



Review Article

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AYURVEDA APPROACH FOR MANAGEMENT OF ULCERATIVE COLITIS: A REVIEW

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Received on: 15/12/18 Accepted on: 21/01/19

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DOI: 10.7897/2277-4343.10016

ABSTRACT

Ulcerative colitis is a chronic inflammatory disease primarily involve in the mucosa and sub-mucosa of large gut which can be named as a challenging disease to manage due to its unexplained origin, remitting and relapsing course, drug dependency and drug resistant. Atisara is a group of disease described in Ayurveda texts. Some subtypes of Atisara can be correlated with signs and symptoms of Ulcerative colitis which described in modern medical system. Management of these subtypes have been described in Ayurveda texts with its basic principles. Hence, approach of management of Ulcerative colitis according to Ayurveda treatment principles have been made in this review to overcome drawbacks of modern treatments and for better management.

Keywords: Ulcerative colitis, Ayurveda management, Atisara

INTRODUCTION

Japanese Society of Gastroenterology defined Ulcerative colitis as a diffuse non-specific inflammatory disease of unknown origin that continuously effects the colonic mucosa starts from the rectum and often forms erosion and or/ ulcers. Lesions of this disease involve only mucosa and sub mucosa except for fulminant cases ¹. Around 90% of all cases of ulcerative colitis are mild or moderate in severity ² and around 5–8% patients present with signs and symptoms of acute severe colitis at first time when they seek for treatment ³. Though prevalence of the disease known to be high in western countries, according to a study done by Gautam Ray in 2016 incidence is increasing in India ⁴ and according to Indian Society of Gastroenterology, India shows the highest incident among Asian countries. ⁵

According to the severity of the disease, oral, tropical and IV administration of Amino salicylates, Steroids, Immunomodulators, anti-Tumor necrosis factors have been used to subside the active phase and to maintain the remission. But, drug resistance, drug dependency and side effects of those drugs are still high and colectomy is known as the curative procedure for UC ⁶.

Ayurveda, an ancient Indian system of medicine has described a group of diseases where Ulcerative colitis can be correlated. Management of those diseases by using Ayurveda medicines have been practiced by Ayurveda physicians since ancient period. Ayurveda approach for the management of Ulcerative colitis will be beneficial to overcome the limitations and adverse effects of modern treatments. Hence, correlation of disease with Ayurveda concepts and disease management according to Ayurveda principles will be discussed in this paper.

EATIOLOGY, PATHOPHYSIOLOGY, SIGNS AND SYMPTOMS OF ULCERATIVE COLITIS

Etiology of ulcerative colitis

Ulcerative colitis is a disease with multifactorial origin. Involvement of genetic and environmental factors have been considered as causative factors though there is no any exact etiology found for occurrence of Ulcerative colitis. HLA-DR27, Chromosomes 1 and 4⁸, ECM 1, CDH1, HNF4 α , Laminin B1 genes which are responsible for mucosal barrier function ⁹ and abnormal immune response ⁶ are found to be susceptible for Ulcerative colitis, though further researches are necessary to prove it. Infection^{10,11,12} dietary factors such as low fiber diet, mercury ingestion, refine sugar, corn flakes ¹³, smoking, breast feeding, oral contraceptive pills ¹⁴, appendectomy ¹⁵, western diet ¹⁶, left-handedness ¹⁷, depression ¹⁸, seasonal variation ¹⁹ also thought to be the causative factors in Ulcerative colitis.

Pathophysiology of ulcerative colitis

The pathogenesis of Ulcerative colitis is not clearly understood. Multiple genes, environmental factors and intestinal microbiota dysbiosis leads to dysregulated immune response is the probable pathophysiology of this disease^{20,21}.

Signs and symptoms of ulcerative colitis

The initial and commonest symptom of ulcerative colitis is rectal bleeding. This may be associate with mucous ⁶. Increased frequency of stool (83%), sense of incomplete evacuation (78%), Urgency and tenesmus (63%) may be the symptoms of hypersensitive and poorly compliant rectum due to inflammation ^{22, 23}. Low hemoglobin concentration of blood and hypoalbuminemia as a consequence of loss of albumin into the stool may be present ²⁴.

COMPLICATIONS AND EXTRA INTESTINAL MANIFESTATIONS OF ULCERATIVE COLITIS

Complications

Toxic megacolon²⁵, fulminant colitis²⁶, carcinoma and dysplasia²⁷, colon perforation, massive hemorrhage, benign/malignant stricture, inflammatory polyposis and anorectal complications such as ischiorectal abscess, fistula in ano, fissure in ano²⁸ are reported as complications of Ulcerative colitis.

Extra intestinal manifestations

Extra intestinal manifestations of Ulcerative colitis affect mainly musculo skeleton system, skin, hepato biliary system and eye. Common lesions are reported as erythema nodosum, pustular skin lesions, leg ulcers, colitic arthritis, sacro-iliitis, ankylosing spondylitis, episcleritis and iritis²⁹.

CORRELATION OF ULCERATIVE COLITIS WITH AYURVEDA CONCEPTS

Acharya Charaka used the word Mahasrotas for whole digestive system³⁰. Factors affect Jataragni (digestive fire) cause the diseases of digestive tract and various kind of diseases of gastro intestinal system have been described in Ayurveda texts. Under the diseases of digestive tract, sub types of Atisara (diarrhea), sub type of Pravahika (dysentery) show some of the similar signs and symptoms with Ulcerative colitis.

Etiological correlation

Causes of Atisara

Etiology of subtypes of Atisara and Pravahika which shows the features of bloody stool can be mainly categorized as causes related to food and food habits, environmental factors, psychological factors, lifestyle, iatrogenic causes and infection and infestations³¹⁻³⁶.

Above factors are considered as causative factors or aggravating factors of Ulcerative colitis though enough data is not available to prove it.

Table 1: Etiology of sub types of Atisara (diarrhea), sub type of Pravahika

Disease	Etiology			
	Caraka Samhita	Susruta Samhita	Ashtanga Hridaya	Ashtanga Samgraha
Pittatisara	Intake excessive sour, salty, pungent, alkaline, hot things, exposure to sun, fire, hot wind, psychological stress, anger	Intake of heavy, excessively fatty, rough, hot, liquid and solid, excessively cold, incompatible food, having food before digestion of previous, improperly cooked, drinking of contaminated water, defective wine, suppression of urges, excessive sporting in water, helminthes infestation	Drinking large quantities of water, eating meat of emaciated animals, intake of unaccustomed food, paste of sesame, germinated grains, wines, dry food, eating large quantity of food by hemorrhoid patients, improper oilation therapy, intestinal parasites, suppression of urges.	Drinking large quantity of water, eating meat of emaciated animals, intake of unaccustomed food, paste of sesame, germinated grains, wines, dry food, eating large quantity of food by hemorrhoid patients, improper oilation therapy, intestinal parasites, suppression of urges.
Raktatisara	Continuous intake pitta vitiating food by a Pittatisara patient	-	Intake of Pitta increasing diet by a Pittatisara patient	Intake of Pitta increasing diet by a Pittatisara patient.
Shoktapanna Atisara	-	Grief	Grief	Grief
Raktaja Pravahika	-	Having unwholesome diet	-	-

Food and food habits

Having food before digestion of previous meal, improperly cooked food, drinking large quantities of water causes vitiation of Agni (Metabolic fire) and Samana Vata then Apana Vata situated in Pakvashaya (colon). Eating a large quantity of food by a hemorrhoid patients leads to further Agni Mandya (decreased digestive fire) which is a main cause for occurrence of Atisara. Excessive intake of unwholesome foods and beverages especially excessive sour, salty, pungent, alkaline, hot, heavy, excessively fatty, rough, incompatible food, intake of unaccustomed food, have been described as etiological factors in Ayurveda texts and it can be correlated with concept of western diet¹⁶ which is considered as one of the etiology of Ulcerative colitis.

Environmental factors

Exposure to sun, fire, and hot wind are responsible for Vitiating of Pitta Dosha and leads to occurrence of Pittatisara (diarrhea caused by vitiation of Pitta) and then Raktatisara (bloody diarrhea) in chronic stage of Pittatisara. Environmental factors

have been considered as a causative factors in Ulcerative colitis also¹⁹.

Psychological factors

Psychological causes have been identified as causative factors of Atisara and emotional disturbances leads to vitiation of Vata and Pitta Dosha³⁷. Psychological stress and grief cause vitiation of Vata and anger causes the Pitta vitiation. Psychological factor is considered as one factor among contributing factors for occurrence of Ulcerative colitis¹⁸.

Lifestyle

Suppression of urges, cause vitiation of Apana Vata according to Ayurveda concepts.

Correlation of the part of disease onset

Acharya Charaka has mentioned the place where Atisara occurs is Purisashaya (colon) and it is the part of the intestine involve in Ulcerative colitis also³⁸.

Table 2: Places of onset of Atisara and Pravahika

Disease	Place of onset			
	CS	SS	AH	AS
Pittatisara	Purishashaya (colon)	-	Koshta	Koshta
Raktatisara	Purishashaya (colon)	-	-	-
Shokotpanna Atisara	-	Koshta	-	-
Raktaja Pravahika	-	-	-	-

Correlation of signs and symptoms ^{35,36,39,40}

Atisara is defined by Vijayarakshita as excessive passing of liquid stool which can be compared with one of the prominent feature seen in Ulcerative colitis patients. Purishashaya (colon) is described as the place where Atisara occurs and same in Ulcerative colitis. Involvement of rectum, bleeding, and abdominal pain can also correlate with other signs and symptoms of Ulcerative colitis. Hence, some sub types of Atisara can be correlated with Ulcerative colitis. Among these types, Pittatisara, Raktatisara and Shokotpanna Atisara shows bleeding with stool and can be correlated with a symptom of Ulcerative colitis which occurs due to ulcerations of colonic and rectal mucosa. Amount of blood is more in Raktatisara. Acharya Charaka, Susruta and Vagbhata described the color of stool of Pittatisara and Shokotpanna Atisara and other features such as Perspiration, thirst, fainting, fever, and colic pain in abdomen which can be correlated with complications of Ulcerative colitis occurs due to poor absorption of water and electrolytes due to mucosal destruction and shallow ulceration in mucosal surface. Involvement of rectum also mentioned in Pittatisara, Raktatisara and Shokotpanna Atisara which is considered as a main colonoscopic finding in Ulcerative colitis. Pravahika is defined as accumulated Kapha propels downward frequently mixed with small quantity of feces with tenesmus by aggravated Vayu. Patients having Raktaja Pravahika also show symptom of increased frequency of stool, but with small quantity. Pittatisara is comparatively acute stage rather a chronic disease. Hence,

Raktatisara is more accurate correlation of Ulcerative colitis and Shokotpanna Atisara can also consider due to its chronicity and difficult for management if it is associated with psychological origin.

According to the opinion of Charaka Samhita, Astanga Hridaya and Astanga Samgraha, Raktatisara occurs due to intake of Pitta vitiating food by a patients suffering from Pittatisara. So, Raktatisara can be considered as chronic stage of Pittatisara. Due to chronic nature and increased quantity of blood in stool in Raktatisara, it can be considered as active stage of Ulcerative colitis or chronic non- remittent colitis also. Here, Dosa Dusya Sannamurchana (interaction between Dosha and Dusya) occurs in Pakvasaya with evidence of Dhatu Vikruti with chronicity of disease. Extra intestinal manifestation can be described according to extend of Dhatu involvement in this disease.

Samprapti Ghataka (narration of pathogenesis) related with Ulcerative colitis

Nidana: Vitiating of Agni by internal and environmental causative factors.

Samprapti: Dosha- Vata, Pitta dominant Thridosha Dusya (involved tissue) - Rasa, Rakta

Srotas (channels): Purishavaha Srotas, Annava Srotas

Srotodushti- Atipravrtti

Agni- Jatharagni, Dhatvagni

Utbhavasthana (place involved) - Pakvashaya

Table 3: Signs and symptoms of Pittatisara, Raktatisara, Shokotpanna Atisara and Raktaja Pravahika

Disease	Signs and symptoms			
	Charaka Samhita	Susruta Samhita	Ashtanga Hridaya	Ashtanga Samgraha
Pittatisara	Passing stool as yellow, green blue, black Blood and pitta present Exceedingly foetid Thirst, burning sensation, sweating, fainting, colic pain, inflammation and suppuration in anus	Perspiration, thirst, fainting, burning sensation, inflammation, fever, passing forcefully, foul smelling, hot, resembling meat wash, loose in consistency, yellow, bloody stool	Passing yellow, black, turmeric like or green feces mixed with blood, foul smell, associated with thirst, fainting, perspiration, burning sensation, pain in abdomen, ulcerations of the rectum.	Passing yellow, black, turmeric like or green feces mixed with blood, foul smell, associated with thirst, fainting, perspiration, burning sensation, pain in abdomen, ulcerations of the rectum.
Raktatisara	Same as signs and symptoms of Pittatisara along with bloody diarrhea.	-	Bloody diarrhea, rectal ulcerations	Burning sensation, thirst, delusion, fever, colic and rectal ulcerations.
Shokotpanna Atisara	-	Passing blood (Gunja color) stool mixed with or without stool, with or without smell, with difficulty	Signs and symptoms of Vata and Pitta Atisara	Signs and symptoms of Vata and Pitta Atisara
Raktaja Pravahika	-	Passing bloody stool	-	-

Table 4: Comparison of signs and symptoms of Ulcerative colitis and Pittatisara, Raktatisara, Shokotpanna Atisara and Raktaja Pravahika

Signs and symptoms of Ulcerative colitis	Ayurveda			
	Pittatisara	Raktatisara	Shokotpanna Atisara	Raktaja Pravahika
Increased frequency of stool	++	++	++	+
Blood with feces	+	++	+	+
Mucous discharge	-	-	-	+
Urgency and tenesmus	-	-	-	+
Chronic nature	-	+	-	-
Loose consistency of stool	+	+	+	-
Abdominal pain	+	+	+	-
Involvement of rectal mucosa	+	+	-	-

MANAGEMENT OF ULCERATIVE COLITIS ACCORDING TO AYURVEDA PRINCIPLES

The basic principle to consider during treatment mentioned as Ama (indigested) or Pakva (digested) features of the patient⁴¹. Features of Ama Atisara are feces sinks down in water, having excessively foul smell. Patient passes stool frequently in small quantity⁴². Patients with opposite features should be known as Pakva Atisara. According to Acharya Susruta, all types of Atisara should be managed by light diet initially which can eliminate Ama from body. This should be carried out according to the strength of the patient.

Further, signs and symptoms of Ulcerative colitis can be compared with Vata Sthana Gata Pitta. So both Vata and Pitta should be considered during the treatment.

Agni Dipana (enhance digestive fire), Ama Pachana (digestion of indigested particles), Grahi (checks diarrhea), Stambhana (checks bleeding), Dhau Poshaka (nutrition supplement in tissue level), Sattvavajaya Cikitsa (Psychotherapy) treatments should be given according to the stage of disease.

During active stage of Ulcerative colitis

Ulcerative colitis can be categorized as mild, moderate and severe according to disease activity. Bleeding with stool with increased frequency are prominent clinical features during active disease. Features of Ama should be considered and Grahi drugs should be avoided in cases of Ama as it may cause Pliha (splenomegaly), Pandu (anemia), Anaha, Meha, Kusta (skin disease), Udara, jvara (fever), Sopha (edema), Gulma, Grahani, Arsha (piles), Shula (colic), Alasaka, Hrd Graha (Cardiac discomfort)⁴³.

Acharya Susruta has advised various kind of formulas contain Indrayava (*Holarrhena antidysenterica*), Ativisha (*Aconitum heterophyllum*), Patha (*Cissampelos pareita*), Guduchi (*Tinospora cordifolia*), Musta (*Cyperus rotundus*), Bilva (*Aegle marmelos*), Rakta Chandana (*Pterocarpus santalinus*) etc.

According to Sharma PV in his critical notes written for Susruta Samhita described the action of Tikta Rasa (Bitter taste) of those ingredients on Ama. He describes the basic elements of Vayu and Akasha of Tikta taste absorb watery substances of Kapha Dosha. Hence, digestive fire gets free from the covering of Kapha then Ama gets digested. Dipana drugs can be used in patients having Agnimandya (decreased appetite). Then, after getting rid of Ama and normal appetite is gained (Nirama stage) formulas which have the properties to check diarrhea (Grahi) can be used. Lodhradi, Ambabashadi, Priyangvadi, Nyagrodhadi, Pippalyadi groups can be used in this stage of Ulcerative colitis.

According to Acharya Susruta, Ambashtadi and Pippalyadi groups are helpful when profuse discharge of blood and mucous occurs that can be compared with active stage of Ulcerative colitis⁴⁴.

Many Sthambhaka (checks bleeding) formulas given in texts which can be used in this stage of Ulcerative colitis. Anuvasana Vasti (oil enema) and Piccha Vasti (slimy enema)⁴⁵ is useful in mild to moderate stage of the disease to check bleeding, diarrhea and abdominal pain. Enema should be used in mild to moderate disease when severe stage of Ulcerative colitis subside. Slimy enema can be used in proctitis also⁴⁶.

Ashtanga Hrdaya prescribed Putapaka (method of drug preparation in Ayurveda) for the patients having chronic bloody diarrhea without Ama or pain⁴⁷.

Goat milk has been prescribed by all texts and administration of animal blood also prescribed during severe anemic conditions. Intra venous blood transfusion is been practiced in modern medicine during severe anemia due to Ulcerative colitis.

Disease having long term remission stage

According to Riox K 18% patients show long term remission at five years and 10% at twenty five years during the course of disease⁴⁸.

During chronic stage of the disease when Vata gets dominant in Pakvashaya, Anuvasana Vasti (oily enema) is useful⁴⁹. Preparations of Ghrta (medicated ghee) can be used for these patients due to its Vatanulomana and Agni dipana properties. Milk after boiling with three parts of water has been recommended in Susruta samhita for chronic disease to eliminate residue⁵⁰.

For extra intestinal manifestations

According to Shad Kriya Kala (stages of pathogenesis), extra intestinal manifestation can be correlated with Bheda Avastha of pathogenesis of Ulcerative colitis. Extra intestinal manifestations occur due to vitiation of Dhatvagni in respective systems. As per observations during the treatment of patient's, extra intestinal manifestations disappear when active stage of the disease gets subsided with Ama Pachana and Agni deepana, Grahi treatments followed by Dhatvagni Pachana.

Patients should be assured with proper counseling in all the stages of the disease as Ulcerative colitis involves Manasikabhava (psychological factors) in its disease process. Harshana (Pleasing therapy) and Asvasana can be used along with Dravya chikitsa (administration of drug).

Intestinal microbiota dysbiosis can be corrected by probiotics which improve intestinal mucosal barrier function and immune system. It enhances the secretion of anti-inflammatory factors also⁵¹. Takra (Butter milk), an Ayurvedic probiotic is helpful to maintain microflora in gut in Ulcerative colitis.

Patya Apatya should also considered during treatment process.

Modern diagnostic parameters such as colonoscopic examination, histological findings, fecal and serological parameters can be used to assess the prognosis of the disease apart from clinical parameters.

CONCLUSION

Ayurveda treatments can be used for the treatment of Ulcerative colitis for better management and to provide better quality of life for the patient.

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Cite this article as:

Peshala K.K.V.S *et al.* Ayurveda approach for management of ulcerative colitis: A review. *Int. J. Res. Ayurveda Pharm.* 2019;10(1):21-26 <http://dx.doi.org/10.7897/2277-4343.10016>

Source of support: Nil, Conflict of interest: None Declared

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