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Neuroleptic malignant syndrome; a case report

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ABSTRACT: Neuroleptic malignant syndrome is rare and life-threatening, neurological disorder that has been observed to occur in some patients after low potency psychotropic drugs are administered or when dopaminergic medications are suddenly discontinued. In this report, the authors present a case of a 26-year-old male patient with a known history of psychiatric illness, who has use of antipsychotics, especially risperidone. He had muscle rigidity, tachycardia, tremor and elevated level of creatine kinase observed in this patient. This resulted in an NMS episode that was quickly diagnosed and managed, leading in an uneventful conclusion.

KEYWORDS: antipsychotics, risperidone, neuroleptic malignant syndrome, dopamine.

I. INTRODUCTION

The neuroleptic malignant syndrome is a severe idiosyncratic reaction Neuroleptic malignant syndrome is a rare and life-threatening, neurological disorder most often caused by an adverse reaction to the use of any neuroleptic(antipsychotic) medication. It occurs after low-potency psychotropic drugs are administered or when dopaminergic medications are suddenly discontinued. Its clinical manifestations include altered mental status, severe muscular rigidity, elevated fever, tremor and elevated creatine kinase (1).

NMS can cause permanent damage, such as neurological sequelae, or patient death if it is not identified and treated right away. Since second-generation antipsychotics (SGAs) have a better pharmacodynamic profile, it was once believed that they were free from the risk of causing NMS (2).

According to an analysis of data on neuroleptic-using psychiatric inpatients between 1966 and 1997, the frequency of NMS varied from 0.2% to 3.2%.[9] Another study found that the frequency of NMS ranged from 0.01% to 0.02% among patients inquired under a drug safety program between 1993 and 2000 (3).

Case presentation:

A 26-year-old male patient with underlying psychiatric illness, presented to hospital with high grade fever, aggression, altered behavior he had a history of psychiatric illness which was diagnosed 9 months prior. Patient was under regular medication like oral risperidone 2mg twice a day, oral sodium valproate 500 mg twice a day, and oral tetrahydropyran 2mg twice a day

The patient was admitted to the hospital with high fever, restlessness, increased muscle rigidity, inform of stary looks and irrelevant cry since past 20 days, involuntary movements of both hands, drooling of saliva left sided, urinary inconvenience. He also had tachycardia, with a heart rate of 110 – 120 beats per minute, his blood pressure was normotensive. The administration of antipsychotic medication was discontinued due to suspected NMS. Further examination revealed a conscious man who demonstrated generalized rigidity and patient exhibited parkinsonian features, including tremors, gait horizontal, nystagmus, mask like facies. The initial laboratory test results for serum creatine kinase (CK) showed high levels (5120 U/L), arterial blood gas values showed normal, other laboratory results, including electrolyte levels, were normal. an electrocardiogram revealed no acute ischemic changes. Based on the clinical findings and laboratory results, a diagnosis of NMS was confirmed.

The patient scheduled medications were lorazepam 2mg intramuscular every six hours, intravenous fluids hydration with close monitoring of urine output, oral diphenhydramine 25mg three times daily, oral amantadine 100mg once daily, oral bromocriptine 2.5mg three times daily, oral

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iron folic acid 335mg once daily. In the ward he required intermittent treatment. Within a few days, his body temperature was back to normal and CK level showed reducing. His NMS symptoms improved; the bromocriptine dose tapered off. To control psychotic symptoms, the patient was prescribed lorazepam 2mg once daily. After 4 weeks, his depressive and psychotic symptoms improved, and he was discharged from hospital without further complications.

II. CASE DISCUSSION:

NMS has been reported after using low-potency first- generation and second-generation antipsychotic medications. Most NMS cases include the use of first-generation antipsychotics with high potencies, such as fluphenazine and haloperidol. Selective antiemetic drugs, such as promethazine, metoclopramide, have also been known to cause NMS (1). In our patient, after a dose of 2mg risperidone twice a day, an atypical antipsychotic, signs of NMS were evident. A collection of symptoms, including arrhythmias, AMS, hyperpyrexia, labile blood pressure, and muscle cramps and rigidity, usually precede NMS. Mortality rates for NMS used to be greater than 30% in the last few decades

Since there is no diagnostic test for NMS, the diagnosis must be made primarily on clinical suspicion by comparing laboratory results with clinical presentation (4). A raised CK level (> 1000 U/L) is a sensitive test for NMS, but the CK level can increase to >5000 U/L, as in the case of our patient (5). Once the diagnosis of NMS is suspected, the medications that may be causing the NMS should be discontinued (6). Drugs such as amantadine, bromocriptine and dantrolene can be used to treat muscular rigidity (7). An additional aim of hydration is to replenish the body's excessive fluid loss caused by a high fever. Symptoms of NMS usually take 2 weeks or longer (sometimes up to 4 weeks) to resolve (4).

This case presentation's main lesson is to emphasis how crucial it is for healthcare professionals to diagnose NMS as soon as possible because early detection can save lives. Furthermore, it's critical to consider atypical antipsychotic drugs as a potential cause of NMS. Given that psychiatrists frequently give neuroleptic drugs, it is critical that medical professionals be able to identify NMS and promptly send patients to the appropriate discipline for additional management.

III. CONCLUSION:

Neuroleptic malignant syndrome is a medical emergency. Since our patient was allergic to most antipsychotics, exhibiting disorganized speech, hallucinations, and altered behavior high index of clinical suspicion is required for diagnosis and prompt treatment.

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