[ID-P#052] A Case Report of Torsades de Pointes after Sitagliptin Overdose

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Introduction: Sitagliptin inhibits dipeptidyl peptidase-4 (DPP-4) resulting in inactivation of glucagon-like peptide-1 (GLP-1) and increasing of insulin release. Adverse effects have been reported including gastrointestinal disturbance, renal impairment, and hypoglycemia when combined with other antiglycemics. Severe toxicities are rarely reported.

Case report: A 68-year-old Thai female presented due to unconsciousness 30 minutes before arrival. She reportedly took 119 tablets of 100 mg- sitagliptin 6 hours prior. Initial vital signs revealed blood pressure of 55/33mmHg, heart rate of 82 per minutes, respiratory rate of 30 per minutes, oxygen saturation of 85% (room air) and body temperature of 36.2°C. Capillary glucose was 179 mg/dL. After intubation and initial fluid resuscitation, norepinephrine and dopamine were needed to maintain blood pressure. ECG revealed sinus rhythm with QRS duration of 103 milliseconds and QT interval of 466 milliseconds. Initial blood chemistry results were normal. Eighteen hours after ingestion, she was awake with stable hemodynamics and heart rate within 60 to 70 per minute. Thus, inotropic drugs were tapered. Subsequent investigation revealed hyperglycemia with ketonemia, prompting initiation of intravenous insulin infusion due to suspected diabetic ketoacidosis. Four hours later, ECG monitoring detected transient ventricular tachycardia (Torsade de Pointes; TdP) with a QT interval of 600 milliseconds. Serum potassium and magnesium concentrations were 3.3 mEq/L and 1.5 mg/dL, respectively. She underwent overdrive transcutaneous pacing for 12 hours. All inotropic medications and mechanical ventilation were discontinued by day 2. Analysis of the initial serum sample using liquid chromatography-mass spectrometry revealed a sitagliptin concentration of 113.54 mg/L. This patient exhibited multiple risk factors for TdP, including bradycardia, hypokalemia, and hypomagnesemia. Non-clinically significant QT prolongations were observed with doses eight times higher than the therapeutic dose of sitagliptin.

Conclusion: We presented a case of sitagliptin overdose with significant hypotension and delayed TdP, a rare occurrence.