



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.3520003>

Available online at: <http://www.iajps.com>

Research

Article

A STUDY TO EVALUATE ASSOCIATION OF ORAL MANIFESTATIONS IN ULCERATIVE COLITIS

¹Dr Muhammad Sohaib Khalid, ²Dr. Abeer Aziz, ³Dr. Aroosa Raheem

¹Allama Iqbal Medical College, lahore

²Margalla institute of health sciences isb/UHS lahore

³ Rawalpindi Medical College

Abstract:

Background: Ulcerative colitis (UC) is a chronic inflammatory tissue disorder (IBD) of autoimmune origin characterized by predominant intestinal symptoms such as abdominal pain, diarrhea, relapses and recurrences of rectal bleeding, which leads to weight loss. Extraintestinal manifestations may also occur, including involvement of the oral cavity. Oral involvement during IBD includes aphthous, plant pyostomatitis (PV) and lichen planus (LP).

Objectives: the aim of this study was to document oral manifestations in patients with CU and also to assess whether the oral manifestation could predict relapse and remission of CU.

Materials and Methods: Fifteen patients (8 men and 7 women) diagnosed with CU were enrolled in gastroenterology clinics (with a disease duration of 5 to 15 years) with healthy controls corresponding to age and sex. All study participants underwent an intraoral examination to evaluate the oral manifestation. The same patients were also asked a series of questions on the questionnaire to evaluate a possible association between the occurrence of oral manifestations and the relapse of a CU episode.

Results: PV, mild aphthous ulcer, LP, halitosis, dysgeusia, dry mouth, tongue lining, gingivitis and periodontitis were documented as oral manifestations in UC. PV, mild aphthous ulcer and LP showed recurrence and remission with UC severity.

Conclusion: our study revealed numerous and distinct intraoral manifestations in patients with CU. Previous episodes of oral manifestations were also similar and had reported an exacerbation of oral manifestations during relapses. Therefore, oral manifestations can be used as an indicator of relapse in the CU.

Keywords: Inflammatory bowel disease, oral manifestations, pyostomatitis vegetans, ulcerative colitis

Corresponding author:

Dr. Muhammad Sohaib Khalid,
Allama Iqbal Medical College, lahore

QR code



Please cite this article in press Muhammad Sohaib Khalid et al., A Study To Evaluate Association Of Oral Manifestations In Ulcerative Colitis., Indo Am. J. P. Sci, 2019; 06(10).

INTRODUCTION:

Inflammatory bowel disease (IBD) is a group of inflammatory diseases of the colon and small intestine, which mainly include Crohn's disease and ulcerative colitis (UC). In genetically sensitive individuals they can. An inappropriate and prolonged inflammatory response is believed to derive from the complex interaction of environmental, genetic and immunoregulatory factors with the intestinal microbiota with UC. The current and generally accepted theory states that an intestinal inflammation is a consequence of an Abnormal effect of T lymphocytes on enteric bacterial flora in genetically sensitive individuals. This chronic inflammation of the colonic mucosa leads to ulceration, edema, bleeding, diarrhea and fluid and electrolyte loss. [1] UC is a relapsing and remitting disease. The incidence and prevalence of UC in Pakistan is reported at 6.02 / 105 per year, or 44.3 / 105 people. [2] UC shows intestinal and extraintestinal complications. Local complications include ischiorectal abscess, rectal prolapse, hemorrhoids, fibrous stenosis, pseudo-polyposis, perforation, massive bleeding and colon cancer. Extraintestinal complications are common in the CU and can dominate the clinical picture. Some of them occur During the relapse of intestinal disease, others appear to be independent of the severity of the condition. These include erythema nodosum, pyoderma gangrenosum, rashes, uveitis, arthritis, transient hepatitis and venous thrombosis. [1]

Since the oral cavity is the entrance portal and part of the gastrointestinal tract, oral manifestations occur. The oral manifestations of UC occur as a systemic complication or extraintestinal manifestation that can accompany, worsen or regress with changes in the severity of the disease. Plant piostomatitis (PV) is a specific oral indicator of CU and other manifestations such as aphthous ulcers, lichenoid lesions, halitosis, dysgeusia, dry mouth, covered tongue, gingivitis and periodontitis are considered non-specific oral manifestations. [3-6]

The aim of this study was to list and evaluate the oral manifestation in patients with CU and also to evaluate whether the oral manifestation could be a predictor of relapse and remission of CU.

MATERIALS AND METHODS:

The study was conducted in gastroenterological Department in Mayo Hospital lahore. Fifteen (8 males and 7 females) diagnosed with CU [figures 1 and 2 show active colitis, figure 3 shows curative colitis] and age and gender control were included in the study obtaining informed consent was Examining various studies and personal experiences of oral UC manifestations, a detailed medical history format was prepared which included the evaluation of the patient for PV, ulcer

of the ulcer, lesion of the lichenoid, lining of the tongue, halitosis, dysgeusia, dry mouth, gingivitis and periodontitis. PV, aphthous ulcer (compound index), [7] lichenoid lesion, lining of the tongue (Miyazaki *et al.*, Index) [8] have been studied clinically.

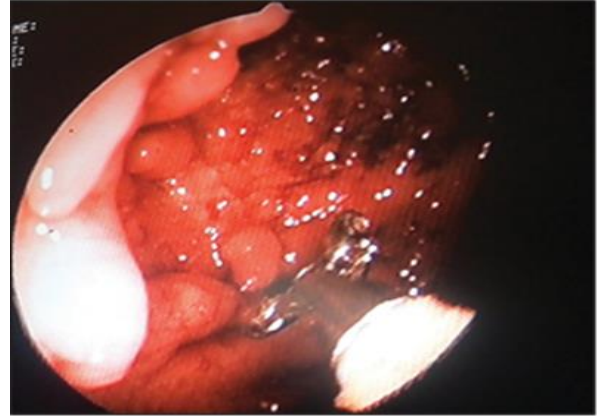


Figure 1: Multiple pseudopolyps with mucosal ulcers in the colon

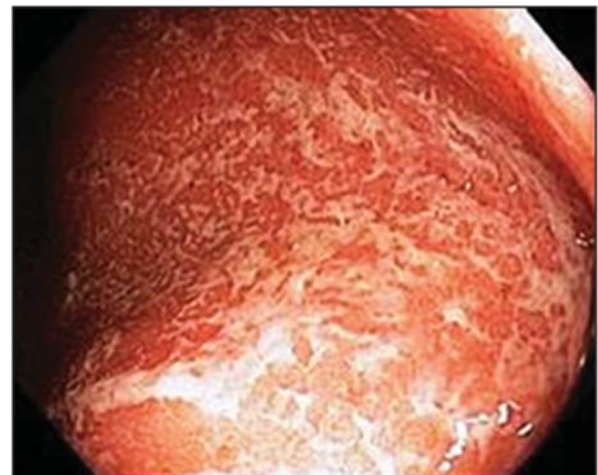


Figure 2: Mucosal irregularity with loss of vascular pattern and edematous appearance of the colon



Figure 3: Healing ulcers in the colon

Halitosis and dysgeusia were Evaluated based on a series of questions, dry mouth based on estimation of unstimulated salivary flow. Periodontal status was assessed by gums and periodontal index. All the above parameters were evaluated in diagnosed UC patient. A questionnaire was created to evaluate these manifestations during past remissions, which was explained to the patient and completed. All the parameters were compared with the controls.

RESULTS:

The results of the present study in the case group are shown in Table 1. Of the 15 patients, 10 reported aphthous ulcerations, one patient revealed PV, three patients had a lichenoid lesion and 11-12 patients had halitosis and dry mouth and 4 - 5 patients had tongue and dysgeusia disorders. Salivary flow rate, tongue coverage and periodontal status between study and control group are shown in Table 2. Salivary flow was significantly reduced, coated tongue was present, and periodontal status was comparatively similar in patients with CU compared to controls . The aphthous state during a previous relapse and the current state are statistically highly significant [Table 3]. Of all the manifestations, the mouth sores examined showed statistically significant values in comparison between the previous relapse of the disease and the present study.

DISCUSSION:

It is hypothesized that the UC, an inflammatory intestine, is the result of an unregulated and exaggerated immune response to commensal commensal microbes in genetically sensitive individuals. Genetic susceptibility plays an important role and the genes involved regulate several important biological functions, including immune regulation, mucosal barrier integrity and microbial clearance and / or homeostasis. The gene on chromosome 7 associated with UC MDR1 protects the cells physiologically from toxic substances or metabolites. Some genotypes of UC, HLADRB1 * 0103, B * 27 and B * 58 are associated with extraintestinal manifestations. [9]

Table 1: Oral manifestations evaluated in the study group

Manifestation	Study group (n=15)
Pyostomatitis vegetans	1
Aphthous ulceration	10
Lichenoid lesion	3
Halitosis	12
Dysgeusia	5
Dry mouth	11
Tongue coating	4

Table 2: Salivary flow rate, tongue coating and periodontal status between study and control group

Manifestation	Study	Control group	P
Salivary flow rate (ml/min)	1.5	1.98	0.02(S)
Tongue coating	4.5	3	0.12(NS)
Periodontal status			
Gingival index (score)	1.2	1.3	0.23 (NS)
Periodontal index (score)	1.0	1.4	
Loss of attachment (mm)	0.4	0.2	

NS: Not Significant

Oral lesions appear as an extraintestinal manifestation that can accompany, aggravate or regress the disease. Therefore, the present study was conducted to evaluate oral manifestations and also to assess whether these manifestations can predict the remission and relapse of the CU. The results of our study show that all patients diagnosed with CU had oral manifestations. Oral ulcers, halitosis, taste changes and dry mouth were common in patients with CU.

One of the male patients had PV on the lower anterior gingiva, a specific oral manifestation of CU, and reported an exacerbation during relapse. [10] PV is common in middle-aged young adults with a male predominance (3: 1). Clinically, it is characterized by an initial formation of 2 to 5 mm in diameter, abscesses on the erythematous mucosa, erosion and fusion. Sometimes they correspond to exophytic lesions and produce a vegetative appearance. The surface is creamy-yellow in color and covered by a pseudomembrane, which dissolves easily and facilitates the formation of small ulcers and superficial erosion. The most common sites are the labial and buccal mucosa, the hard and soft palate, the gums and more rarely the floor of the mouth. Histopathology shows FV hyperkeratosis, acanthosis, intraepithelial and subepithelial micro-abscess with prominent neutrophil and eosinophilic infiltrate. [12]

Several authors have hypothesized that PV is due to an aberrant immune response to unidentified factors. Since IBD is the most common underlying disease, cross-reactive antigens in the intestine and mucosa are thought to be responsible for secondary mucocutaneous manifestation. [13] Numerous clinical cases and some studies have suggested PV as a specific indicator of UC.

Table 3: Aphthous ulcer status during previous relapse and present status in study group

Aphthous ulcer status	Composite index Functional status affected due to ulcer	Number of ulcer affected due to ulcer	Pain status (VAS Score)
Previous Relapse	3.3	4	1.7
Presentevaluation	0.9	1.2	0.5

$P=0.001$. HS: Highly significant

In the present study, 10 patients had aphthous ulcers and reported worsening of aphthous ulcers during the previous recurrence, suggesting that the assessment of canker sores can be used as an indicator of recurrence and remission. The aphthous ulcerations in the UC are due to the lack of micronutrients in iron deficiency anemia and in vitamin B12 in pernicious anemia. The results of our studies reinforce our belief that the results of Correll et al. To support those who have suggested that recurrent oral ulcers should be used as one of the factors for the onset, relapse and remission of the CU. [14] Among the patients with CU examined, three patients presented with oral lichen planus (OLP). The co-occurrence of OLP and UC can be attributed to the side effects of drugs such as sulfasalazine and diltiazem. It appears that the aminosalicyclic acid portion of the drug sulfasalazine is responsible for the response and that the LP is a true complication of mesalazine therapy. [15] Some authors have claimed that the PLO is a pharmacological complication and the discontinuation of sulfasalazine corrects the condition, while others contraindicate and have reported that abstinence has not decreased but has progressed further. [13] Studies should also be conducted to demonstrate whether the PLO is a manifestation of CU or of reactive injuries to unavoidable drugs used to treat CU.

Twelve of our CU patients reported halitosis; Our results corresponded to Elahl et al. This finding may be due to a greater amount of bacteria which reduces colic sulfate and leads to higher concentrations of hydrogen sulfide than toxic gas in patients with CU. The mucosa of the human colon is maintained by the epithelial barrier of the colon and the immune cells of the lamina propria. N-butyrate, a short-chain fatty acid, is oxidized into carbon dioxide and ketone via the beta-oxidation pathway. N-butyrate has been shown to support the supply of nutrients to this epithelial barrier. Studies have shown that hydrogen sulfide plays a role in influencing this pathway of beta-oxidation by disrupting short-chain acetyl-Co-A dehydrogenase, an in-route enzyme. An unrelated study has suggested that the sulfur in red meat and alcohol can lead to an increased risk of relapse for patients in remission. [16,17] Therefore, red meat and alcohol should be avoided in patients with CU.

Five patients with CU reported a change in taste consistent with the results of Elahl et al. It is believed to be due to the long-term use of drugs in the treatment of UC, since sulfasalazine is metabolised to sulfapyridine. Serum levels of sulfapyridine > 50 µg / ml are associated with altered taste. [18]

In our study, the salivary flow was reduced compared to controls consistent with other studies [19] and it is believed that this is due to the long-term use of steroids and sulfasalazine, which reduce the secretory capacity of acinar cells. Four patients showed yellow to white discoloration with a thick coating and it is thought that this was due to steroid therapy or an overlapping Candida infection or neglect of oral hygiene caused by stress. Periodontal status was comparable to controls and one of the cases presented with severe gingivitis and periodontitis. Brito et al. has suggested that patients with IBD have higher levels of Treponema denticola and other bacteria associated with opportunistic infections in inflamed subgingival sites, which could be harmful due to the crucial interaction between microbe and host and responsible for the severity of gingivitis and periodontitis are. [20] Finally, it is suggested to patients with CU to be prone to colon cancer with an increase in colitis duration and recurrences. Meta-analysis by Eden et al. has suggested that with increasing duration of colitis, ie 10, 20 and 30 years, the risk of colorectal cancer increases by 2%, 8% and 18%, respectively. [21] Therefore, the simple early diagnosis of oral manifestations in patients with CU can support prognosis, monitoring of relapses and remissions and possibly the prevention of colorectal cancer.

CONCLUSION:

The present study indicates that oral symptoms and injuries such as aphthous ulceration, PV and other manifestations should alert a physician to a history and suggest the possibility of CU, even if there are no complete gastrointestinal manifestations. [21] Few patients in our study considered the oral manifestation as an indicator of the severity of the disease and paid due attention to it. Information on oral UC events is less widespread and is based mainly on clinical cases. The results of this study were obtained from a small number of patients; Therefore, studies on larger samples would provide

a better understanding of the evaluation of oral manifestations in patients with CU and their correlation with recurrence and remission.

REFERENCES:

1. Friedman S, Blumberg RS. Inflammatory bowel disease. In: Kasper DL, Braunwald E, Fauci AS, Hauser SL, Longo DL, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 16th ed. USA: McGraw-Hill Companies, Inc.; 2005. p. 1776.
2. Gunisetty S, Tiwari SK, Bardia A, Phanibhushan M, Satti V, Habeeb MA, et al. The epidemiology and prevalence of ulcerative colitis in the South of India. *Open J Immunol* 2012;2:144-8.
3. Paradowska A. Oral cavity at ulcerative colitis – Preliminary study. *Dent Med Probl* 2008;45:382-5.
4. Daley TD, Armstrong JE. Oral manifestations of gastrointestinal diseases. *Can J Gastroenterol* 2007;21:241-4.
5. Edwards FC, Truelove SC. The course and prognosis of ulcerative colitis. III. Complications. *Gut* 1964;5:1-22.
6. Ganapelli A, Ayinampudi BK, Pacha VB, Podduturi SR, Gangula S, Sankireddy S. Oral indicators of ulcerative colitis: A rare case report and review of literature. *J Indian Aca Oral Med Radiol* 2012;24:56-62.
7. Mumcu G, Sur H, Inanc N, Karacayli U, Cimilli H, Sisman N, et al. A composite index for determining the impact of oral ulcer activity in Behcet's disease and recurrent aphthous stomatitis. *J Oral Pathol Med* 2009;38:785-91.
8. Van Tornout M, Dadamio J, Coucke W, Quirynen M. Tongue coating: Related factors. *J Clin Periodontol* 2013;40:180-5.
9. Rothfuss KS, Stange EF, Herrlinger KR. Extraintestinal manifestations and complications in inflammatory bowel diseases. *World J Gastroenterol* 2006;12:4819-31.
10. Lobkowicz F, Eckert F, Braun-Falco O. Pyostomatitis vegetans. A specific marker of Crohn disease and ulcerative colitis. *Hautarzt* 1991;42:92-5.
11. Knapp N, Albuquerque R, Khan Z, Richards A, Brown RM. Pyostomatitis vegetans in ulcerative colitis; management with topical tacrolimus and systemic azathioprine in a 10-year-old boy (case report and review of the literature). *J Int Oral Health* 2016;8:132-6.
12. Ruiz-Roca JA, Berini-Aytés L, Gay-Escoda C. Pyostomatitis vegetans. Report of two cases and review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2005;99:447-54.
13. Femiano F, Lanza A, Buonaiuto C, Perillo L, Dell'Ermo A, Cirillo N, et al. Pyostomatitis vegetans: A review of the literature. *Med Oral Patol Oral Cir Bucal* 2009;14:E114-7.
14. Correll RW, Wescott WB, Jensen JL. Recurring, painful oral ulcers. *J Am Dent Assoc* 1981;103:497-8.
15. Alstead EM, Wilson AG, Farthing MJ. Lichen planus and mesalazine. *J Clin Gastroenterol* 1991;13:335-7.
16. Davies PT, Shadforth MF. Sulphasalazine induced oral lichen planus. *Br Med J* 1984;288:194.
17. Tannock GW. The bowel microbiota and inflammatory bowel diseases. *Int J Inflam* 2010;2010:954051.
18. Tilg H, Kaser A. Diet and relapsing ulcerative colitis: Take off the meat? *Gut* 2004;53:1399-401.
19. Brito F, Zaltman C, Carvalho AT, Fischer RG, Persson R, Gustafsson A, et al. Subgingival microflora in inflammatory bowel disease patients with untreated periodontitis. *Eur J Gastroenterol Hepatol* 2013;25:239-45.
20. Eaden JA, Abrams KR, Mayberry JF. The risk of colorectal cancer in ulcerative colitis: A meta-analysis. *Gut* 2001;48:526-35.
21. Elahi M, Telkabadi M, Samadi V, Vakili H. Association of oral manifestations with ulcerative colitis. *Gastroenterol Hepatol Bed Bench* 2012;5:155-60.