Aripiprazole-Associated Rhabdomyolysis in a Patient With Schizophrenia

To the Editor: Rhabdomyolysis is a potentially lethal syndrome owing to the lysis of muscle fibers, with release of potentially toxic cellular materials into the systemic circulation.[1] Aripiprazole is a recently developed sga with lower incidence of extrapyramidal side effects than placebo in controlled trials.[2] Here, we report a patient developing rhabdomyolysis 30 days after the start of aripiprazole therapy, 15 mg/day.

Case Report

A 31-year-old Taiwanese man with a history of schizophrenia had received risperidone and quetiapine during past outpatient records without adverse extrapyramidal reactions. Recently, he had received quetiapine 400 mg daily for 2 weeks, which was discontinued because of excessive somnolence; he was then switched to aripiprazole 15 mg daily. Within 1 month after initiating aripiprazole, he was found lying on the floor with fluctuating consciousness and muscle weakness. The patient was afebrile (36°c), with blood pressure of 113/68 mmHg, pulse of 120 bpm, and respiratory rate of 18 rpm. Neurological examination revealed intermittent disorientation, slurred and incoherent speech, fluctuating consciousness, and weakness of bilateral lower extremities. Laboratory findings included an elevated CK, peaking at 19,660 IU, and an elevated serum glutamate oxaloacetate transaminase, peaking at 238 IU/liter. His WBC count was 16,620mm^3, and a routine urine specimen showed presence of myoglobin. His toxicology screen was negative. NMS was not considered because of the lack of autonomic instability and fever. During the hospitalization, supportive therapies were instituted, with close monitoring and treatment. He was treated with high-volume intravenous solution replacement daily, which improved his consciousness. After 3 days, the serum CK level fell to 6,348 IU and continued to normalize through regular follow-up after discharge.

Discussion

Aripiprazoile exhibited a novel mechanism of action, combining partial agonist activity at dopamine-2 (D_2), dopamine-3 (D_3), and serotonin-1A (5-HT_{1A}) receptors, with antagonist activity at serotonin 2A (5-HT_{2A}) receptors.[3] The possible mechanism of rhabdomyolysis related to aripiprazole use was the effect of antagonist activity at 5-HT_{2A} receptors[4] that exist in adult skeletal muscle. The stimulation of the 5-HT_{2A} receptor caused a rapid stimulation of glucose uptake. It is possible that decreases in the density or blockade of this receptor, which would compromise the uptake of glucose, might lead to changes in the sarcolemma, which increases its permeability to CK. The drugs that produce this type of increase in serum CK activity share relatively more potent 5-HT_{2A} than dopamine D_2 receptor antagonism. The patient's rhabdomyolysis was finally resolved after discontinuation of aripiprazole. Because we could only find one case of rhabdomyolysis from aripiprazole treatment in monotherapy in the literature, we could only recommend being aware of the possibility of an individual susceptibility for rhabdomyolysis in every patient taking antipsychotic medication. However, further study should be continued to reinforce this finding.

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