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Acute cholinergic syndrome in a patient with Alzheimer's disease taking the prescribed dose of galantamine

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Objective: We report a case of acute cholinergic syndrome caused by prescribed dose of galantamine.

Case report: An 87-year-old man with Alzheimer's disease taking 24 mg of galantamine (a 12-mg tablet twice a day at 8 a.m. and 8 p.m.) was transported to the Emergency Center and Poison Center when he was found to be unresponsive by his family. On admission, at about 8 a.m., he was drowsy with a consciousness level of E3V4M6 on the Glasgow Coma Scale and had miosis (diameters of both pupils, 1.5 mm), sinus bradycardia (54 beats/min), excessive salivation, nausea, and enhanced bowel sounds. Initial blood tests were unremarkable. Computed tomography of the brain revealed moderate brain atrophy. A provisional diagnosis of acute cholinergic syndrome caused by galantamine was made. He was treated with fluid infusion and recovered within 7 hours of hospital admission. Drug analysis using liquid chromatography–mass spectrometry revealed that the calculated maximum serum galantamine concentration during a dose interval at steady state (75.1 ng/mL) was not elevated and that the calculated elimination half-life (9.6 hours) was not prolonged. This suggests that acute cholinergic syndrome developed not due to poisoning, but as an adverse reaction.

Conclusion: Physicians should consider the possibility that galantamine taken at the prescribed dose can cause acute cholinergic syndrome.