

ROLE OF AMA IN PATHOGENESIS OF ULCERATIVE COLITIS AND ITS MANAGEMENT

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ABSTRACT

Ulcerative colitis (UC) is a type of Inflammatory Bowel Disease (IBD), characterized by immune-mediated chronic recurrent inflammation of intestinal mucosa that usually involves rectum and may extent proximally to involve all the colonic segments. In UC there is an abnormal activation followed by lack of suppression of immune response to luminal contents, leading to chronic inflammation. In *Ayurveda*, *Ama* considered as toxin, resulting from improper digestion of food is considered as the root cause of all the diseases. Bad habits of eating along with other factors leads to Impaired digestive fire i.e. *Agni* leading to formation of *Ama*. This *Ama* being toxin, activates immune reaction initiating pathogenesis of Ulcerative colitis. Getting rid of *Ama* by treating and preventing its further formation breaks the pathogenesis of the ulcerative colitis and further progression of inflammatory process.

KEYWORDS: Ulcerative colitis, Inflammatory Bowel Disease, *Ama*, *Agni*, *Ama pachana*, *Nidan parivarjan*.

INTRODUCTION

Inflammatory bowel disease (IBD) is an immune-mediated chronic intestinal condition. Ulcerative colitis (UC) and Crohn's disease (CD) are the two major types of IBD.^[1] UC is a mucosal disease that usually involves the rectum and extends proximally to involve all or part of the colon. About 40-50% of patients have disease limited to the rectum and recto sigmoid, 30-40% have disease extending beyond the sigmoid but not involving the whole colon, and 20% have a pan colitis.^[2] Urban areas have a higher prevalence of IBD than rural areas, and high socioeconomic classes have a higher prevalence than lower socioeconomic classes.^[3]

Ama is considered as toxin formed by improper digestion of food material which is responsible for initiating all the disease processes in body.^[4]

MATERIALS AND METHODS

Variety of Literary work have been carefully examined, studied and filtered in accordance with the requirements. Modern medicine book like Harrison's Textbook of Internal Medicine and *Ayurvedic* books such as *Charaka Samhita*, *Sushruta Samhita* were taken into consideration. Many reference books and peer reviewed papers related to *Ama* and UC are also taken into consideration.

Review Of Literature

The major symptoms UC are diarrhea with rectal bleeding, tenesmus, passage of mucus, and crampy abdominal pain. The severity of symptoms correlates with the extent of disease.^[5]

In *Ayurveda* Acharya has mentioned *Ama* as root cause of all the diseases.^[6] *Ama* is toxin formed as a result of improper digestion of food material because of *Agni dushti* i.e. digestive fire. Inappropriate eating habits such as *Abhojana* (Fasting), *Ajirna* (indigestion), *Atibhojana* (excessive eating), *Vishamashana* (eating quantitatively excess or low), *Asatmya-Guru-Shita-Ruksha-dushta Bhojana* (unsuitable-heavy-cold-dry-vicious food), *Virechana-vamana-sneha vibhrama* (inappropriate *Panchakarm* therapy), *vyadhi's* leading to *Karshana* (lean mass), *Desh-Kal Vaishamy* (diet opposite to territory and season), *Vegvidharana* (suppressing urges) contribute to *Agni dushti* (Impairment of Digestive fire)^[7]

Diets high in animal protein, sugars, sweets, oils, fish and shellfish, and dietary fat, especially w-6 fatty acids, and low in w-3 fatty acids have been implicated in increasing the risk of IBD.^[8] This factors mentioned are nothing but contributors to *Agni dushti* and *Ama* formation

Agni dusthi i.e. Impaired digestive fire results in improper digestion of food leading to production of *Apakva aahar-ras* (incompletely/improper digested food) which is known as *Ama*. This *Apakva aahar rasa* or *Aama* is not readily absorbed from intestine and leads to *Shuktatva* (putrid) which acts like *Visha* (poison). This *Ama* when mixed with bodily elements like *Dosha*, *Dushya* and *Mala* leads to *Saamdosha*, *Saamadushya*, *Saamamala*, which leads to disturbed bodily elements responsible for many diseases.^[9] *Ama* therefore is cause of all diseases.

Under physiologic conditions, homeostasis normally exists between the commensal microbiota, epithelial cells that line the interior of the intestine (intestinal epithelial cells [IECs]), and immune cells within the tissues. In IBD, the Tri-directional relationship between the commensal flora (microbiota), intestinal epithelial cells (IECs), and mucosal immune system is dysregulated, leading to chronic inflammation. Each of these three factors is affected by genetic and environmental factors that determine risk for the disease.^[10]

Ama disturbs this homeostatis and contributes to pathogenesis of ulcerative colitis in following ways.

1. *Ama* being toxin is harmful for normal commensal flora, leading its disturbance.
2. *Ama* acts as antigen, leading to activation of immune system in colonic mucosa initiating inflammation cascade.
3. Thus started inflammations cascade damages intestinal epithelial cells.
4. Immune rection that shall be normally suppressed after time, continues its action because of continuous formation of *Ama*.
5. *Saampurisha*(toxic feaces), one of the *Saamamala*(toxic waste), formed due to *Ama* has features like *guru-durgandhit mala*(heavy-fetor smelling feaces), *Prabhutata*(increased quantity), *Shithilata*(loose stool) and *Dravata*(liquidity),^[11] which inturn are amongst the symptoms of UC.

Management

Taking this in consideration management of UC should focus primarily on treating *Ama* that will break the pathogenesis of UC.

1. *Nidan parivarjan* i.e. avoidance of causative factors that leads to *Ama* formation e.g. Avoiding heavy meals(quantitatively and qualitatively), overeating, too much liquid diet etc.
2. *Agni deepan* i.e. provoking digestive fire for proper digestion of food materials

3. *Ama pachana*^[12] i.e. getting rid of already formed *Ama* by using herbs like *Pippali*, Dried ginger, *Vidanga*

DISCUSSION

Ulcerative colitis is chronic recurrent inflammation of colonic mucosa. it has relapsing and remittent course. The cause of UC is unknown, but several theories put forwarded suggests causes such as infective, nutritional, psychosomatic and immunological. Diets high in animal protein, sugars, sweets, oils, fish and shellfish, and dietary fat, especially w-6 fatty acids, and low in w-3 fatty acids have been implicated in increasing the risk of IBD. This factors mentioned are nothing but contributors to *Agni dushti* and *Ama* formation. This *Ama* when combined with type of *Mala* i.e. *Purisha* leads to *Samapurisha* which has properties similar to feaces found in Ulcerative colitis. Also *Ama* acts as toxin presenting itself as antigen to colonic mucosa initiating improper inflammatory cascade leading to chronic inflammation.

Taking this in consideration inhibiting formation of *Ama* and clearing already formed *Ama* by *Nidan parivarjana* and *Ama pachana* will break the pathogenesis of UC followed by stoppage of inflammatory cascade.

CONCLUSION

Improper dietary habits leads improper *Jatharagni* leading to *Ama* formation. This *Ama* initiates many pathologic events in colonic mucosa leading to Ulcerative colitis. Avoidance of food materials and bad dietary practices with *Agni deepan* can stop *Ama* formation. This along with *Ama pachan* therapy can help to interrupt pathogenesis of UC breaking Inflammatory cascade, avoiding further disease process.

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