NEUROLEPTIC MALIGNANT SYNDROME: REPORT OF 2 CASES

D. K. DESHMUKH 1
V. S. JOSHI 2
M. R. AGARWAL 3

Neuroleptic malignant syndrome (NMS) is one of the rare but potentially fatal, idiosyncratic reaction to Neuroleptics and other medications (Smego and Durack, 1985). It is characterised by fever, autonomic dysfunction, rigidity, altered conscious state with associated laboratory parameters like raised CPK, LDH, Hepatic enzymes, leucocytosis. This syndrome was first described by Delay and Deniker in 1968. Since 1980 about 50 cases have appeared in British and French literature (Coons et al, 1982; Goekoop and Garbaat, 1982). A psychiatrist must be aware of this syndrome which may be many times under diagnosed.

Recently we have successfully treated two cases of Neuroleptic Malignant Syndrome.

Case Reports

Case 1: Miss. R., a 14 year old girl was admitted at the J. J. Hospital, with Schizophrenia. Patient was given injection haloperidol 5 mg. intramuscularly and received 3 more injections of the same on the following day.

Approximately 36 hrs. following the first injection, she was found to have high grade fever. Soon thereafter, she was found to be mute, rigid, catatonic and was given injection Benzatropine 2 mg. i.m., but she did not respond. At this stage a lumbar puncture was done, patient's CSF was normal. Patient's EEG was also normal.

Next day, she started having fluctuating BP varying from 160/120 to 120/80. Her temperature fluctuated between 99°F and 104°F. She had excessive sweating, tachycardia, rigidity and altered conscious stage. At this stage a diagnosis of NMS was considered and the following investigations were carried out.

Patients WBC count was 14500 mm³, CPK 2270 MU., LDH 321 IU., SGOT 120 units/ml., SGPT 60 units/ml.

Patient's W.B., S. creatinine, Blood Urea, Blood Sugar, X-ray chest, Urine-exam were within normal limits. Patient was treated with I.V. fluids and tepid sponging and other supportive care. Within 4-5 days patient started showing improvement and by 15th day of admission patient had improved completely from NMS. No specific treatment in the form of Dantrolene Bromocryptine was given. After resolution of NMS her psychotic features persisted.

Patient was treated with ECTs under I.V. Diazepam and was not given any neuroleptics. Her psychotic features improved by 8th ECT and she was discharged by 6th week of her admission and she is under regular follow up.

Case 2: Mrs. M., a 24 year female presented with schizophrenia. She was started on

1. Hon. Associate Professor in Psychiatry, J. J. Hospital and Grant Medical College, Byculla, Bombay-400 008.
2. Resident in Psychiatry, J. J. Hospital and Grant Medical College, Byculla, Bombay-400 008.
3. Resident in Psychiatry, J. J. Hospital and Grant Medical College, Byculla, Bombay-400 008.
oral haloperidol 5 mg. tds. She did not show much improvement. She was also given inj. haloperidol 5 mg/im. on four occasions.

She was then admitted in a hospital. She did not show much improvement on OPD treatment.

On day of admission, patient developed temperature of 100.4°F. No cause for fever could be detected clinically at this stage. On 3rd day of admission patient had temperature of 103°F with neck rigidity but without Kernig's sign. Investigations of C.B.C. Urine, X-ray chest, C.S.F., were normal. Next day patient's fever fluctuated between 100.4°F to 103°F. She also had altered sensorium, and mutism, catatonic posture, sweating, rigidity and tachycardia. Her BP remained normal.

At this stage a diagnosis of NMS was entertained and further investigations showed. CBC—WNL., CPK—2000 MU., LDH-780 IU, SGOT-1250 units/ml, SGPT-400 units/ml, S. creatinine—1.85 mEq/lit Neuroleptics were discontinued. A general supportive care was given which included tepid sponging, I.V. fluids etc. This patient too was not given any specific treatment in the form of Dantrolene and Bromocriptine. By 5th day of her admission her temperature had subsided, patient became alert; started taking orally. Following improvement from NMS her psychotic features became prominent and she was started on ECTs. Patients blood tests were repeated after 1 week. Her SGOT and SGPT were 300 units/ml and 200 units/ml respectively.

Her psychotic features remitted on ECTs and she was discharged without medication. However, within 15 days of discharge patient had relapsed. Hence patient was put on oral Triluperazine and till now patient is being followed up on the same without recurrence of NMS.

**COMMENTS**

Important differential diagnosis in these cases would have been malignant hyperthermia. Neuroleptic induced heat stroke, acute lethal catatonia, CNS infections and toxic encephalopathy (Levenson, 1985). Malignant hyperthermia though clinically indistinguishable from NMS usually follows i.v. Succinylcholine and inhalational anesthetics. Heat stroke is distinguished from NMS by absence of rigidity and sweating. NMS, though clinically indistinguishable from lethal catatonia, usually follows neuroleptics and other drug administration. Acute dystonic reaction can be distinguished from NMS by absence of fever and Leucocytosis (Levenson, 1985).

Cases have been reported in literature where NMS were treated with Dantrolene, Bromocriptine and Amantidine (Levenson, 1985). However, they have not been shown to be clearly and consistently superior to other supportive intervention. At present, there is no clear evidence of the value of any specific treatment (Levenson, 1985). In view of this, both patients were treated with supportive care only. Cases have appeared in the literature where NMS recurred following reintroduction of neuroleptics (Levenson, 1985). In view of this potential risk, patients were treated with ECTs and diazepam. Both patients showed progressive improvement and their psychosis remitted completely.

Since both had Schizophreniform psychosis with good prognostic features, neuroleptics were not continued and they were advised to follow up at regular intervals. However, since the 2nd patient had a relapse after 15 days, she had to be started on tab. Triluperazine again. Starting the patient on tab. Triluperazine did not cause a recurrence of NMS, indicating that reintroduction of a different group of antipsychotic, particularly in a
non-injectable form, may not produce a recurrence of NMS.

This can be explained by the fact that NMS being an idiosyncratic reaction can occur in a patient who is susceptible to one group of antipsychotics and not to another. The antipsychotic should preferably be in an oral form, is only a conjecture and more cases are to be studied in order to form a conclusive opinion.

REFERENCES

Coons, D. J., Hillman, F. J. and Marshall, R. W. (1982). Treatment of Neuroleptic Malignant Syndrome with dantrolene sodium. A case report. Am. J. Psychiat., 139, 944.

Delay, J. and Deniker, P. (1968). Hand Book of Clinical Neurology : Diseases of the Basal Ganglia, Vol. 6., New York. Elsevier North Holland Inc.

Goekoop, J. G. and Carbaat, P. A. T. (1982). Treatment of Neuroleptic Malignant Syndrome with Dantrolene. Lancet, 2, 49.

Levenson, J. L. (1985). Neuroleptic Malignant Syndrome. Am. J. Psychiat., 142, 1137.

Smego, D. A. Jr. and Durack, D. T. (1985). The Neuroleptic Malignant Syndrome, Arch. Intern. Med., 142, 1183.