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BACLOFEN-INDUCED PANCREATITIS

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ABSTRACT

Acute pancreatitis is an inflammatory condition of the pancreas that can result from various aetiologies, one of them being drug-induced pancreatitis, a relatively rare cause. Drug-induced pancreatitis should be considered in patients presenting with epigastric pain, elevated pancreatic enzymes, and imaging findings consistent with acute pancreatitis, in the absence of any common precipitants such as alcohol, gallstones, trauma. We report a case of acute pancreatitis following the initiation of baclofen therapy, with no other identifiable risk factors. A probable drug adverse reaction was established through the Naranjo Adverse Drug Reaction Probability Scale. This case highlights the need for physicians to consider baclofen as a potential cause of acute pancreatitis.

KEYWORDS

Acute pancreatitis, baclofen, drug-induced pancreatitis, Naranjo score

LEARNING POINTS

- Given the patient's presentation following baclofen initiation and absence of other identifiable causes, this case suggests a probable association between baclofen and acute pancreatitis.
- Physicians should recognize the potential of baclofen to cause this inflammation when prescribing it and consider it as a differential diagnosis in cases of unexplained acute pancreatitis.

INTRODUCTION

Acute pancreatitis is a condition characterized by inflammation of the pancreas. Its typical presentation is that of epigastric pain, possibly radiating to the back, associated with an elevation of pancreatic enzymes (amylase and lipase)[1-3]. The most common causes of acute pancreatitis include gallstones, chronic alcohol consumption, hypertriglyceridemia, and pancreatic duct obstruction[4]. Other less frequent causes include infectious aetiologies, trauma, and drug-induced pancreatitis[4,5]. Drug-induced pancreatitis is a rare but significant cause of acute pancreatitis and can be caused by various medications[6,7]. Rarely, muscle relaxants such as tizanidine have been implicated as causes of acute pancreatitis[1].

Baclofen is a gamma-aminobutyric acid (GABA) receptor agonist primarily used as a muscle relaxant when treating spasticity associated with neurological conditions[2]. Less commonly, baclofen is prescribed for the management of refractory gastroesophageal reflux disease (GERD)[8]. Baclofen's potential to cause acute pancreatitis is poorly

understood and very few cases have been recognized or reported in the medical literature. This case report aims to shed light on this rare but under recognized complication of baclofen and contribute to the growing body of literature on drug-induced pancreatitis.

CASE DESCRIPTION

We report the case of a 62-year-old male with a history of hypertension, dyslipidaemia, chronic kidney disease (CKD), benign prostatic hyperplasia, functional GERD, and a cerebrovascular accident 2 years previously, who presented for abdominal pain of same day duration. The night before presentation the patient started experiencing abdominal pain and nausea, associated with one episode of non-bloody vomiting, with spontaneous resolution. No other symptoms such as diarrhoea, constipation, unintentional weight loss or fatigue were noted. The patient had a history of prior cholecystectomy in May 2024. but no history of major trauma or other significant surgical interventions. He was a non-smoker with no history of alcohol consumption. No known food or drug allergies. The patient's chronic conditions were well managed with medication, except for functional GERD, which had failed traditional treatment with lifestyle modifications and proton-pump inhibitor therapy. This led to the initiation of baclofen 10 mg 3 times daily, 2 days prior, in an attempt for symptomatic relief, which was the only notable recent change in the patient's medications. Physical examination of the patient was unremarkable except for abdominal tenderness on palpation, most notably in the epigastric region, and residual left upper and lower limb weakness post-stroke. Pertinent laboratory findings on admission revealed an elevated lipase level 9783 U/l (normal range: 0-160 U/l), total bilirubin 3.54 mg/dl (normal range: 0.1-1.0 mg/dl), with a direct bilirubin level of 3.32 mg/dl (normal range: 0.0-0.3 mg/dl), serum glutamic pyruvic transaminase (SGPT) 267 U/l (normal range: 10-40 U/l), serum glutamic-oxaloacetic transaminase (SGOT) 691 U/l, (normal range: 12-38 U/l) and gamma-glutamyl transferase (GGT) 99 U/l (normal range: 5-40 U/l). Elevated levels of creatinine 1.8 mg/dl (normal range: 0.6-1.2 mg/dl) and blood urea nitrogen (BUN) 51 mg/dl (normal range 7-18 mg/dl) were also noted, to be expected in light of past medical history of CKD. A computed tomography (CT) scan done on admission showed mild peripancreatic fluid extravasation and fat stranding consistent with the diagnosis of acute interstitial pancreatitis.

DISCUSSION

Drug-induced pancreatitis (DIP) is a recognized but uncommon cause of acute pancreatitis, accounting for approximately 0.1–2% of cases[3]. The pathogenesis of DIP is multifactorial and not completely understood or accounted for. Proposed mechanisms include direct cytotoxic and inflammatory effects on pancreatic acinar cells, immune-mediated hypersensitivity reactions, metabolic causes such as hypertriglyceridemia or hypercalcemia, vasoconstriction or thrombosis leading to pancreatic ischemia, and increased ductal pressures due to pancreatic duct spasm or constriction[9].

The diagnosis of acute pancreatitis was successfully established in this patient, as all three diagnostic criteria were met: presence of epigastric pain, pancreatic enzyme levels exceeding three times the upper limit of normal (lipase level of 9783 U/l with a normal range of 0-160 U/l), and imaging findings on CT scan demonstrating evidence of acute pancreatitis (mild peripancreatic fluid extravasation and fat stranding). Our patient's case fulfils the definition unequivocally, with the presence of at least two of these criteria being sufficient for diagnosis.

The presentation of this patient, following the initiation of baclofen and in the absence of other risk factors, prompted consideration of baclofen as a potential cause of acute pancreatitis. The Naranjo Algorithm is a widely used assessment tool to evaluate the likelihood that an adverse event is related to drug therapy. Scores range from 0 (doubtful), 5–8 (probable adverse drug reaction) to ≥9 (definite drug reaction)[5].

Applying the Naranjo Algorithm to this case:

1. *Did the adverse event appear after the suspected drug was administered?* Yes (+2)

The patient started baclofen therapy at a dosage of 10 mg 3 times daily 2 weeks prior to presentation.

2. *Did the adverse reaction improve when the drug was discontinued?* Yes (+1)

Upon admission, baclofen was discontinued from the patient's treatment regimen, followed by subsequent spontaneous resolution of acute pancreatitis

3. *Are there alternative causes that could have caused the reaction?* No (+2)

The patient had no significant change in lifestyle, behaviour, or concurrent medication, apart from initiation of baclofen within the preceding 2 weeks.

4. *Was the drug detected in any body fluid in toxic concentrations?* Yes (+1)

Given the patient's history of CKD, a serum baclofen level was ordered, which was obtained and found to be 1.4 mg/l, within the toxic range (1.1-3.5 mg/l).

5. *Was the adverse event confirmed by any objective evidence?* Yes (+1)

An elevated pancreatic enzyme (lipase) level, in conjunction with CT findings consistent with acute pancreatitis, provide objective evidence supporting the adverse event.

A score of 7 classifies the adverse drug reaction of baclofen as "probable", although the underlying mechanism remains unclear. However, the Naranjo score has inherent limitations, as certain criteria may not be equally applicable to all cases, particularly those that do not align exactly with its predefined parameters[7]. Therefore, its application should be interpreted in the context of the clinical presentation, while considering the temporal association between drug exposure and symptom onset, as well as symptom resolution upon drug discontinuation.

CONCLUSION

Drug-induced pancreatitis is a rare condition, particularly when linked to medications not previously associated with pancreatic inflammation. Given the patient's presentation following baclofen initiation and absence of other identifiable causes, this case suggests a probable association between baclofen and acute pancreatitis. Physicians should recognize the potential of baclofen in causing this inflammation when prescribing it and consider it as a differential diagnosis in cases of unexplained acute pancreatitis. However, direct causality remains uncertain, and further research is required to elucidate the potential relationship between baclofen and pancreatic inflammation.

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