

## Introduction

Drug-induced pancreatitis accounts for 0.1%-2% of total pancreatitis cases. Although angiotensin-converting enzyme inhibitors (ACEi) are considered probable causes of pancreatitis, Enalapril, a Class Ia drug, has the strongest association with ACEi-induced acute pancreatitis. The newer ACEi are more atypical causes of pancreatitis. Benazepril is a Class IV drug with a rare association to cause ACEi-induced acute pancreatitis. Our literature review shows a limited case report that describes the association between Benazepril and acute pancreatitis, where the patient developed acute pancreatitis one week after the initiation of Benazepril. We report a case of Benazepril-induced pancreatitis in a patient who had been on this medication for nine years.

## Case Presentation

An 83-year-old man with a history of cholecystitis status post cholecystectomy two years prior, hypertriglyceridemia well controlled on fenofibrate, presented to the emergency department complaining of severe epigastric pain radiating to the back, nausea, and vomiting. He had been on Benazepril 10 mg daily for nine years, initially prescribed on 1/13/2014. The patient denied a smoking history and alcohol use, trauma, weight loss, or a family history of pancreatic disease.

On initial presentation, Body Mass Index 24 kg/m<sup>2</sup>, temperature 36.6 DegC, heart rate 75 bpm, respiratory rate 20 br/min, and blood pressure 170/88 mmHg. He was complaining of 8/10 left abdominal pain. On physical exam, the left upper quadrant was mildly tender without peritoneal signs. CMP and lipid panel were within normal limits; lipase 517 IU/L; alcohol level and UDS negative; WBC 14.5x10<sup>3</sup>/mcL with 80% neutrophils; UA negative. Abdominal computed tomography showed an edematous head, uncinate process, body, and tail of the pancreas with peripancreatic fat stranding, suggestive of acute pancreatitis, and a surgically removed gallbladder. Right upper quadrant abdominal ultrasound showed no acute findings. The patient was placed on bowel rest, pain medication, and intravenous hydration. His symptoms improved over the next four days. He began to tolerate food and was discharged. After discontinuation of Benazepril, the patient was started on Losartan 25 mg daily. Based on the most recent office visit, he has been asymptomatic since discharge.

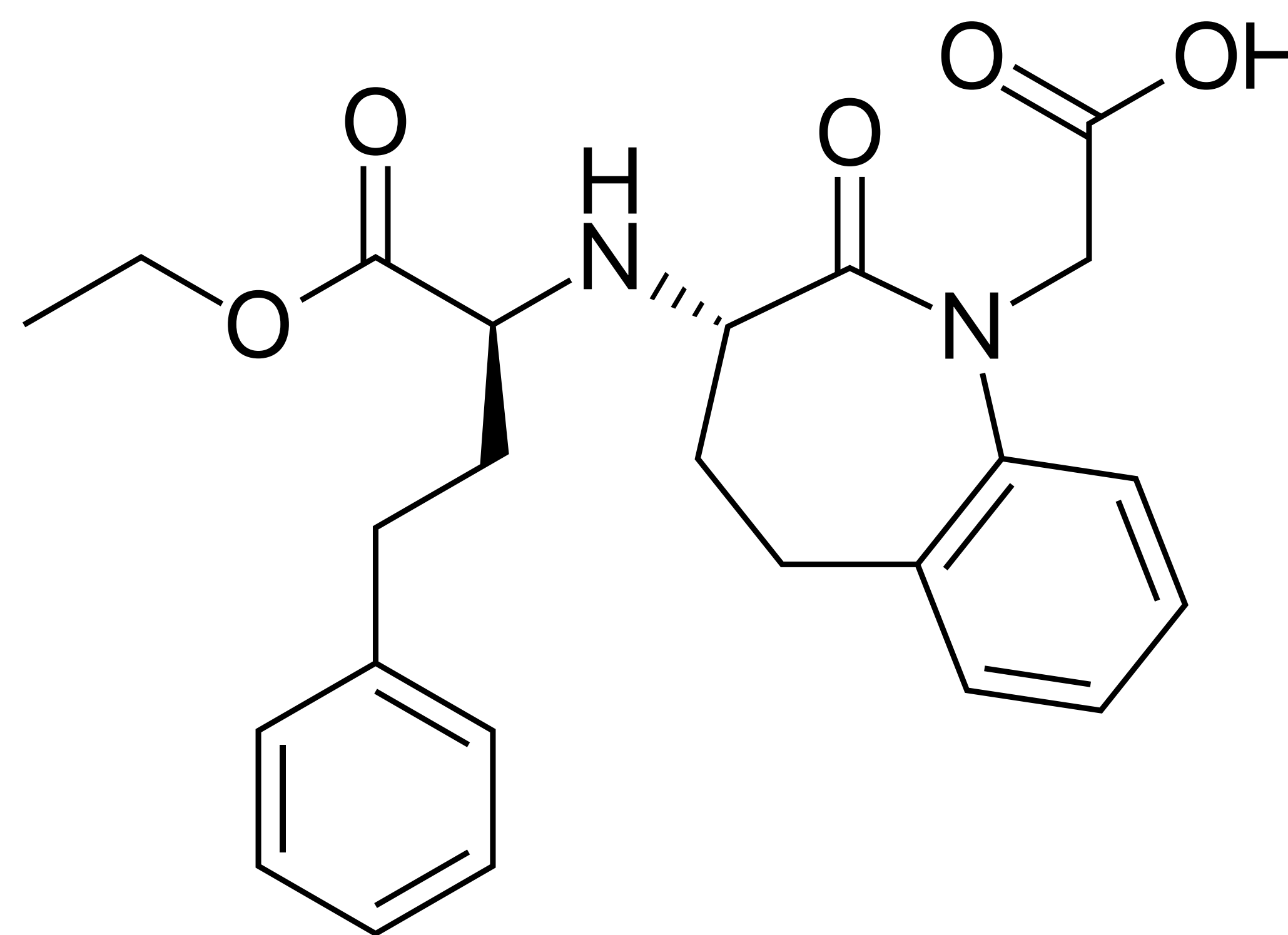


Fig 1. Chemical structure of benazepril



Fig 2. CT scan findings suggestive of pancreatitis

## Discussion

Drug-induced pancreatitis accounts for a minor incidence (0.1%-2%) among all pancreatitis cases, with older angiotensin-converting enzyme inhibitors (ACEi), notably Enalapril, showing a significant association. This report details an 83-year-old male who developed acute pancreatitis after nine years on Benazepril, with symptom resolution upon the drug's discontinuation and substitution with Losartan, substantiating Benazepril's role in this adverse event. The mechanism posited involves ACE inhibitor-induced bradykinin accumulation, leading to localized pancreatic duct angioedema and subsequent inflammatory responses, highlighting the rarity of Benazepril in acute pancreatitis cases.

## Conclusion

This case adds to the sparse body of literature concerning acute pancreatitis triggered by Benazepril, underscoring the possibility of this uncommon adverse reaction even following extended administration of the medication. Healthcare professionals ought to remain vigilant regarding this risk when overseeing patients on ACE inhibitors, particularly when more prevalent etiologies of pancreatitis have been ruled out. Considering the strong temporal correlation between the cessation of Benazepril and the alleviation of symptoms, it is reasonable to deduce that Benazepril may have been the precipitating factor for this patient's pancreatitis. Additional research and case studies are warranted to enhance the comprehension of the mechanisms and risk factors related to ACEi-induced pancreatitis, particularly concerning novel agents such as Benazepril.

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