

The Effect of Stress on Colon Ulcerative Colitis Disease Process

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Abstract: Ulcerative colitis was first described in the mid 18th century, while Crohn's disease was reported afterward in 1932 as Regional Ileitis. As Crohn's disease can involve the colon with the same symptoms as ulcerative colitis shows, this two diseases are often identified together as inflammatory bowel disease. However, they are clearly distinguished in terms of pathophysiology. The etiology has not been accurately identified yet; but they may be influenced by stress and anxiety. The present study examined 300 average 27-aged patients with Ulcerative Colitis. The experiment examined 100 hospital patients administered proper diets and medicines, 100 patients in military barracks administered some particular medicines (Ranitidine, Sulfasalazin, Mesalamine) due to restricted access to medicines and 100 jailed patients lacking adequate facilities and deprived of expensive drugs (unless a few), in terms of stress and anxiety and their role in recurrence of the condition. According to experiments, 85 hospital patients were improved due to mental comfort; 91 barrack patients increasingly experienced fewer symptoms as their anxiety decreased, but 75 patients reported apparent general weakness, fatigue, hair loss, joint swelling of fingers. Most patients in prison (88) reached peak severity due to high stress and anxiety. Studied groups reported experienced diarrhea, nausea and abdominal cramps 23 times per day. When execution time was approaching, these unintentionally occurred even in bed.

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1. Introduction

Ulcerative Colitis (UC) is an inflammatory bowel disease with an unknown cause. The severity of symptoms does not depend on the extent of the disease but the severity of the inflammation (Strober and James, 1986; Kemler & Alpert, 1980). Diagnosis is based on clinical chart, stool test, endoscopic findings and histology of biopsy sample. Based on clinical symptoms, endoscopic and histopathologic findings are classified to mild, moderate and severe (Raby et al., 1987; Strober and James, 1986). Treatment includes medical and surgical procedures. The medical treatment consists of corticosteroids, salicylates, cytotoxics and antibiotics. Recently, studies have been done on Lipoxygenase inhibitors (Bhagat & Das, 1994) and short-tailed fatty acids like butyrate (Danzi, 1988) which were promising. For any treatment procedure, low serum albumin and high frequency of diarrhea mean worse prognosis (Kochhar et al., 1991; Rankin, 1990). The first used drug is Sulphasalazine (SAZ) containing 5-amino salicylic acid (5-ASA) bonded to a Sulfapyridine (SP). These two are separated through bacterial action in colon. The effective therapeutic part is 5-ASA; SP is not therapeutically effective (Andus et., 1995); instead it is responsible for transporting 5-ASA as well as a side effect factor of the medicine. Some side effects (e.g. nausea, emesis, anorexia,

malabsorption, headache and alopecia) depend on medicine doze and will disappear as the dosage reduces. Some are idiosyncratic (e.g. exanthema, hemolytic anemia, agranulocytosis, hepatitis, alveolitis, sterilization and colitis) which often require stop or change of medicines. To reduce or eliminate side effects, SP is excluded from SAZ complex and thus coated 5-ASA is produced and supplied as delayed-release products and suppositories as Asacol and Mesalamin or slow-release tablets such as Pentasa (Kochhar et al., 1991). Different clinical studies indicated that new 5-ASAs impose the same effects as SAZ does or more as remission retentive with lesser side effects (6% versus 15%) in treatment of mild to severe diseases (Strober & James, 1986; Kochhar et al., 1991; Salmon et al., 1989; Nuzz and Amerio, 1992; Hodgson and Jewel, 1987; Rodriguez et al., 1994; Fioochi et al., 1989; Donaidson et al., 1989). Therefore, the present study aims to evaluate the effect of stress and anxiety on the disease process because no previous investigation is carried out in Iran on the effect of these two medicines on the process of ulcerative colitis.

2. Materials and Methods

The current study examined 300 patients with inflammatory bowel disease (IBD) (100 subjects

in Shariati hospital of Isfahan, 100 subjects in Bagh-e Abrisham barrack, and the rest 100 in central prison of Isfahan). Most of the patients were male; although, different studies showed that its prevalence is not related to gender and appears in those prone to the disease (Strober & James, 1986; Kemler & Alpert, 1980; Raby et al., 1987; Rankin, 1990). According to various studies, the average age of onset was reported in the second and third decades. In the present study, the average age of disease was determined as 27. In studies previously conducted in Iran, the average age was 21 (Desroches et al., 1983; Macoul, 1970; Coupland et al.). A positive family history is a major indicator of patients with IBD, particularly Ulcerative Colitis as noted before. According to studies conducted in Argentina and Israel, this value was reported 25-30% in patients with IBD (Danzi, 1988; Kochhar et al., 1991). Desroches et al. (1983) reported approximately 3% which seems to be due to unawareness of symptoms by the patients or ignorance by relatives (Desroches et al., 1983). In the current study, this value was reported 28% which is consistent with Israel and Argentina study. The most common reported clinical symptoms were nocturnal diarrhea (90%), rectal bleeding (88%) and dysentery (75%). Mir Majlesi et al. reported the most prevalent symptoms as rectal bleeding and abdominal pain (about 84%). In available references, the most common symptoms were reported as nocturnal diarrhea, rectal bleeding and abdominal pain (Strober and James, 1986, Kemler and Alpert, 1980; Raby et al., 1987). According to findings, the most frequent areas were respectively rectum and rectosigmoid followed by colon (70% and 14%). Desroches et al. (1983) reported involvement place was immediately before splenic angle in 42% patients and whole intestine was involved in 27% similar cases. Other studies of course found that about 40-50% patients reported involvement in the rectum and rectosigmoid, 30-40% in upper areas and about 20% complained about involvement in large intestine (Strober and James, 1986, Kemler and Alpert, 1980; Danzi, 1988; Kochhar et al., 1991). Involvement of intestine in the current study seems consistent with global findings; although severe and widespread involvement of disease and pan colitis involvement of the present study is lesser than corresponding foreign and domestic studies. Studied patients reported 68% off-intestinal symptom among which anal fissure was the most prevalent.

3. Results

The present study examined totally 300 patients with IBD (inflammatory bowel disease) including 100 hospital patients, 100 barrack patients

and 100 jailed patients. Of this, 285 patients positively responded to studied cases.

The three groups were infected for unknown reasons; but disease process completely changed according to life conditions as well as changes in living place. The condition of hospital patients improved using administered medicines, proper diets, pharmaceutical and vitamin supplements. The patients backed to their normal lives unless under abnormal circumstances including family conflicts, financial problems, unstable financial situation, as well as depression, loss of loved ones, and also no proper food and pharmaceutical diet as Diagram below shows.

During treatment period by regularly using proper medicines and diets, patients experienced decrease in inflammation in 20-30 cm of large intestine. Colonoscopy tests indicated low inflammation and considerable decrease in anal bleeding and daily diarrhea stop. In addition, 85 subjects experienced weight gain compared to the first months of infection as well as hair loss stop. Most patients were satisfied of no recurrence.

Due to frequent use of folic acid and ferrous sulphate, 23 patients did not experience anemia, paleness, and cracked corners of lips, weakness and fatigue. But others experienced general weakness and anemia due to lack of food supplements, multi-vitamins and iron. These subjects repeatedly reported that they experienced decrease in disease process and symptoms when they went to religious and recreational trips following the same diet and medications. Approximately 100 subjects emphasized that they experienced decrease in disease process because they were mentally comfort travelling with their family or during pilgrimages. They experienced a much better physical conditions compared to past. This can be explained by the hypothesis that stress and anxiety cause recurrence.

The results obtained from barrack are more considerable than from hospital. For, 100 subjects with IBD took similar foods and the physician administered certain types of medicines due to limited access to medications. Their results were more considerable. For example, all 100 patients took similar foods in a month as well as similar fruits three times a week; they were administered medicines such as Sulfasalazine and Mesalamine (5.ASA) and Ranitidien. As a result, disease progressed similarly unless they were appointed to sentry or they were informed bad news about family or those who experienced anxiety and worry as they left home. 91 patients reported decrease in symptoms as they approached to end of the military service; but 75 patients clearly experienced general weakness, fatigue, hair loss, pain and finger joint swelling.

These were not administered Mesalamine enemas; but they experienced rectal pain after each stool.

Interesting findings were achieved on 100 jailed patients with IBD. The results obtained from prisoners were different from but similar to the first and second groups regarding insufficient access to medical facilities for treatment. Since prisoners had relatively same diet (except for those who could afford fruits and nuts) and they were deprived from conventional and expensive medicines on the market (except for some) the disease of 88 subjects intensified to the peak. Studied patients claimed that they experienced abdominal cramps; diarrhea and nausea 23 times a day. They mostly complained about abdominal cramps and rectal pain. They really experienced severity and progress of incurrence. IBD prisoners with short sentence period (few months) could more considerably control the condition; because they hoped they could back to normal life or those who had continuous family visit and used available medications. While those who were sentenced to long prison or death reported no symptoms of disease control using medications. These prisoners consisting 88 patients reported frequent diarrhea, rectal pain, abdominal cramps, hand tremors, anemia, and daily visible overabundant bloody stools. As they approached to execution time, they unintentionally experienced these even in bed. Having strong morale and less attention to everyday feelings and less affects toward family, murderers showed a considerable decrease in the disease.

Although they didn't regularly follow diet and medications, they had relatively healthy conditions.

Figure 1 shows distribution of symptoms in patients with Ulcerative Colitis referred to Isfahan Shariati Hospital in 2010-2012. Table 1 shows involvement area of the colon among patients with Ulcerative Colitis referred to Isfahan Shariati Hospital in 2010-2012. Figure 2 shows comparison of diets (proper and improper), stress (stressed or not particularly stressed), and medications (administered or not administered) in the present study.

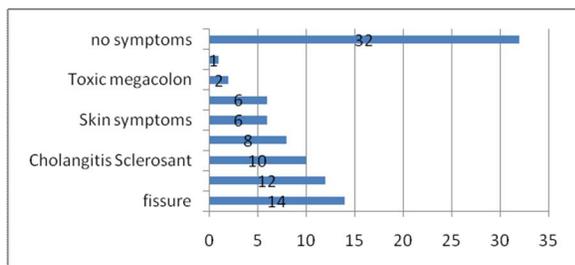


Figure 1: Distribution of symptoms among patients with Ulcerative Colitis

Table 1. involvement area of colon among patients with Ulcerative Colitis

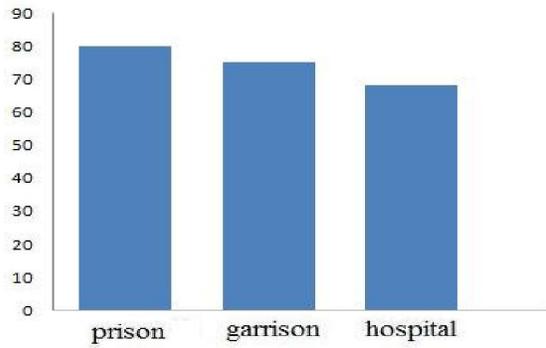
Involvement area	Distribution	Percentage
Only rectum	64	32
Only rectosigmoid	76	38
Descending colon	28	14
Transverse colon	12	6
Ascending colon	4	2
Pan colitis	16	7

4. Discussion and Conclusion

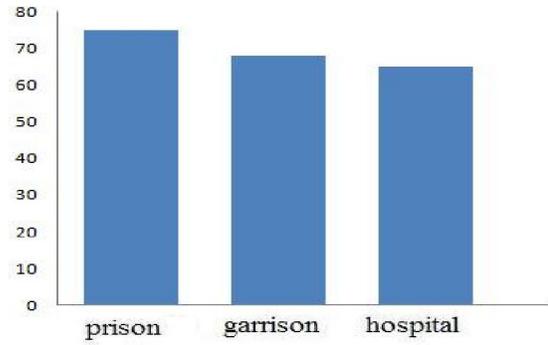
There is a strong relationship between stress and anxiety and disease activity and recurrence. In most of patients, stress and problems cause the disease to exacerbate. Even in some patients the first incidence of the disease is a severe stress in life. In some infected patients, stress can appear the disease after a short inactivity. Integrating some factors greatly influence on the disease under stress. For example, in patient students, absence or death of a close relative combined with exam stress made the disease severely exacerbate. Prisoners who are condemned to death or long time sentences experience more prevalent recurrence (Ekbohm et al., 1990; Rutter et al., 2004; Kisiel et al., 2012; Alison et al., 2012).

Ulcerative Colitis is different from colon cancer; they never shift to each other. Alison et al. (2012) believes that identification of colon cancer cells is clearer and easier than inflammatory involved areas in Ulcerative Colitis; currently, colon cancer is distinguished from IBD. This is consistent with Alison (2012). Kemler and Alpert (1980) claimed that Mesalamine contribute to initial improvement; rectal treatment is by Asacol enemas which is consistent with current study.

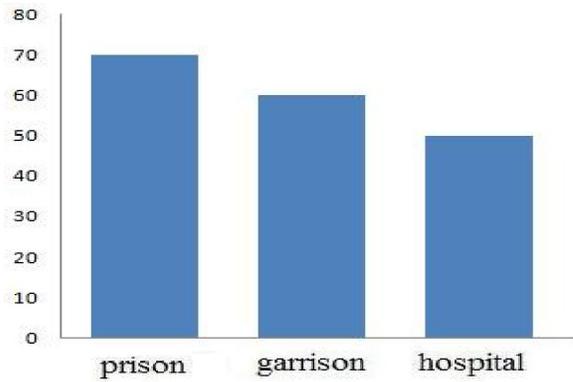
Japanese scientists, Ozaca University, studied medicinal herbs (45%); their finding is consistent with current study that herbs can contribute to IBD (38%). Ulcerative colitis is the most prevalent condition related to all over the world including Iran. Bafandeh et al. (2002) showed that Sulfasalazine has more therapeutic effect and lesser side effects compared to Mesalamine which is consistent with the current study. According to the present study, Ulcerative Colitis in Iran seems highly similar to other parts of the world in terms of epidemiology and demographic and clinical characteristics of the patients; but its recurrence as well as off-intestinal effects is more than other studies. This necessitates more accuracy to treat patients and direct them to regularly correct administration as well as diet.



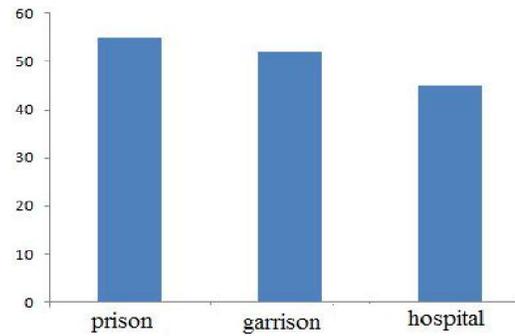
Comparison of proper diet, under stress, no medication



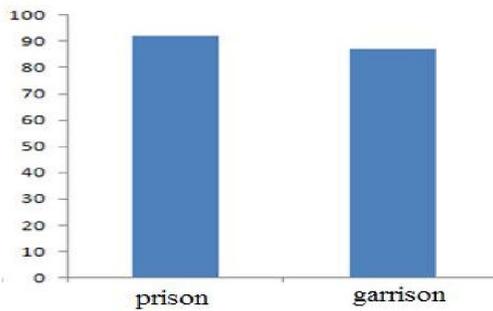
Comparison of proper diet under stress and medicine



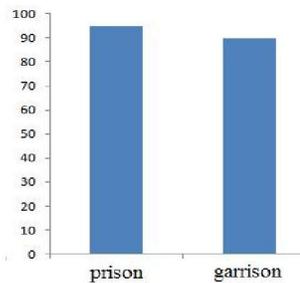
Comparison of proper diet, no stress and no medicines



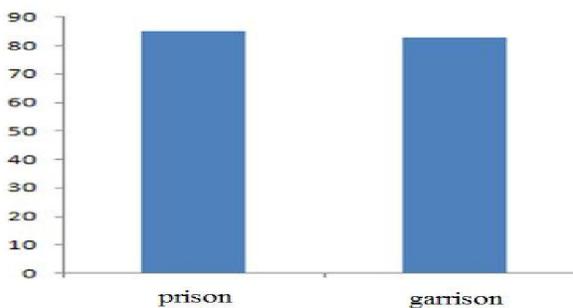
Comparison of proper diet, no stress, under medication



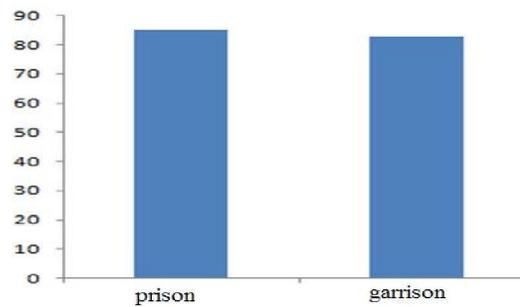
Comparison of improper diet, under particular stress, no medication



Comparison of improper diet, under particular stress and medication



Improper diet, no stress, no medication



Comparison of improper diet, no stress, under medication

Figure 2: Comparisons of diet (proper and improper), stress (stressed and no particular stress), medication (administered or not)

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