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Letter to the Editor

Amantadine and Memantine in Catatonic Schizophrenia

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To the Editor:

The use of typical and atypical antipsychotics has provided marked improvement in many schizophrenic patients. Numerous patients, however, do not achieve full remission of symptoms, often having recurrent episodes. Several adjunctive therapies have been researched targeting the NMDA receptor (1). Northoff has reported that patients with catatonia who do not respond to lorazepam may respond to amantadine through an NMDA receptor antagonist activity (2). To our knowledge, there have been only a few cases in which amantadine has shown benefit (2). Memantine, another NMDA antagonist, has proved beneficial in catatonic schizophrenia (3,4).

A 57-year-old man with schizophrenia was discharged after a 4-month hospitalization. His admitting symptoms were wandering away from the group home, refusal to eat and drink, intermittent mutism and irritability. The patient was discharged on lorazepam 1 mg bid, valproic acid 1000 mg bid, olanzapine rapidly disintegrating tablets 20 mg qhs, benztropine 1 mg bid and haloperidol 5 mg qD. The patient had a history of multiple hospitalizations with prominent catatonic signs over 30 years. His scores on the Bush Francis Catatonia Rating Scale (BFCRS) ranged from 8 to 19 in multiple assessments in the year before the index hospitalization. Negativism was prominent in each of these assessments (2-moderate or 3-severe) (5). His hospital course was prolonged because of partial response to olanzapine, haloperidol and lorazepam (for catatonia). After discharge he remained negativistic, refused food, daily hygiene and refused to follow the group home rules. There were several adjustments of medication including increasing lorazepam to 6 mg per day in divided doses. There was only temporary improvement. A trial of lorazepam of 8 mg per day was not tolerated due to sedation. Rehospitalization was considered because of his refusal to eat or follow instructions and tendency to wander.

Two months after discharge, amantadine 100 mg tid was started, lorazepam was continued at 1 mg bid and other medications remained unchanged. Within three days, his symptoms improved greatly. He spoke more freely, ate regularly at meals and was cooperative with his care. He no longer wandered away from the group home and remained as an outpatient. His score 2 weeks after amantadine was added on the BFCRS was 7 (staring, grimacing, echopraxia and a grasp reflex but no negativism nor mutsim). The valproic acid level was 56 mg/dl.

Seven months after discharge the patient was noted to have increased negativism. His BFCRS was 5 (intermittent mutism, staring, some refusal of food and negativism). The amantadine dose was increased to 100 mg qid with improvement in negativism for several months. However, catatonic signs worsened one year after discharge. Memantine was added to amantadine and increased to 10 mg bid. Negativism, mutism, and withdrawal gradually improved. The patient maintained improvement and his BFCRS was 3. He did not require rehospitalization in the 2 years since discharge.

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Amantadine has NMDA receptor antagonist activity in addition to dopamine agonist activity. It is approved for use in Parkinson's disease and extrapyramidal disease. Its potential efficacy in catatonia may be due to blockade of hyperglutamatergic excitotoxicity in neurons. It is hypothesized that due to a pathologic process in the brain, excess glutamate is produced (2). Excess glutamate causes hyperexcitation of glutamate receptors, allowing calcium channels to stay open for prolonged periods of time. Excessive calcium influx causes free radical damage to the neuron, eventually progressing to neuronal death. We feel that amantadine and memantine improved catatonia for this patient with schizophrenia who did not respond to lorazepam.

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