A Case of Sitagliptin-Induced Mild Acute Pancreatitis

Sir,

Acute pancreatitis (AP) is characterised by inflammatory destruction of the gland due to early activation of the pancreatic proteolytic enzymes. Drug-induced AP accounts for only 0.1-2 % of AP.[1] One of these drugs is dipeptidyl peptidase-4 inhibitor (DPP-4i). Association between AP and Sitagliptin, a DPP-4i, was initially described in a transgenic rat model.[2] We aim to present a case of AP in a diabetic elderly, which was likely associated with Sitagliptin treatment.

A 73-year diabetic woman with abdominal pain, nausea and vomiting presented to our clinic. Her pain was located mainly in the epigastrium, radiating to back, relieving by leaning forward, exacerbated by lying back and lasting for last 4 hours. No previous abdominal pain history was noted. She had type 2 diabetes mellitus, hypertension and ischemic heart disease for 8-10 years. History was not relevant to previous pancreatitis episodes, alcohol abuse, abdominal trauma, recent insect bite, hyperlipidemia or hypercalcemia. She was on Candesartan 12.5 mg, Nebivolol 5 mg, Sitagliptin 100 mg and insulin treatment. Sitagliptin was added to her anti-diabetic treatment 18 months ago. Vital signs and entire physical examination was normal except epigastric tenderness. Laboratory tests revealed elevated amylase >3010 U/L (reference range: 20-160 U/L) and lipase >1200U/L (reference range: 22-51 U/L). Abdominal magnetic resonance imaging (MRI) revealed enlargement of pancreatic head, and fluid collection around pancreatic head, indicating AP. The Bedside Index of Severty in AP (BISAP) score of the patient was 1, so, the case was classified as mild AP and discharged on 8th day of treatment without any complication.

Sitagliptin is associated with mild but statistically significant elevations in amylase and lipase levels.[3] In a study of transgenic mice, it has been shown that Sitagliptin is associated with the development of focal necrotising AP and fibrotic exocrine pancreatic changes.[2]

In TECOS trial, 23 out of 7,332 participants receiving Sitagliptin, and 12 out of the 7,339 in placebo group were reported to develop AP.[4] Of 23 cases, 4 were severe pancreatitis cases in Sitagliptin receiving group.[4] The rate of AP is increased as the Sitagliptin treatment is prolonged over 9 months.[4] This case was receiving Sitagliptin for the last 18 months.

We think that, although rare, patients on Sitagliptin may develop AP. Therefore, physicians should not overlook the possibility of Sitagliptin-induced AP in patients presenting with typical symptoms, and should pay particular attention to subjects received Sitagliptin for more than one year.

REFERENCES

1. Balani AR, Grendell JH. Drug-induced pancreatitis. *Drug Safety* 2008; **31**:823-37.
2. Matveyenko AV, Dry S, Cox HI, Moshtaghian A, Gurlo T, Galasso R, *et al*. Beneficial endocrine but adverse exocrine effects of sitagliptin in the human islet amyloid polypeptide transgenic rat model of type 2 diabetes. *Diabetes* 2009; **58**: 1604-15.
3. Lando H, Alattar M, Dua A. Elevated amylase and lipase levels in patients using glucagonlike peptide-1 receptor agonists or dipeptidyl-peptidase-4 inhibitors in the outpatient setting. *Endocr Pract* 2012; **18**:472-7.
4. Buse JB, Bethel MA, Green JB, Stevens SR, Lokhnygina Y, Aschner P, *et al*. Pancreatic safety of sitagliptin in the TECOS study. *Diabetes Care* 2017; **40**:164-70.

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