Case Report
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Successful Management of Tardive Dyskinesia with Quetiapine and Clonazepam in a Patient of Schizophrenia with Type 2 Diabetes Mellitus

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Tardive dyskinesia is one of the most significant side effects of antipsychotic medications. Antipsychotic treated schizophrenia patients with diabetes mellitus are more likely to develop tardive dyskinesia than those without diabetes. Clozapine is probably best supported for management of tardive dyskinesia. But clozapine has been strongly linked to hyperglycaemia and impaired glucose tolerance, so it is not preferred in patients with diabetes mellitus. We present a case of 35-year-old male with a diagnosis of schizophrenia and type 2 diabetes mellitus with tardive dyskinesia, who was successfully treated with quetiapine and clonazepam.

KEY WORDS: Movement disorders; Quetiapine; Schizophrenia; Diabetes mellitus.

INTRODUCTION

Tardive dyskinesia (TD) is one of the most significant side effects of antipsychotic medications. The average prevalence rate has been estimated to be around 30% for individuals taking antipsychotic medications.[1] Risk factors associated with TD include elderly patients, females, use of typical antipsychotics, higher dose of antipsychotics for prolonged period, extrapyramidal symptoms, cognitive deficits, structural brain damage.[2,3] Diabetes mellitus (DM) has been reported to be a risk factor for development of TD.[2,4,5] Although there remains some uncertainty about the causal mechanisms of this link,[6] studies have suggested an independent association between dyskinesia and diabetes.[7] Mukherjee *et al*.[8,9] suggested a possible association between TD and impaired glucose metabolism. Other studies report a higher incidence of DM in relatives of patients with TD, suggesting a genetic link between dopamine mechanisms and glucose regulation.[10] Schultz *et al*.[11] suggested that hyperinsulinemia and hyperglycemia associated with insulin resistance contribute to TD pathogenesis.

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Currently there are no US Food and Drug Administration approved drugs for treating TD. But the use of clozapine is probably best supported for management of TD.[12] Quetiapine,[13] another weak striatal dopamine antagonist and olanzapine[14] are also effective. But in patients of schizophrenia with TD with comorbid type 2 DM clozapine and olanzapine are not preferred, as they have been strongly linked to hyperglycaemia and impaired glucose tolerance.

We present a case of 35-year-old male with a diagnosis of schizophrenia and type 2 DM with TD, who was successfully treated with quetiapine and clonazepam.

CASE

A 35-year-old male patient who was premorbidly well-adjusted and without past and family history of neurological and psychiatric illness presented with complaints of suspiciousness, fearfulness, decreased sleep, irritability and muttering to self for last 5 years. He also developed perioral tremors and irregular movements of tongue from last 1 year. The onset of illness was insidious and course was fluctuating. From last 6 months his psychotic symptoms and perioral tremors increased in intensity. For his illness he received treatment from a psychiatrist with various antipsychotics like olanzapine 20 mg per day, haloperidol 10 mg per day, trifluperazine 10 mg per day, risperidone 6 mg per day in various combinations from last 3 years. He was compliant on medications,

but his psychotic symptoms did not improve significantly. He was also diagnosed with type 2 DM and receiving treatment (tablet glimepiride 1 mg+metformin 500 mg per day) from last 2 years. His blood sugar levels were within normal limits from last 6 months. Informed consent has been taken from the patient and on mental status examination, he has delusion of persecution, auditory hallucination of commenting type.

On physical examination, he was having perioral tremors with involuntary, repetitive, and irregular movements of tongue. Other than this no other abnormal finding was observed in physical examination. On Positive and Negative Syndrome Scale (PANSS) for schizophrenia[15] and abnormal involuntary movement scale (AIMS) for TD,[16] the patient scored 102 and 16 respectively. Hematological and biochemical indices (including blood sugar level) were normal as was computed tomography of the brain and electroencephalogram. No organic etiology could be found to explain the presence of TD. Risperidone (6 mg/day), haloperidol (10 mg/day), trihexyphenidyl (4 mg/day) were tapered to half the previously prescribed dose and stopped completely after a period of 10 days. He was started on tablet quetiapine 100 mg per day and increased to 300 mg per day. Along with this clonazepam 1 mg per day was started for adequate sleep and improvement of TD symptoms. With these medications his psychotic symptoms improved gradually over next 8 weeks. But his abnormal movements of face persisted as such. He continued the same treatment and after 4 months the patient was again reassessed. His abnormal movements of face and psychotic symptoms improved significantly. His blood sugar levels remained within normal limits during this period of treatment. After 4 months of treatment, on PANSS for schizophrenia and AIMS for TD the patient scored 54 and 8, respectively.

DISCUSSION

Though clozapine is best supported for management of TD in schizophrenia, but in our patient due to presence of type 2 DM it was not prescribed. So we considered quetiapine for his treatment. Diabetogenic potential of quetiapine is less than clozapine and olanzapine.[17] Due to its receptor profile, quetiapine is the atypical antipsychotic that is most similar to clozapine, which leads us to consider it for the treatment of TD. Quetiapine's low affinity and fast dissociation from post-synaptic dopamine D2 receptors should give the least risk of producing the symptoms of TD.[18-20] With the use of quetiapine our patient's psychotic symptoms improved significantly over the next 8 weeks. His dyskinetic movements of face improved after 4 months of treatment. His blood sugar levels were also remained within normal limits. As there are evidences for the use of clonazepam in the treatment of TD[21] and the sleep of our patient was decreased, so clonazepam 1 mg per day was prescribed.

TD is associated with more severe psychopathology and higher mortality.[22] Antipsychotic treated chronic schizophrenia patients with DM are more likely to develop abnormal movements than are patients with no DM. So we support the use of quetiapine and clonazepam in the treatment of schizophrenia patients with DM and TD.

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