Myasthenic Crisis May Mimic Antipsychotic-Induced Extrapyramidal Syndromes

To the Editor: Although anticholinergic agents show highly selective muscarinic receptor-blockage, they may cause little, but clinically significant, blockade of acetylcholine at nicotinic receptor sites, which the antibodies of myasthenia gravis (MG) directly affect.[1] Gyawali and Rangedara have reported on a man with undiagnosed MG who developed a myasthenic crisis requiring intubation after treatment with the muscarinic antagonists oxybutynin and hyoscine.[2] We present a 26-year-old woman schizophrenia patient with coexisting, undiagnosed MG, who developed acute respiratory failure while being treating with biperiden, an anticholinergic medication.

Case Report

A 26-year-old single, jobless woman had had schizophrenia for 4 years, with persistent auditory hallucinations and systemized delusions. Initially, she received amisulpiride 200 mg–400 mg/day intermittently for 3 years. Six months before, her psychotic symptoms had become worse, and her medication was shifted to quetiapine 150 mg/day. General weakness, hoarseness, dysarthria, difficultly swallowing, and shortness of breath began 3 weeks after the quetiapine treatment. As antipsychotic-induced extrapyramidal syndromes (EPS) was suspected, quetiapine was discontinued. The EPS-like symptoms were improved after treatment with clozapine 12.5 mg/day and biperiden 2 mg/day. She was maintained on this regimen until her psychosis flared up again 4 months later. The clozapine was then titrated to 50 mg/day, and biperiden was increased to 4 mg/day. Ten days later, progressive dysphonia, dysphagia with persistent drooling, and ptosis were noted. She was sent to our emergency department, where vital signs showed a blood pressure of 113/80 mmHg, a pulse rate of 129 bpm, and a respiratory rate of 20/min. Fibroscopy was done, with the impression of vocal cord dyskinesia. We suspected clozapine-associated EPS and prescribed intramuscular injection of biperiden. Sudden onset of desaturation with hypercapnic hypoxic respiratory failure (arterial blood gas revealed respiratory acidosis, with pH: 6.957, p CO2: 148.1 mm Hg, p O2: 58.1 mm Hg, and oxygen saturation 58.1%) occurred 3 hours later. We performed emergent endotracheal tube insertion. Subsequent examinations showed 1) unremarkable chest film; 2) sinus tachycardia on ECG; 3) cardiac enzymes within normal range; and 4) brain, neck, and chest computer tomography revealed no abnormal organic lesions. Four days later, her respiratory pattern was improved, and the endotracheal tube was extubated. During this period, she continued to use clozapine 25 mg/day and biperiden 2 mg/day. However, dyspnea with respiratory failure recurred 10 days after the endotracheal tube was removed. Because MG was suspected, acetylcholine receptor antibody was checked and showed 0.66 nmoles/liter (reference range: <0.5 nmoles/liter). Electromyography also revealed significant decrement on the repetitive nerve stimulation test, and MG was diagnosed. She was treated with pyridostigmine and plasmapheresis and recovered uneventfully 2 weeks later.

Discussion

Except for biperiden, our patient had been prescribed quetiapine and clozapine. The two medications also pose a significant anticholinergic effect and could worse preexisting MG symptoms.[3] Since there are significant overlaps of symptoms between MG and EPS presentations,[4] it is important for physicians to make timely differential diagnosis for unexplained EPS while dealing with certain mentally ill patients being treated with antipsychotics.[5] This report also highlights the idea that physicians should consider MG in any patient with unexpected respiratory failure and should prescribe anticholinergics more carefully.

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