

A Case of Serotonin Syndrome Due to Amantadine and Bupropion in Cerebral Infarction

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Serotonin syndrome is caused by an excessive increase in serotonergic activity in the central nervous system. It is a potentially life-threatening disease that characterized by mental status changes, autonomic overactivity, and neuromuscular abnormalities. Amantadine is an anti-viral agent as well as an anti-parkinsonism agent. It can increase serotonergic activity. bupropion, well-known its brand names wellbutrin, is a agent usually used as an antidepressant and smoking cessation aid. It is classified as norepinephrine-dopamine reuptake inhibitor. Although the pharmacological action of bupropion is not fully understood, it is thought that it may increase serotonin activity. However, serotonin syndrome related to amantadine and bupropion have rarely been reported. We report a case of 49-year-old stroke patient who developed serotonin syndrome due to amantadine and bupropion. A 49-year-old female patient was admitted to the department of physical medicine and rehabilitation for stroke rehabilitation. She has infarction in both cerebellum, left lateral thalamus & left midbrain. She took amantadine for 7 days to control ataxia symptoms and took bupropion for 14 days to control depression mood. She complained of auditory hallucination and visual hallucination. On the following day, the rigidity and tremor of both upper and lower limbs were worsened. Mental status became drowsy and abnormal behavior was observed. Symptoms were more aggravated and abnormal behavior was so severe that we needed a body restraint. There were unremarkable findings in brain magnetic resonance imaging and computed tomography. Symptoms were aggravated. Body temperature rose to 38 °C. Laboratory test revealed lactate dehydrogenase (LD) 737 U/L (normal up to 271 U/L), creatinine kinase (CK) 14339 U/L (normal up to 145 U/L). The clinical feature and laboratory data led to a diagnosis of serotonin syndrome with neuroleptic malignant syndrome. She admitted to the intensive care unit and stopped all medications except for aspirin. Dantrolene and lorazepam were used to control the symptoms. Two weeks after discontinuation of the drug, the rigidity and tremor of both upper and lower limbs improved and no auditory hallucinations or visual hallucinations were observed. In laboratory data, LD 167 U/L and CK 61 U/L returned to normal values. This is a rare case of serotonin syndrome due to amantadine and bupropion. Taking amantadine and bupropion seems to be synergistic in increasing serotonergic activity.