



# Blame it on the Drug: A Rare Case of Doxycycline Induced Pancreatitis

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## Background

- Doxycycline is a broad-spectrum bacteriostatic antibiotic that belongs to the tetracycline class. It is a relatively safe medication with reported side effects being gastrointestinal symptoms, bone and teeth discoloration, photosensitivity, and renal toxicity.
- Acute pancreatitis (AP) is an uncommon adverse effect with only a few reported cases in literature. The World Health Organization reports 525 drugs that are linked to AP with a direct causality in 31 drugs.
- Despite tetracyclines being labeled as a probable causative agent of drug-induced pancreatitis (DIP), doxycycline has been rarely implicated.

## Case Presentation

- A 65-year-old female with a past medical history of acute pancreatitis, and recurrent community acquired pneumonia (CAP), presented with nausea and epigastric pain radiating to her back for the past two days.
- She was recently started on doxycycline three days ago for the treatment of CAP. On further questioning, her symptoms were similar to her previous episode of AP which occurred after starting doxycycline. The patient denied smoking, alcohol, or endoscopic retrograde cholangiograms.
- On arrival, she was febrile and tachycardic. Physical exam was significant for epigastric tenderness. Labs were notable for a leukocytosis of 33,900, lipase of 3431 IU/L with normal calcium levels and liver enzymes. Lipid panel was also unremarkable. A CT of the abdomen and pelvis revealed peripancreatic fluid and fat stranding consistent with AP (Fig 1).
- A right upper quadrant ultrasound did not reveal any gallstones or biliary distention (Fig 2). She was started on aggressive intravenous fluids and pain control.
- Doxycycline was also stopped and her lipase trended down to 573 IU/L on day 2 and 530 IU/L on day 3 (Table 1).
- She reported symptomatic relief and was discharged home in improving condition.

## Results



• Fig1: Contrast tomography (CT) of the abdomen and pelvis with contrast showing peripancreatic fluid and fat stranding consistent with acute pancreatitis.



Fig 2: Right upper quadrant ultrasound revealing an unremarkable appearing gallbladder with no evidence of gallstones or wall thickening.

	Day 1	Day 2	Day 3	Reference range [units/L]
Lipase	3283	573	530	73-393

Table 1: Lipase downtrend after discontinuing the doxycycline on day 1 to day 3 of hospitalization.

## Discussion

- DIP is a rare phenomenon with an estimated overall incidence rate of less than 2% of all AP cases.
- It is challenging to diagnose due to the lack of specific clinical symptoms. It is diagnosed by excluding other common causes of pancreatitis, resolution with discontinuation of the drug, and reappearance of symptoms with the same drug as seen in the case above.
- Our patient scored 8 on the Naranjo Adverse Drug Reaction meaning that there was a “probable” adverse reaction to doxycycline.
- Doxycycline is a commonly prescribed antibiotic and it is crucial to report these cases for early identification and cessation in the treatment of AP.

## Conclusion

- Doxycycline is a commonly prescribed antibiotic and in rare instances it can cause DIP as seen in the case above. Clinicians should be aware of this potential adverse effect and should maintain a high degree of suspicion in patients who recently received doxycycline therapy and are presenting with features suggestive of pancreatitis.
- DIP is a diagnosis of exclusion with alcohol, gallstones, hypertriglyceridemia and underlying electrolyte abnormalities being ruled out first as possible etiologies of the patient's pancreatitis.
- Management constitutes early identification and cessation of the offending agent with supportive therapy with resolution of symptoms.

## References

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