


Research Article

A Rare Case of ACEi-associated Angioedema of the Small Bowel

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Abstract

A middle-aged female presented with abdominal pain, vomiting, and watery non-bloody diarrhea shortly after her lisinopril dose was increased. Extensive workup did not reveal a definite pathology however CT of the abdomen showed bowel wall thickening of the proximal jejunum. Her lisinopril was held at the start of the admission due to an acute kidney injury and hypotension. A colonoscopy was done and biopsies revealed increased intraepithelial lymphocytes at every site which is characteristic of medication induced enteropathy. She was instructed to not restart lisinopril and symptoms completely resolved. She was diagnosed with ACEi-angioedema of small bowel.

Keywords: Angioedema; Angiotensin converting enzyme inhibitors; ACEi associated angioedema; Small bowel angioedema

Introduction

ACEi-angioedema is a well-documented adverse effect with a clearly defined pathophysiological pathway. Angiotensin converting enzyme (ACE) degrades the vasodilators bradykinin and substance P. By inhibiting ACE, both bradykinin and substance P cannot be degraded which leads to plasma extravasation into the submucosal tissue resulting in angioedema. This form of angioedema most commonly affects the face and neck. ACEi-angioedema of the gastrointestinal tract is a particularly rare manifestation with non-specific symptoms and radiographical findings.

Case Presentation

A 56-year-old female with a past medical history of hypertension (HTN), post-traumatic stress disorder (PTSD), and depression presented to the emergency department (ED) with 4 weeks of cramping lower abdominal pain, nausea, vomiting, and watery non-bloody diarrhea. Computed tomography (CT) of the abdomen and pelvis showed bowel wall thickening of the proximal jejunum. A GI PCR and Clostridium difficile (C. diff) toxin PCR were both negative. Gastroenterology was consulted and at that time the differential diagnosis included irritable bowel syndrome with diarrhea (IBS-D), microscopic colitis, functional diarrhea, viral gastroenteritis, and malabsorption. Her symptoms improved but did not resolve and she was discharged after a 2-day hospitalization with plans for outpatient colonoscopy and enteroscopy.

She presented back to the ED 2 weeks later with recurrence of these same symptoms. She was hypotensive and had an acute kidney injury (AKI). She was fluid resuscitated and started on ceftriaxone and metronidazole to empirically cover an infectious bacterial colitis. On this admission her lisinopril was held due to the AKI and hypotension. On physical exam

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Citation: BMichael Ladna, Vanessa Rodriguez, Naveen Chaudhry, Angela Pham. A Rare Case of ACEi-associated Angioedema of the Small Bowel. Journal of Surgery and Research. 6 (2023): 100-103.

Received: February 06, 2023

Accepted: February 13, 2023

Published: March 22, 2023

Our patient had an increase in the dose of lisinopril shortly prior to presentation which likely triggered the angioedema. Given the widespread use of ACEi in conjunction with non-specific symptoms and radiographic findings, ACEi-AE of the bowel may be an under-recognized and under-diagnosed. Even biopsy findings of increased intraepithelial lymphocytes lack specificity since these can also be idiopathic in etiology. A more granular review of radiology, careful attention to medication history and dosage changes, and trial of cessation of ACEi should be considered in patients with idiopathic abdominal pain. Confirmation of the diagnosis requires cessation of the ACEi and close follow-up to monitor for a response in symptoms.

Ethical Approval and Consent to participate

Not applicable

Consent for publication

Informed consent was obtained from the patient for publication of this case report and any accompanying images.

Conflicts of interest

None

Declaration of funding

None

Acknowledgments

None

Author contributions

Case report was chiefly written by Michael Ladna, with contributions and editing by Naveen Chaudhry, Vanessa Rodriguez, and Angela Pham

Abbreviation List

ACE	Angiotensin-converting enzyme inhibitor
ACEi	Angiotensin-converting enzyme inhibitors
ACEi-AE angioedema	Angiotensin-converting enzyme inhibitors angioedema
AKI	Acute Kidney Injury
ARB	Angiotensin receptor blockers
C. Diff	Clostridium Difficile
DPP-IV	dipeptidyl peptidase IV
ED	Emergency Department
HTN	hypertension
IBS	Irritable bowel syndrome
IBS-D	irritable bowel syndrome with diarrhea

IBD	Inflammatory bowel disease
NSAIDs	Non-steroidal anti-inflammatory drugs
PTSD	Post-traumatic stress disorder
PCR	polymerase chain reaction
RR	Relative Ricks
SSRI	selective serotonin receptor inhibitors

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