ATYPICAL NEUROLEPTIC MALIGNANT SYNDROME; A CASE REPORT

Yadav J S[1], Arun K[2], Yadav Pradeep[3], Jain Sobhit[4], Madhu[5]

Department of Psychiatry, IMS, BHU, Varanasi [1,2,3,4,5]

ABSTRACT

Neuroleptic malignant syndrome (NMS) is a life-threatening condition associated with the use of neuroleptic agents and is characterized by a clinical syndrome of muscle rigidity, fever, mental status change, and autonomic instability. We found a case of NMS in a patient that has all essential criteria for diagnosis except muscular rigidity and high-grade fever, though the intermittent low grade fewer persisted during the management phase but muscular rigidity was not reported, hence our area of interest is atypical presentation of NMS in this case.

Key Words: Neuroleptic Malignant syndrome, Neuroleptic agents, Muscular Rigidity

Introduction:

NMS is commonly associated with neuroleptic agents; various studies found that the incidence varies from 0.02 to 3 percent[1].Sometimes NMS may not manifest its typical features, therefore atypical presentations possess a challenges of early diagnosis and management. In this case we have highlighted the importance of atypical features in diagnosis of NMS.

Case Summary:

A seventeen year-old student from rural background brought in psychiatry OPD with complaints of increased salivation, fever, decreased verbal output, and altered consciousness for 6 hour. The history suggested patient developed increased talk, easy irritability, decreased sleep, and anger outburst since one-week, the onset of symptom was acute. Patient was admitted in a private hospital, where he received inject able haloperidol for 3 days and developed above symptoms. He got admission in psychiatry indoor SS Hospital and examined, his body temperature was 102.4°F, blood pressure was 150/90 mm Hg, heart rate 140 beats /min, and respiratory rate was 26 breaths /min. On neurological examination toes were extensor bilaterally, deep tendon reflexes were brisk and symmetric, the primitive reflexes and jaw jerk were also present. The biochemical examination showed leukocytosis and raised CPK (3646 on day 1, 3106 on day 2 and 1296 on day 3). Urinalysis and blood culture reviled no infection. CT scan brain and other radio graphical examination were normal.

Though the symptoms were temporally related to high potency antipsychotic, therefore after exclusion of other possibilities, diagnosis of NMS was made, hence patient was hydrated, cold sponging and other conservative management were given. The CPK dropped to 830 on Day 8th, and 362 on Day 10th, finally patient was stabilized on quitiapine 50 mg BD and discharged after two week of treatment. On subsequent follow up in OPD after one week he was asymptomatic.

Discussion:

Diagnosis of Neuroleptic malignant syndrome (NMS) must consider after careful exclusion of other causes [2]. To establish positive identification, a differential diagnosis relies on four major criteria; hyperthermia, rigidity or other forms of EPS, autonomic disturbances and mental status changes[2]. Some authors described that, at least 5 different sets of criteria for the diagnosis of NMS.(Picard et al 2008)[3]. Though Diagnostic and

Statistical Manual of Mental Disorders (DSM IV)requires the presence of two core features of severe muscle rigidity and elevated temperature after recent initiation or change in dosage of an antipsychotic, along with two or more of the following symptoms: diaphoresis, tremor, dysphagia, incontinence, changes in level of consciousness, mutism, tachycardia, elevated or labile blood pressure, leukocytosis, and elevated CPK levels.

The frequency of NMS among patients receiving antipsychotic medication ranges from 0.07% to 2.2%, and mortality rates through this condition is quit high, this range from 10% to 30% [4]. Abrupt and profound dopamine D2 receptor blockade by antipsychotic drugs has been proposed to be the cause of the signs and symptoms of NMS. Muscle rigidity thought to be caused by dopamine blockade in the nigrostriatal region, and extreme muscle rigidity can produce hyperthermia. In addition, hypothalamic dopamine blockade may result in impaired temperature regulation and precipitate the autonomic changes associated with NMS. Disequilibrium in neurotransmitter systems involving epinephrine, norepinephrine, and serotonin, caused by antipsychotics, are also thought to play a role in the pathophysiology of NMS [3].

Atypical NMS is defined as a presentation of three of the four signs[5]. In these cases, signs and symptoms occur after exposure to an antipsychotic agent .Atypical cases of NMS have been reported without hyperthermia and/or musclerigidity, it has been hypothesized that such atypical cases are a prodromof the disease and represent impending NMS with atypical presentation [3]. Onset of NMS typically evolves over a period of days, but in our case it has been suspected that atypical symptoms of NMS occurred rapidly and recovered soon, this hypothesis supported bya review study in which author found 66% of cases recovery within the first week (reported by single study)while others studies reported it took longer upto30 days[6].

The role of creatine phosphokinase (CPK) is important to detect and monitor NMS, but CPK is not specific to NMS[7]. The elevation of CPK level also found in muscular, hepatic, brain or cardiac insults. In our case history of patient not suggested any other associated cause that can lead to high CPK level except neuroleptic injection. Though the level of CPK rapidly became normal so we again predict that premature typical symptom of NMS presented like atypical.

Cessation of the neuroleptic trigger is the first step in the management of NMS. Supportive therapy, such as fever reduction, hydration, and nutrition, is important until the blood levels of the neuroleptic drug decrease.

Bromocriptine, a dopamine agonist, has also been used in doses of 2.5–10 mg up to 4 times daily. It improves muscle rigidity within a few hours, followed by a reduction in temperature and an improvement in blood pressure. Hypotension is the most common adverse effect of bromocriptine therapy [4],there fore it requires supervised titration doses. The alternative electroconvulsive therapy has also been shown to be an effective treatment in cases of NMS when drug therapy has failed [8]. In our case we have managed patient conservatively but after recovery with NMS patient developed affective symptoms, therefore qutiapine that causes rare NMS was titrated up to 50 mg BD.

Conclusion:

NMS is a potentially life-threatening condition with variable clinical presentation. It is important to have a high index of suspicion for NMS, even if there are no typical symptoms.

References:

1. *LevensonJL. Neuroleptic malignant syndrome. Am J Psychiatry 1985; 142:1137.*
2. *Caroff SN. Neuroleptic malignant syndrome: still a risk, but which patients may be in danger? Curr Psychiatry 2003;2(12):36–42.*
3. *Picard LS, Lindsay S, Strawn JR, Kaneria RM, Patel NC, Keck PE,Jr. Atpical neuroleptic malignant syndrome: diagnostic controversies and considerations. Pharmacotherapy 2008;28(4):530-535.*
4. *Adnet P, Lestavel P, Krivosic-Horber R. Neuroleptic malignant syndrome.Br J Anaesth 2000; 85(1):129-135.*
5. *Zarrouf FA, Bhanot V. Neuroleptic malignant syndrome: Don't let your guard down yet. Curr Psychiatry 2007;6(8):89–94.*
6. *M. C. Borovicka, L. C. Bond and K. M. Gaughan, "Ziprasidone- and Lithium-Induced Neuroleptic Malignant Syndrome," The Annals of Pharmacotherapy2006; 40 (1):139-142.*
7. *Stevens DL. Association between selective serotonin-reuptake inhibitors, second-generation antipsychotics, and neuroleptic malignant syndrome. Ann Pharmacother 2008;42(9):1290-129.*
8. *Trollor JN, Sachdev PS. Electroconvulsive treatment of neuroleptic malignant syndrome: a review and report of cases. Aust N Z J Psychiatry 1999; 33(5): 650-659.*