Safe Use of Atypical Antipsychotics in a Patient With Postpartum Psychosis and a History of Seronegative Myasthenia Gravis

To the Editor: It has been established that antipsychotic medications have multiple receptor-binding properties that lead to challenges in their use in the treatment of patients with other medical comorbidities. One such interaction is an inhibitory effect on acetylcholine receptors. In vitro studies[1] have demonstrated that first-generation antipsychotics, such as chlorpromazine, have significant interactions at acetylcholine receptors that may exacerbate symptoms of patients with myasthenia gravis (MG). This potential interaction was realized in subsequent case reports[2,3] of patients diagnosed with seropositive MG who had worsening of their symptoms to the point of respiratory suppression once administered antipsychotics. There are also case reports[2] of antipsychotics unmasking MG in patients who lacked such a prior diagnosis. These findings raise concern for health care providers, as MG is thought to primarily affect nicotinic receptors, whereas activity of antipsychotics is thought to focus at muscarinic receptors. With increasing awareness of these risks, lists of "medications to avoid" in MG patients have been published,[4] which include almost the entire repertoire of psychotropics available for treating psychotic symptoms. Here, we report the first documented case of the safe management of an acutely psychotic patient who had a prior diagnosis of seronegative MG.

Case report. A woman in her thirties was admitted to our hospital 3 weeks postpartum for manic symptoms and systematized persecutory delusions. The patient's psychiatric history was remarkable for a brief depressive episode 5 years prior resolving with no treatment. Her family history was significant for depression in her mother and schizophrenia in her maternal grandfather. Her medical history was significant for seronegative MG diagnosed at age 30 years in the context of positive symptoms, negative antibody titers, thyroid studies and chest computed tomography, and significant improvement on a trial of pyridostigmine. She self-discontinued pyridostigmine after 30 months of treatment but continued neurology follow-up for symptoms of intermittent mild ocular MG. She chose to continue this plan of care throughout her pregnancy. The patient did not experience a worsening of her MG symptoms during the pregnancy or delivery, and the infant was born with no neonatal myasthenic symptoms.

At admission to the psychiatry unit, the patient's complete blood count, electrolytes, thyroid function tests, urinalysis, drug screen, vitamin B_{12} and folate levels, and physical examination were unremarkable. She was taking no medications and was breastfeeding. She was started on low-dose quetiapine extended release. The neurology team evaluated the patient and found no evidence of exacerbation of her MG. Repeat assessment of her antibody titers was also negative. On day 8, she refused an increase in her dose of quetiapine, complaining of excessive sedation, and was transitioned to olanzapine 10 mg daily on day 9. The patient's symptoms improved within 2 days, and she was discharged on day 11. At outpatient follow-up, the patient continued to be in remission from her manic symptoms on olanzapine and experienced no exacerbations of her MG or any other anticholinergic symptoms.

The severity of MG symptoms in patients without thymectomy is independent of serology, thus treatment of seronegative MG would be similar to seropositive cases.[4,5] However, there is no published literature demonstrating comparative sensitivity to antipsychotics in seropositive versus seronegative MG. Despite the anticholinergic properties of olanzapine and quetiapine,[6,7,8] we were able to treat our seronegative MG patient with antipsychotic medications in the postpartum period with no exacerbation of her MG. It should be noted that the patient had a mild case of MG with few symptoms and an unremarkable effect of pregnancy and postpartum state on her MG. These results cannot be generalized to more severe cases of MG, and further research is needed to determine the safety of antipsychotic treatment in such cases.

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