Olanzapine-induced Concurrent Tardive Dystonia and Tardive Dyskinesia in Schizophrenia with Intellectual Disability: A Case Report

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INTRODUCTION

Tardive dystonia and tardive dyskinesia (TDs) are rare extrapyramidal side effects that develop after long-term use of antipsychotics, but they are different syndromes and rarely occur at the same time. Olanzapine is an atypical antipsychotic drug associated with a low risk of extrapyramidal side effects in schizophrenia, but its associations with tardive movements are not clear. We present a case of a 19-year-old Asian female patient with schizophrenia and intellectual disabilities who developed concurrent TDs after long-term use of olanzapine. At her 10-month follow-up examination, her concurrent TDs had been treated successfully with clozapine. This case demonstrates that although the use of olanzapine to treat psychosis and behavioral disturbances is increasing due to its high efficacy and low rate of extrapyramidal side effects, concurrent TDs should be carefully assessed after long-term use of this antipsychotic, especially in patients with schizophrenia and intellectual disabilities. Clozapine, by preventing or reversing the debilitating consequences of concurrent TDs, may be an effective treatment for these patients.

KEY WORDS: Olanzapine; Tardive dystonia; Tardive dyskinesia; Schizophrenia; Intellectual disability.
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CASE

The patient was a 19-year-old Korean woman with moderate IDs. An intelligence test revealed a full-scale intelligence quotient of 39 on the Wechsler Adult Intelligence Scale. As shown in Figure 1, she was diagnosed with SPR and treated with 20 mg/day olanzapine, which led to complete remission of her psychotic symptoms of delusion and auditory hallucinations. One year later, during which time she continued olanzapine treatment, her neck started turning intermittently and involuntarily to the left. This severe, frequent, and spasmodic torticollis (also called cervical dystonia) caused her marked distress. In addition, she experienced aberrant eye blinks, abnormal tongue movements, and involuntary and irregular stereotyped choreiform or repetitive abnormal movements of the neck, trunk, face, and upper extremities. Her total Abnormal Involuntary Movement Scale (AIMS) score was 24. A neurologic exam with electroencephalography and blood tests, including plasma Cu²⁺ levels, was performed to rule out Wilson’s disease and other metabolic diseases. The results were negative. She had no history of alcohol or substance abuse and no family history of psychiatric or neurologic disorders. After olanzapine therapy was discontinued, we started 3 mg paliperidone and later switched to 10 mg aripiprazole to prevent worsening of the psychosis. Treatment with 12 mg trihexyphenidyl, 2 mg benzotropine, 3 mg lorazepam, 3 mg clonazepam, and 800 IU vitamin E in combination with 3 mg paliperidone or 10 mg aripiprazole was ineffective, and her concurrent TDs persisted without improvement. During tapering of her anticholinergics or benzodiazepines, 75 mg tetrabenazine was added to her drug regimen, which resulted in a dramatic but still partial improvement of her concurrent TDs. However, she experienced prominent psychomotor retardation and a dull sensation. Therefore, clozapine treatment was initiated and the dose titrated to 300 mg/day, and her other medications were discontinued. At her 10-month follow-up examination, her concurrent TDs had completely disappeared, and she felt no distress. Eventually, her condition was successfully treated with 250 mg clozapine, 1 mg benzotropine, and 1 mg clonazepam. Her final AIMS score was 0.

DISCUSSION

Our young female SPR patient with IDs developed concurrent TDs while on long-term olanzapine. Her concurrent TDs fully resolved after she started clozapine. This case differs from previous reports of antipsychotic-induced TDs. First, it suggests that a diagnosis of SPR in patients with pre-existing IDs increases the risk of concurrent TDs while on long-term antipsychotic treatment. IDs are common in individuals with SPR [17], and they increase the risk of TDs [16,18]. Therefore, our patient, with both SPR and IDs, was at high risk of tardive movements. Second, the patients suffered from concurrent TDs. According to one study, the relationship between the two extrapyramidal syndromes suggests that having tardive dyskinesia increases the probability of developing tardive dystonia [19]. However, whether tardive dyskinesia is specifically related to tardive dystonia is unknown. Since tardive dyskinesia causes intense suffering in affected patients, the strong possibility of concurrence suggests that these patients should also be carefully monitored for tardive dystonia.

Both the baseline diagnosis and the medication used for its treatment may contribute to tardive movements. Olanzapine is an atypical antipsychotic associated with a low risk of extrapyramidal side effects, including tardive movements, in SPR, but the exact relationship between olanzapine and tardive movements is unknown.
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