


Levetirasetam induced acute pancreatitis: an uncommon case report

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ABSTRACT

Acute pancreatitis is an acute inflammatory event involving the pancreas and causes significant mortality and morbidity. The most common causes are gastrointestinal stones and alcohol abuse, but well-known drugs used in daily practice can also cause acute pancreatitis. In this rare case report, we aimed to present a case of levetiracetam-associated acute pancreatitis.

Keywords: Levetiracetam, acute pancreatitis, adverse effect

INTRODUCTION

Acute pancreatitis is an acute inflammatory disease of the pancreas that requires urgent intervention. It is one of the most common gastrointestinal conditions requiring hospitalization worldwide.¹ Since it is a fatal condition, it is still an important subject of significant scientific studies. The etiology includes biliary causes, alcohol consumption, hypertriglyceridemia, ERCP procedure, genetic causes, drugs, autoimmune causes, hypercalcemia, infections/toxins, anatomical or physiological anomalies.^{1,2} Determining the etiologic cause of acute pancreatitis is very important in terms of appropriate treatment and follow-up. There is no globally accepted curative treatment for acute pancreatitis and experimental and clinical studies are ongoing.³⁻⁷ Preventing recurrent episodes of acute pancreatitis is important because these episodes can lead to chronic pancreatitis in the future.^{8,9}

Levetiracetam is a drug used in the treatment of epilepsy and is used for focal, myoclonic or tonic-clonic seizures.¹⁰ In the literature, very few cases of acute pancreatitis while taking levetiracetam have been reported.¹¹ In this rare case report, we aimed to present a case of levetiracetam-associated acute pancreatitis.

CASE REPORT

A 45-year-old male patient was admitted to the emergency department of our hospital with the complaint of girdle-like abdominal pain for several days. It was learned that he had been diagnosed with hypertension for 10 years, he was taking amlodipine 1x10 mg tablet and his blood pressure values were under control with this treatment. It was noted that he had a cerebrovascular event three weeks

before presentation to the emergency department and levetiracetam 3x500 mg tablet treatment was started. There was no history of alcohol or smoking. Family history was negative except for hypertension. On physical examination, there was diffuse abdominal tenderness, no defense and rebound. Cardiac and pulmonary examinations were normal. Arterial blood pressure was 140/90 mmHg and pulse rate was 100 beats/minute. Laboratory tests revealed amylase: 528 U/L, lipase: 367 U/L, AST: 24 U/L, ALT: 9 U/L, ALP: 86 U/L, GGT: 13 U/L, total bilirubin: 0.3 mg/dl, WBC: $11 \times 10^3/\text{mm}^3$. Triglyceride, lactate dehydrogenase and serum calcium levels were within normal limits. Upper abdominal ultrasonography revealed normal liver size and smooth contours. No dilatation was observed in the intrahepatic bile ducts. Gallbladder dimensions, wall thickness (2.6 mm) and luminal echo were normal. Choledochal diameter was 4.8 mm. Pancreas and midline structures could not be clearly evaluated due to gas distension. Abdominal CT showed contamination of the peripencreatic fat planes. The patient was admitted to our internal medicine service with a diagnosis of acute pancreatitis and treatment was started. Etiologic causes were evaluated in a detailed manner. Biliary causes, alcohol use, hypertriglyceridemia, hypercalcemia, infectious causes, drug use, genetic causes and toxins were investigated. Levetiracetam, which was started three weeks ago, was thought to cause acute pancreatitis based on rare case reports in the literature.¹¹ The patient was consulted to neurology and levetiracetam was stopped and carbamazepine was started. Oral nutrition was stopped and iv hydration and analgesia were provided. On the third day of treatment, the patient's pain decreased, amylase and lipase levels decreased, and oral intake was



gradually restarted. He was discharged after one week of ward follow-up. The patient was followed up for six months under carbamazepine treatment and he did not develop acute pancreatitis during the follow-up period.

DISCUSSION

Acute pancreatitis is an important inflammatory condition of the pancreas that is life-threatening and can cause significant morbidity. Although the most common cause is gallstone disease and alcohol abuse, various drugs and toxins can also cause acute pancreatitis.^{1,2} The most important step in cases of drug-induced acute pancreatitis is to exclude other common causes and to consider the possibility of drug- or toxin-induced pancreatitis. The incidence of drug-induced pancreatitis is less than 5% and the prognosis is generally good with low mortality.^{12,13} In this rare case report, we utilized Naranjo adverse drug reaction probability scale for acute pancreatitis probability percent and a score of 5 was reached.¹⁴ Thus we suggest that a probable association between levetiracetam and this pancreatic situation.

In recent years, it has been reported in the literature that liver enzyme elevation and rarely acute pancreatitis have developed more frequently with levetiracetam use. It has been suggested that these side effects may be dose-dependent or may be caused by idiosyncratic effects. However, it is not clearly known how and why this drug causes acute pancreatitis.⁹ Nevertheless, in the presence of common causes of acute pancreatitis, it should be kept in mind that levetiracetam use may be a reinforcing reason for the development of acute pancreatitis.

CONCLUSION

Today, with the development of imaging and laboratory techniques, acute pancreatitis and other pancreatic pathologies can be detected more easily and increasingly. In cases of acute pancreatitis in which all other causes are excluded, drug- and toxin-related acute pancreatitis should definitely be considered. Although levetiracetam is not considered among drugs that frequently cause acute pancreatitis, it should be remembered that it may cause acute pancreatitis in rare cases.

ETHICAL DECLARATIONS

Informed Consent: All patients signed and free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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