Neuroleptic malignant-like syndrome induced with low-dose quetiapine treated with electroconvulsive therapy

Introduction

There is an increasing number of case reports of NMS-like syndromes related to atypical antipsychotics [1,2]. The following case report describes a male patient with bipolar disorder (BD) who developed NMS-like syndrome shortly after low dose of quetiapine, was successfully treated with electroconvulsive therapy (ECT).

Case report

Mr. A, a 56-year-old man with a diagnosis of BD, had previously received several trials of various typical and atypical (i.e. olanzapine and clozapine) antipsychotics and lithium. He has been experiencing gradually increasing left side prominent tardive Parkinsonism with tremor, rigidity and ante-flexion for the previous 10 years. Mr. A was not taking any psychotropic medication for the last 3 months. He was admitted to the outpatient unit with manic symptoms associated with grandiose delusions. He was treated with quetiapine at a dose of 25 mg in the morning and 100 mg in the evening 5 days before the admission to the inpatient unit. At hospital admission, Mr. A was hardly walking due to Parkinsonism. The "Extrapyramidal Symptoms Rating Scale" (ESRS) Parkinsonism subscale score was 29. The results of laboratory blood tests showed low serum iron level (49 μg/dl, normal range 65–150) and total iron binding capacity (269 μg/dl, normal range 300–400). On the third day of hospitalization, Mr. A became incontinent of urine and faeces, and experienced more muscle rigidity, dysphagia and profuse sweating. The ESRS Parkinsonism subscale score was 41. His vital signs and CBC and serum creatinekinase (CK) level (55 U/l, normal range 24–195 U/l) were in the normal range. On the sixth day, he became confused, and had tachycardia, fluctuating blood pressure, and fever (37.8 °C per axilla). His leukocyte level was 14.9×10^9/l and serum CK level had risen to 869 U/l. Detailed medical assessment showed no identifiable infectious or specific metabolic conditions. Quetiapine was discontinued, and lorazepam 4 mg/day was started. At the eighth day of admission, the patient was diagnosed as NMS and ECT was started. His mental state improved markedly after the third bilateral ECT and his temperature, autonomic symptoms, and laboratory measures returned to normal. After the ninth ECT session, the ESRS Parkinsonism subscale score was 29 and the patient was nearly euthymic.

Discussion

Although quetiapine associated NMS has been reported before, a direct casual link with quetiapine has not been well established. In this case report, NMS developed in a bipolar patient who was receiving only low daily dose of quetiapine (125 mg/day). We observed mildly elevated temperature with a sharp increase in CK levels and rigidity accompanying moderate but typical NMS symptoms in weeks of time. After the possible causes of leukocytosis and increased CK levels were ruled out, NMS was the best possible diagnosis for the patient. Patients with risk factors; subcortical syndromes (i.e. tardive Parkinsonism), history of mood disorder and iron deficiency anemia, might develop NMS with relatively safe atypical antipsychotics even on low doses. ECT should be considered as an option for the treatment.

References

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Received 22 July 2002;
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accepted 7 July 2003
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doi:10.1016/j.eurpsy.2003.06.003