nausea, loss of appetite, weight loss, agitation and irritability². Further more in addition, psychosis-like and mania-like symptoms which are usually associated with high-dose methylphenidate treatment, may also appear³. Here, we present two adolescent cases who had manic episode after using MPH for treatment of ADHD.

In the first case, 14-year-old adolescent girl, high school student, lives with her parents. She was brought to the emergency department with complaints of irritability, restlessness and aggressive behaviours. In the first psychiatric examination, her mood was elevated and irritable. She had logorrhea, flight of ideas, distractibility, much self-reliance, grandiosity and psychomotor agitation. She was hospitalized in our psychiatry clinic with preliminary diagnosis of manic episode. Her brain magnetic resonance imaging (MRI) was normal. Laboratory tests were in the normal limit. A healthy verbal communication with the patient could not be established due to her logorrhea and flight of ideas. According to the anamnesis taken from her mother,

her manic symptoms had begun about ten days ago and the symptoms had intensified recently. In her medical history, it was learned that she was diagnosed with ADHD about 6 months ago. She had received short-acting MPH subsequently long-acting MPH for treatment of ADHD. She used 20 mg of short-acting MPH during this time, long-acting MPH treatment began approximately two weeks ago and used 54 mg daily. When her parents noticed the manic symptoms, they had stopped MPH treatment 3 days ago. Her Young Mania Rating Scale (YMRS) score upon admission was 35, she had no insight into his illness and initially refused treatment. Her mood had changed irritabl to euphoria. She began to dance and sing nearly 2-3 hours in a day. Lithium 600 mg/day and risperidone 2 mg/day treatments were started. Gradually lithium dose was increased to 900 mg/day and risperidone to 8 mg/day. Her blood lithium level was 0,84 mEq/L. As sialorrhea and extrapyramidal symptoms seen, biperiden 4 mg/days started. After 3 weeks of treatment she did not improve. So, with consent of her family 7 sessions of bilateral electroconvulsive therapy (ECT) were performed. After ECT sessions, her manic symptoms were regressed and the YMRS score decreased to 5. She was discharged with lithium 900 mg/day and risperidone 4 mg/day. She came to her control visits monthly for three months and she was euthymic.

The second case, 15-year-old adolescent boy, high school student, lives with his mother. He was admitted to our psychiatry clinic with the grievance of irritability, fidgetiness and increase in sexual desire. In the first psychiatric examination; he had euphoria,

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elevated mood, logorrhea, menacing speech, sexual content conversations and psychomotor agitation. In the light of these findings, he was hospitalized in our psychiatry clinic with preliminary diagnosis of manic episode. Laboratory tests and his brain MRI were normal. He had no known disease other than ADHD and epilepsy stabilized by medical treatment (Valproic acid 1000 mg/day). MPH treatment was started 3 months ago and he used 54 mg/day for last three weeks and he was still on medication during hospital admission. His manic symptoms started about a month ago, these symptoms were initially interpreted by his family as cheerfulness, but in last few days they have become serious and dangerous. His YMRS score was 37 at the time of admission to hospital. Risperidone 4 mg/day, clonazepam 2 mg/day, biperiden 4 mg/day and valproic acid 1500 mg/day treatments were started and MPH stopped. He did not respond significantly to treatment, gradually lithium 900 mg/day was started as the second mood stabilizer, risperidone dose was increased to 8 mg/day, clonazepam was stopped and with consent of his family 12 sessions of bilateral (ECT) were performed. His blood lithium level was 0,90 mEq/L and valproic acid level was 88 ng/mL. After ECT sessions, his manic symptoms were greatly regressed, YMRS score dropped to 9. He was discharged with lithium 900 mg/day, valproic acid 1500 mg/day, risperidone 8 mg/day and biperiden 4 mg/day. After discharge, he came to his follow-up visits for 5 months and his mood was once hypomanic, during this period treatment was regulated, he was euthymic at the next visits.

This side effect profile is often referred to as psychosis-like and mania-like symptoms. The adolescents in our presentation met the criteria for manic episode according to Diagnostic and Statistical Manual of Mental Disorders (DSM-5) at the admission and responded well to mania treatment. Manic symptoms of two adolescents appeared after long-acting MPH use. These conditions were assessed in terms of adverse effects of the drug. The Naranjo adverse drug reaction probability scale scores were 7, this score means a probable drug

adverse effect. These manic symptoms were evaluated as an adverse effect of MPH.

Although the exact mechanisms are unknown, the occurrence of manic symptoms may be related with the mechanism of action of MPH. Increased dopaminergic and/or noradrenergic transmission with MPH, especially in higher doses, may be related with psychotic/manic symptoms⁴. Acute onset, lack of mood symptoms in the former psychiatric history and the absence of the family history in the present cases are against a bipolar disorder diagnosis. It must be kept in mind that MPH may trigger a manic episode beyond mania-like and psychosis-like symptoms.

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