

MESALAMINE INDUCED BRADYCARDIA- A RARE CASE REPORT

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ABSTRACT

A 35-year female presented to the Emergency Department, Government General Hospital, Vijayawada with an acute flare of ulcerative colitis diagnosed at a private hospital and was started on Tab. Mesalamine 1.2 gm twice daily, three days before and referred to higher centres in view of sinus bradycardia. We suspected Mesalamine induced bradycardia. After withholding the drug, the heart rate normalized within seven days. As per literature, third such case of Mesalamine induced Bradycardia was reported by Krzyzak M et al in a recent article in 2018. The present case is one of the rarely illustrated cases of bradycardia due to drug Mesalamine.

KEYWORDS: Bradycardia, Ulcerative colitis, Mesalamine.

INTRODUCTION

Mesalamine is amongst the 5-ASA derivatives introduced in ulcerative colitis with an idea of dealing directly with infection and inflammation through a combination of sulphonamides and Aspirin. These were amongst the first disease-specific therapeutic agents of the twentieth century.^[1] Medical therapy for Inflammatory bowel disease is problematic because of the multifactorial nature of disease aetiology, current therapy for IBD seeks to dampen the generalized inflammatory response. First line therapy for mild to moderate ulcerative colitis generally involves 5-ASA.^[2,3,4,5,6]

CASE REPORT

A 35-year female with a history of chronic occasional bloody diarrhoea and lower abdominal pain for 10 years with a background history of hemorrhoidectomy on 14-12-2018 treated in a local private hospital. During diagnostic workup, she was found to have mild to moderate ulcerative colitis by colonoscopy. She was started on Tab. Mesalamine 1.2 gm per oral twice daily for three days and intravenous Hydrocortisone 100mg thrice daily, Inj. Meropenem 1gm IV TID, supportive therapy to treat the acute flare of Ulcerative colitis. After three days, the patient developed bradycardia and had normal 2D echocardiographic findings and cardiac enzymes, and was referred to higher centres with oxygen support for further management.

At Emergency Department, Government General Hospital, Vijayawada, on examination patient was found

to be hypoxic (SpO₂ <60mm Hg) and had sinus bradycardia (47 beats per minute) (Fig.1) with blood pressure 130/70 mm Hg. Her lab reports revealed Hemoglobin of 8 gm/dl ESR was 68 mm/hour, WBC count 11,520 Differential count P73 L18 E4 B0 M4, Platelet count 3,64,00/mm³, Serum Sodium 131 meq/L, Serum Potassium 4.1 meq/L, Serum chloride 97 meq/L, Viral screening was negative.

Her CT scan abdomen revealed mid transverse colon, descending colon and sigmoid colon and rectum showing thickening with pericolonic stranding and haustral markings loss suggestive of ulcerative colitis (Fig.2). Her colonoscopy revealed diffuse ulcerations with friable mucosa and loss of vascularity in descending colon, sigmoid and rectum and biopsy confirmed ulcerative colitis and features suggestive of malignancy. She was given oxygen supplementation, two Packed cell transfusions and treated with steroids, IV fluids, probiotics, Metronidazole and Meropenem.

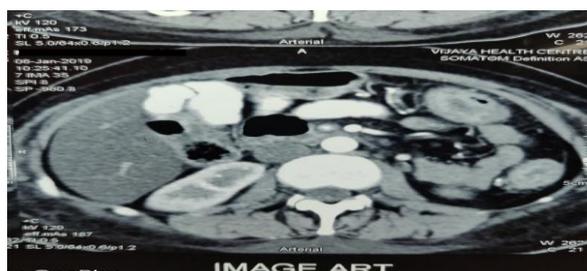


Fig. 2. CT abdomen with contrast showing thickening of mid-colon and descending colon and loss of haustration.



Fig. 1. Patient at the time of presentation with bradycardia-heart rate 47 beats per minute.

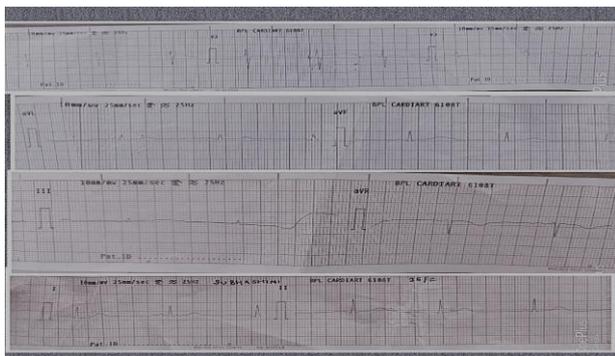


Fig. 3: ECG showing sinus bradycardia (Heart rate-50 beats per minute).

Cardiac workup was performed including ECG, 2D ECHO. ECG showed sinus bradycardia and 2D Echo was normal. In view of persistent bradycardia, with a suspicion of drug (Mesalamine) induced bradycardia (Fig.3), Mesalamine was withheld for a period of one week. By day eight, the heart rate returned to a range of 70-80 beats per minute.

She was started on Pentasa-Mesalamine 1gm sustained release formulation in order to minimize systemic side effects after gastroenterology consultation. She was symptomatically improved and maintained with a heart rate of 70-80 beats per minute. She was advised soft diet, folic acid supplementation and advised regular follow-up and colonoscopic evaluation.

DISCUSSION

Dr Samuel Wilks is credited with being the first to describe Ulcerative colitis in the year, 1859 when he wrote on "idiopathic colitis" and found it as distinct from the most common entity of bacterial colitis.^[7] Chronic inflammatory bowel disease includes ulcerative colitis, a disorder in which inflammation affects the mucosa and submucosa of the colon. In Asia, the disease was thought to be uncommon but recent reports have highlighted increasing incidence and prevalence due to environmental changes.^[8] Ulcerative colitis is a mucosal disease that usually involves the rectum and extends proximally to involve all or part of the colon. The disease is limited to rectum or rectosigmoid in 40-50% cases and in 30-40% the disease extending beyond sigmoid and total colitis in 20% cases.^[9]

Sulfasalazine was first used for the management of rheumatoid arthritis in the year 1942.^[10] Sulfasalazine consists of an antibacterial component, sulfapyridine bonded by an azo bond to a salicylate, Mesalamine (5-ASA).^[11] The side effects are predominantly due to sulfapyridine moiety causing nausea, fever, headache, rash, Hepatitis, Steven-Johnson's syndrome, Pneumonitis, Bone marrow suppression, Hemolytic anaemia. Mesalamine is generally well tolerated except for nephrotoxicity and interstitial nephritis.² There are second generation 5-ASA derivatives which preserve the effects of 5-ASA and decrease the side effects of sulfapyridine which are olsalazine (addition of another 5-ASA molecule) and Balsalazide (addition of 4-aminobenzoyl beta alanine).^[12]

The actions of Mesalamine are inhibiting the production of IL-1 and TNF alpha, inhibition of the lipoxygenase pathway, scavenging free radicals and oxidants, inhibition of PPAR gamma and NF-kappa beta ligand and modulation of prostaglandin metabolism.^[2,13] In the experimental models, Prostaglandin administration has been shown to increase heart rate. One of the proposed pathophysiology for bradycardia could be modulation by the effect of prostaglandins as mentioned in the present case report.^[14,15] In patients with cardiac conduction tissue disease, Mesalamine should be used with caution.^[16]

CONCLUSION

This is a rare case report of sinus bradycardia which improved after drug withdrawal. This could be mediated by prostaglandin metabolism modulation by Mesalamine.

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