ISCHEMIC COLITIS IN IRRITABLE BOWEL SYNDROME

Farhan Ali DO, Edwin Golikov DO, Cassandra M. Steimle DO, Erik Raborn DO, Andrew Kelts DO Brittney Winton DO, Jennifer Jeng DO, Gary Valvano DO, Michael Kochik DO, Mohammad Raza MD, Dayakar Reddy MD, Bruno Mazza MD

Arnot Ogden Medical Center, Department of Gastroenterology

Elmira, New York

INTRODUCTION

Studies have demonstrated an association between ischemic colitis and irritable bowel syndrome (both constipation and diarrheal subtypes). Though the exact pathophysiology is not fully understood, it is clear that there is an increased relative risk in those patients with IBS. This is in part thought to be due to serotonin modulating medications that patients with IBS are placed on, namely 5HT3 and 5HT4 antagonists.

CASE DESCRIPTION

A 54-year-old female with a past medical history of polymyalgia rheumatica, obesity, migraines and constipation predominant-irritable bowel syndrome, who presented to the hospital with a chief complaint of lower abdominal pain and bright red blood per rectum. The patient states 15 minutes after she ate dinner, she began to have two episodes of non-bloody, non-bilious emesis. She continued to have

She described her abdominal pain as sharp, and burning in quality, It remained localized to the lower abdomen. The patient then went to go use the restroom and had what she describes as pellet stools akin to Bristol type 1.

This continued on throughout the evening until roughly midnight. By midnight she began to notice bright red blood per rectum upon attempted bowel movement. Her stool at this point became loose in caliber asper the patient, non-melenic, no dark or maroon-colored stool. The patient stated she had a total of four episodes of bright red blood per rectum between midnight and 2:00 a.m.

While in the emergency department, she complained of dry heaves and continued abdominal pain, which seemed to improve with morphine. She was also started on IV fluids, antiemetic therapy and given an empiric dose of Zosyn. A CT scan was performed which showed circumferential wall thickening with severe edema involving the entirety of the descending colon without pneumatosis intestinalis, free intraperitoneal air or abscess.

DISCUSSION

We felt that ischemia was the most likely cause of her abdominal pain due to the acuity of her symptoms as well as her past medical history being notable for constipation predominant irritable bowel syndrome and polymyalgia rheumatica for which she was placed on methotrexate.

There has been an association amongst patients with Irritable Bowel Syndrome (IBS) and the development of Ischemic Colitis. This has been thought to be due to serotonin modulating agents, specifically those that antagonize 5HT4 and 5HT3 receptor action. Drugs that have been implicated include Alosetron (5HT3 antagonist) and Tegaserod (5HT4 antagonist). Alosetron is used for the treatment of diarrhea predominant IBS, while Tegaserod is used for constipation predominant IBS[1]. It is also worth noting that neither acute or chronic mesenteric ischemia are associated with use of 5HT3/4 antagonists, and that this association is confined to ischemic colitis[1, 6]. Receptors that mediate gastric emptying include 5-HT4, 5-HT3, and 5-HT1B/D. Antral motility is also mediated by 5HT4.

Medical reconciliation for our patient did not reveal any medications that were antagonistic to serotonin.

It is worth noting however, that numerous studies have consistently demonstrated a higher prevalence of ischemic colitis in patients with IBS, who have never had treatment with 5HT4 antagonists[1, 6].

In speaking to the patient, it was discovered that she had been taking methotrexate for roughly 2 years. Studies have shown that mucosal injury secondary to methotrexate may be linked to peak dosage, however it has also been shown that even low dose treatment with methotrexate can cause mucosal injury[4, 7].

Our patient had a constipation predominant irritable bowel syndrome, that had been ongoing for an umber of years. She therefore would have been predisposed to retention of her medication which places her at a higher risk for mucosal injury[4] .

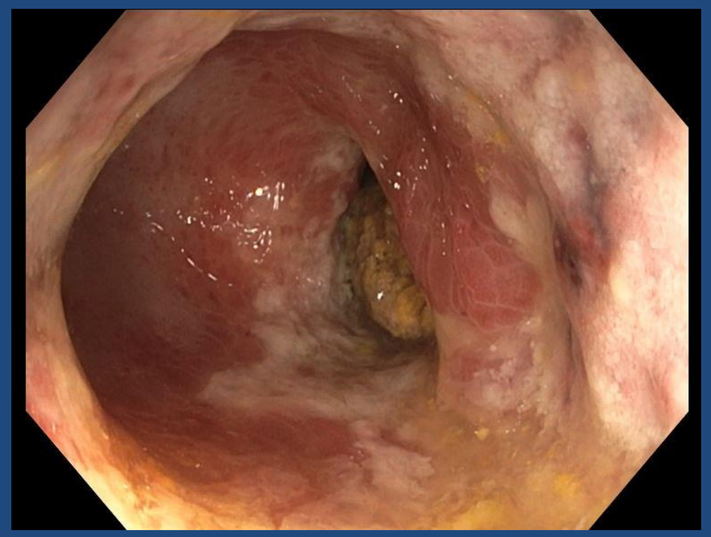

Figure 1:

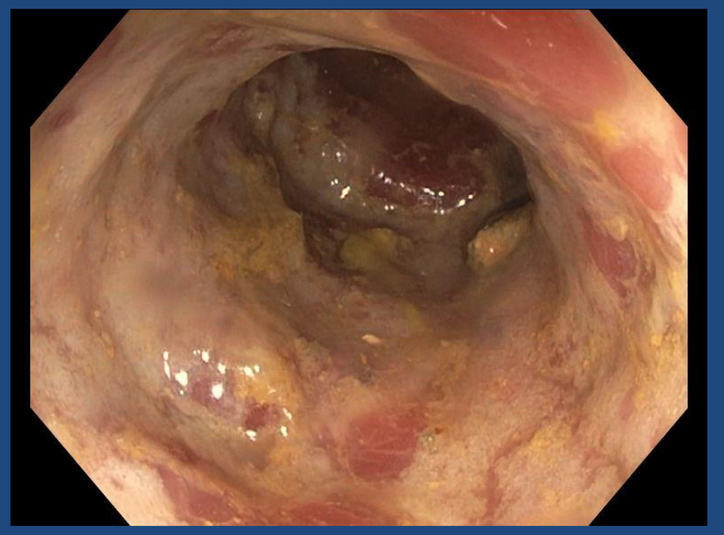

Figure 2:

SOURCES

1. Lewis JH. The risk of ischaemic colitis in irritable bowel syndrome patients treated with serotonergic therapies. Drug safety 2011;34(7):545-65.
2. Boussios S, Pentheroudakis G, Katsanos K, Pavlidis N. Systemic treatment-induced gastrointestinal toxicity: incidence, clinical presentation and management. Annals of gastroenterology 2012;25(2):106-18.
3. Berrocoso E, Mico JA. Role of serotonin 5-HT1A receptors in the antidepressant-like effect and the antinociceptive effect of venlafaxine in mice. The international journal of neuropsychopharmacology 2009;12(1):61-71.
4. Tsukada T, Nakano T, Miyata T, Sasaki S. Life-Threatening Gastrointestinal Mucosal Necrosis during Methotrexate Treatment for Rheumatoid Arthritis. Case reports in gastroenterology 2013;7(3):470-5.
5. Bymaster FP, Dreshfield-Ahmad LJ, Threlkeld PG, Shaw JL, Thompson L, Nelson DL, Hemrick-Luecke SK, Wong DT. Comparative affinity of duloxetine and venlafaxine for serotonin and norepinephrine transporters in vitro and in vivo, human serotonin receptor subtypes, and other neuronal receptors. Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology 2001;25(6):871-80.
6. Lucak S. Irritable bowel syndrome and ischemic colitis: evidence supporting the increased use of alosetron. Therapeutic advances in gastroenterology 2012;5(4):215-8.
7. Marginean EC. The Ever-Changing Landscape of Drug-Induced Injury of the Lower Gastrointestinal Tract. Archives of pathology & laboratory medicine 2016;140(8):748-58.
8. De Ponti F. Pharmacology of serotonin: what a clinician should know. Gut 2004;53(10):1520-35.
9. Zhou W, Huang Y, Lai J, Lu J, Feely M, Liu X. Anti-Inflammatory Biologics and Anti-Tumoral Immune Therapies-Associated Colitis: A Focused Review of Literature. Gastroenterology research 2018;11(3):174-88.
10. Atherton LD, Leib ES, Kaye MD. Toxic megacolon associated with methotrexate therapy. Gastroenterology 1984;86(6):1583-8.