

CASE REPORT

A CASE OF NEUROLEPTIC MALIGNANT SYNDROME WITH QUETIAPINE FROM IRAN

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Abstract

Objective: To report a case of neuroleptic malignant syndrome (NMS), secondary to low dose quetiapine in an elderly Iranian man. **Methods:** We report a 66-year-old male presented with a temperature of 39.30c, dysphagia, aphasia and decreased level of consciousness and mutism following the use of 25 mg quetiapine. **Results:** Some evidence suggests an atypical NMS presentation with the atypical antipsychotics. Atypical NMS has been defined as less severe than that seen with conventional antipsychotics. Symptoms include fewer EPS, smaller increases in CK, less muscle rigidity, and lower fever. **Conclusion:** Clinicians should be aware that NMS with a single dose of quetiapine is possible. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: XX XX.*

Keywords: Neuroleptic Malignant Syndrome (NMS), Quetiapine, Iran

Introduction

In 1968, Delay and Deniker named NMS which was initially introduced in French medical literature in 1960. According to DSM-IV, an essential feature of NMS is the "development of severe muscle rigidity and elevated temperature in an individual using a neuroleptic medication" [1]. These features must be accompanied by two or more of the following symptoms: diaphoresis, tremor, dysphagia, incontinence, changes in consciousness, mutism, tachycardia or changes in blood pressure, leukocytosis, and evidence of muscle injury (like myoglobuliniuria). NMS is thought to occur more frequently with high potency neuroleptics (typical antipsychotics) than with low-potency or atypical antipsychotics due to a drug's mechanism of action. Conventional antipsychotics block dopamine (D2) receptors, whereas new antipsychotics have greater antagonism for serotonin receptors than for dopamine receptors [2].

With the novel antipsychotics, the risk of NMS is likely to be decreased, but this remains probable [3, 4]. We searched through MEDLINE/PubMed and Iowa Drug Information Services and found 14 other cases that showed incidence of NMS with quetiapine [5].

Case Report

A 66-year-old Iranian male was admitted in emergency department with a temperature of 39.3 0c , dysphagia , aphasia ,decreased level of consciousness, masked face, rigidity, urinary incontinence and mutism . Primary differential diagnoses included aspiration, stroke and infection were considered. His Glasgow Coma Scale (GCS) score was 10. As these were excluded, NMS was considered. He was diagnosed to have Alzheimer disease of mild severity five years ago. Two weeks prior to the above presentation, he complained of depressed mood, poor sleep and palpitation. He was then prescribed quetiapine 25 mg and clonazepam 1

mg and propranolol 20 mg BID. One day after starting quetiapine, he developed a temperature of 39.3.c, associated with bradycardia and bradykinesia. His a creatine phosphokinase (CPK) level was 442 at first and 760 in the next laboratory test. He was admitted to the internal ward of hospital.

His blood pressure was at upper limit of normal; and his pulse rate was 55 bpm. The Brain Computed Tomography was normal following which, brain Magnetic Resonance Imaging was done. The findings showed age related atrophy and mild ventricles dilation with no mass, hemorrhage or shift is seen. An Arteriolosclerotic change was noted in both cerebral hemispheres. Also there was mild mastoiditis on the right side. Arterial blood gases showed a metabolic acidosis. (pH=7.325, PCO₂ (Pressure of carbone dioxide) = 40.8, PO₂ (Pressure of oxygene)=78.9, Oxygen Saturation=94.1, HCO₃(Bicarbonate)=20.6, BE=-4.7, BE ecf (Base effect extra cellular fluid) = -4.5, BB=43.2). In this case, we conclude that the concomitant administration of quetiapine and propranolol caused neuroleptic malignant syndrome.

Treatment

As soon as NMS is suspected in this patient, antipsychotic therapy was been withheld. Dantrolene was used to treat symptoms of muscle rigidity which improved after 3 days. Dantrolene was discontinued on the 4th day. Hydration is especially critical in this group of patients to avoid renal failure secondary to development of rhabdomyolysis [6] too. Supportive care for patients with NMS includes cooling blankets, venous thromboembolism prophylaxis, and mechanical ventilation if breathing is impaired due to muscle rigidity [7]. Bromocriptine 2 times daily at beginning doses of 2.5 mg and increased up to 5 mg 2 times daily and amantadine 100 mg twice daily was prescribed. Electroconvulsive therapy (ECT) is an effective treatment for NMS, but not administered in this case. Finally, the patient was discharged in favorable condition, with complete resolution of symptoms. Bromocriptine was discontinued but amantadine has been

recommended for use. After two weeks, he was good but could not recall what happen to him. Approximately 63% of patients with NMS resolve within a week, and almost all recover within a month [8].

Discussion

CNS disorders to be considered in the differential diagnosis of this case include infection, acute lethal catatonia, seizures, Parkinson's disease, hepatic and renal encephalopathy, and cerebrovascular accident. Systemic disorders to consider include sepsis, thyrotoxicosis, pheochromocytoma, tetany, and acute porphyria. In addition, several adverse drug reactions must be considered such as malignant hyperthermia, anticholinergic delirium, antipsychotic-induced heat stroke, lithium toxicity, strychnine poisoning, heavy metal poisoning, serotonergic syndrome, illicit drug ingestion (eg, amphetamines, phencyclidine), and withdrawal states from alcohol or benzodiazepines [9 - 11].

Some evidence suggests an atypical NMS presentation with the atypical antipsychotics. Atypical NMS has been defined as less severe than that seen with conventional antipsychotics. Symptoms include fewer EPS, smaller increases in CK, less muscle rigidity, and lower fever [12]. Due to the difference in their affinity for dopamine receptors, patients receiving typical antipsychotics have a greater risk of developing EPS. We must also consider that even single dose of an atypical antipsychotic can give rise to extrapyramidal adverse effect like NMS.

Declaration of interest: None

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Received: 25 January 2012

Accepted: 13 February 2012