Review Article

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AYURVEDA APPROACH FOR MANAGEMENT OF ULCERATIVE COLITIS: A REVIEW

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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 coelectomy 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.

EATOLOGY, 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-DR2, Chromosomes 1 and 4, ECM 1, CDH1, HNF4α, Laminin B1 genes which are responsible for mucosal barrier function 7 and abnormal immune response 8 are found to be susceptible for Ulcerative colitis, though further researches are necessary to prove it. Infection 9,10,11 dietary factors such as low fiber diet, mercury ingestion, refine sugar, corn flakes 11, smoking, breast feeding, oral contraceptive pills 12, appendectomy 13, western diet 14, left-handedness 17, depression 15, 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 mucus 5. 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 megacolon 22, fulminant colitis 26, carcinoma and dysplasia 27, colon perforation, massive hemorrhage, benign/malignant stricture, inflammatory polyposis and anorectal complications such as ischiorectal abscess, fistula in ano, fissure in ano 28 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, purpural skin lesions, leg ulcers, colitic arthritis, sacro-iliiitis, anklylosing spondylitis, episcleritis and iritis 29.

CORRELATION OF ULCERATIVE COLITIS WITH AYURVEDA CONCEPTS

Acharya Charaka used the word Mahasrotas for whole digestive system 30. 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 infestations 31-36.

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                        | Caraka Samhita                           | Susruta Samhita                      | Asthanga Hrdaya   | Asthanga 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 unacustomed 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 unacustomed 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 |
| Shokotpanna Atisara           | -                                        | 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 unacustomed food, have been described as etiological factors in Ayurveda texts and it can be correlated with concept of western diet 18 which is considered as one of the etiology of Ulcerative colitis.

Environmental factors

Exposure to sun, fire, and hot wind are responsible for Vitiation 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 also 19.

Psychological factors

Psychological causes have been identified as causative factors of Atisara and emotional disturbances leads to vitiation of Vata and Pitta Dosha 37. 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 colitis 19.

Lifestyle

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

Correlation of the part of disease onset

Acharya Chraka has mentioned the place where Atisara occurs is Purisashaya (colon) and it is the part of the intestine involve in Ulcerative colitis also 38.
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 Vījyāraṇaśīta 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 blooding 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 colonscopic finding in Ulcerative colitis. Pravahika is defined as accumulated Kapha propels downward frequently mixed with small quantity of feaces with tenesmus by aggravated Vāya. 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 Hṛdaya 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 Sammurchana (interaction between Dosha and Dushya) occurs in Pāvakasya with evidence of Dhatu Vikruti with chronicity of disease. Extra intestinal manifestation can be described according to extend of Dhatu involvement in this disease.

Table 3: Signs and symptoms of Pittatisara, Raktatisara, Shokotpannatisara and Raktja Pravahika

| Disease              | Charaka Samhita                                      | Susruta Samhita                                   | Ashtanga Hṛdaya                                   | Ashtanga Samgraha                                  |
|----------------------|-----------------------------------------------------|---------------------------------------------------|--------------------------------------------------|---------------------------------------------------|
| Pittatisara           | Passing stool as yellow, green blue, black          | Perspiration, thirst, sweating, burning sensation, inflammation, fever | Passing yellow, black, turmeric like or green feces mixed with blood, fowl smell, associated with thirst, feeling, perspiration, burning sensation, pain in abdomen, ulcerations of the rectum. | Passing yellow, black, turmeric like or green feces mixed with blood, fowl smell, associated with thirst, feeling, perspiration, burning sensation, pain in abdomen, ulcerations of the rectum. |
| Raktatisara           | Same as signs and symptoms of Pittatisara along with bloody diarrhoea. | -                                                  | Bloody diarrhoea, rectal ulcerations              | Burning sensation, thirst, delusion, fever, colic and rectal ulcerations. |
| Shokotpanna Atisara   | -                                                   | Passing blood (Ganja 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 Raktja Pravahika

| Signs and symptoms of Ulcerative colitis | 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 patient 41. Features of Ama Atisara are feces sinks down in water, having excessively foul smell. Patient passes stool frequently in small quantity 42. 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), Sattavavajaya 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 Plaha (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 kinds of formulas contain Indrayava (Holarrhena antidysenterica), Ativisha (Aconitum heterophyllum), Patha (Cissampelos pareita), Giuduchi (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 Doshha. 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. Lodhrami, Ambasbhati, Priyangadi, Nyagrodhadi, Pippalyadi groups can be used in this stage of Ulcerative colitis.

According to Acharya Susruta, Ambasbhati and Pippalyadi groups are helpful when profuse discharge of blood and mucus occurs that can be compared with active stage of Ulcerative colitis 44.

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 subsides. Slimy enema can be used in proctitis also 46.

Ashanta Hrdaya prescribed Putapaka (method of drug preparation in Ayurveda) for the patients having chronic bloody diarrhea without Ama or pain 47.

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 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 disease 48.

During chronic stage of the disease when Vata gets dominant in Pakbashaya, Anuvasana Vasti (oily enema) is useful 49. Preparations of Ghrita (medicated ghee) can be used for these patients due to its Vatastulomana and Agni dipana properties. Milk after boiling with three parts of water has been recommended in Susruta samhita for chronic disease to eliminate residue 50.

For extra intestinal manifestations

According to Shad Kriya Kala (stages of pathogenesis), extra intestinal manifestation can be correlated with Bheda Avashta of pathogenesis of Ulcerative colitis. Extra intestinal manifestations occur due to vitiation of Dhavagni 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 Dhavagni 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 chikithsa (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 also 51. Takra (Butter milk), an Ayurvedic probiotic is helpful to maintain microflora in gut in Ulcerative colitis.

Paty 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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