



INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES

Published by JK Welfare & Pharmascope Foundation

Journal Home Page: www.pharmascope.org/ijrps

Critical Review of Raktatisara vis-a-vis Ulcerative Colitis

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Article History:

Received on: 05 Jan 2021

Revised on: 05 Feb 2021

Accepted on: 08 Feb 2021

Keywords:

Ahara,
Faculty Lifestyle,
Relapse,
Pathogenesis,
Psychological Factors,
Vihara

ABSTRACT

Many studies have been conducted for the role of *Ahara* (~dietary habits), *Vihara* (~abnormal Physical activity) and *Manas* (~Psychological factors) and their association with pathogenesis of Ulcerative colitis, which is a subtype of inflammatory bowel disease, which pursue a protracted relapsing and remitting course, usually extending over years. The causes of relapsing of ulcerative colitis are not known. Dietary factors have been associated in the pathogenesis of ulcerative colitis as well as associated with an increased risk of relapse of ulcerative colitis. Here, we have reviewed the probable mechanisms of the role of diet and its association with pathogenesis of Ulcerative colitis (UC). In *Ayurveda*, on the basis of signs and symptoms ulcerative colitis can be best compared with *Raktatisara*. This article is an attempt to do critical review and put a light on the role of diet, faulty lifestyle and Psychological factors in occurrence and progression of Ulcerative colitis (UC), and try to explain Etiopathogenesis of *Raktatisara* in relation to ulcerative colitis by going through Ayurvedic texts, Google Scholar, PubMed journals etc.



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ISSN: 0975-7538

DOI: <https://doi.org/10.26452/ijrps.v12i2.4616>

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INTRODUCTION

Ulcerative colitis is a subtype of inflammatory bowel disease with unknown etiology inflammatory disease that affects the colon and is best characterized by relapse and remission mucosal inflammation (Ungaro *et al.*, 2017) Ulcerative Colitis (UC) is an inflammatory bowel disease, which can persist for years. Incidences of ulcerative colitis are increasing at an alarming rate due to erroneous dietary

habits and faulty lifestyle (Jowett, 2004). Studies reported that prevalence rate of ulcerative colitis is 44.3 per 100000 inhabitants in Punjab and in other parts of North India, which is not much less than that reported from Europe and North America (Sood, 2003). UC causes rectal bleeding and mucus discharge, sometimes accompanied by tenesmus. In severe cases; anorexia, malaise, weight loss and abdominal pain occur, and the patient becomes toxic with fever, tachycardia and signs of peritoneal inflammation (Nicolas, 2006). The prevalence of age of onset of UC is mainly between 15 and 30 years and second peak prevalence occurs between the age of 60 and 80 years. The male to female ratio for ulcerative colitis is 1:1.4 The prevalence of UC is increasing at an alarming rate and allopathic line of treatment including administration of steroids in the form of oral high dose of prednisolone and enemas etc. is not proved to be effective in the management and puts a huge burden on the health of the patient (Lennard-Jones *et al.*, 1965). It possesses a big challenge for medical health professionals

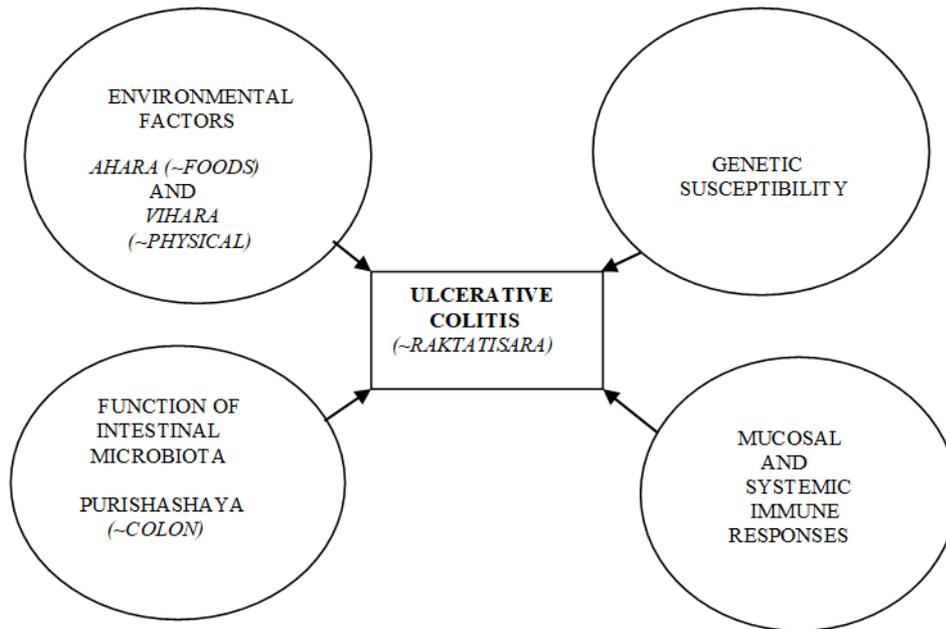


Figure 1: The most suitable theory for the etiology of Ulcerative colitis involves a complex interaction between gastrointestinal microbiota, genetic susceptibility, environmental factors, and mucosal or more generalized abnormal immune responses

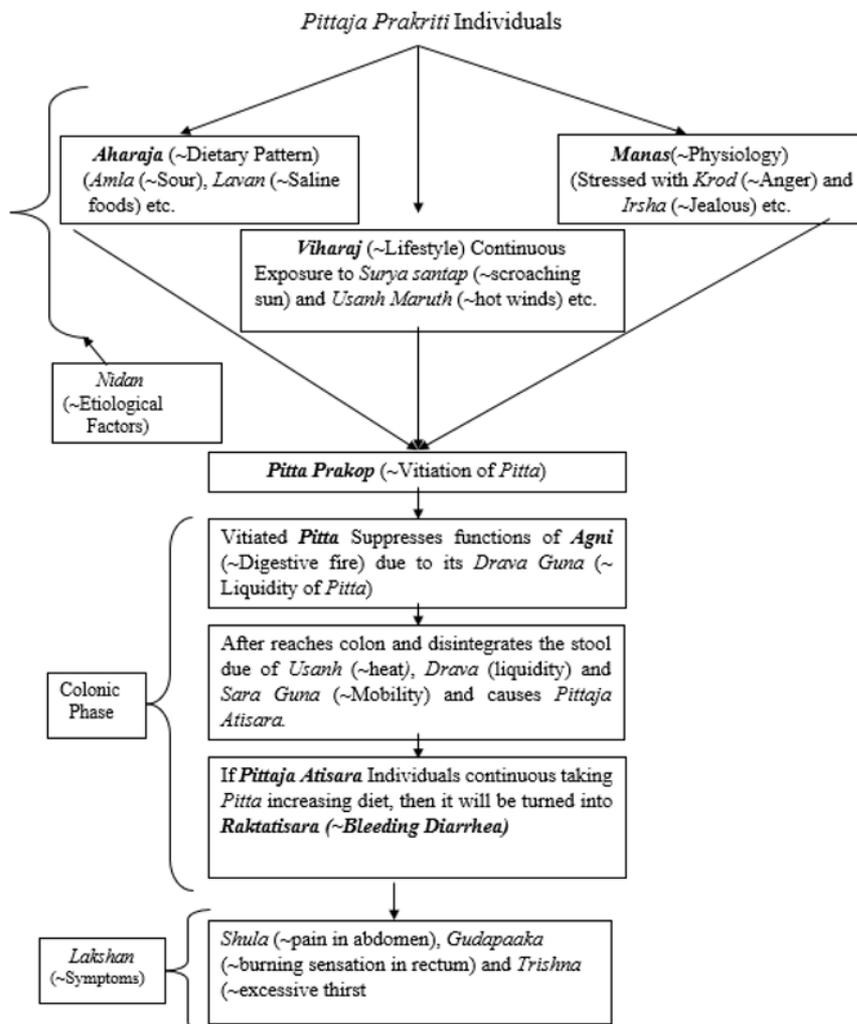


Figure 2: Etiopathogenesis of Raktatisara (~hemorrhagic Diarrhoea) Vis-a-Vis Ulcerative colitis

due to its high morbidity and mortality. Ayurveda described *Raktatisara* (~haemorrhagic diarrhoea), which has symptoms similar to ulcerative colitis i.e. *Shula* (~pain in abdomen), *Gudapaaka* (~burning sensation in rectum) and *Trishna* (~excessive thirst) (Shukla and Tripathi, 2002a).

Etiopathogenesis of Ulcerative Colitis

Ulcerative colitis is a disease with several origin. Involvement of environmental and genetic factors are being considered as causative factors but exact cause is not known of Ulcerative colitis. Several Genes, environmental factors as well as microbiota dysbiosis resulted into dysregulated or abnormal immune response is the probable and closest pathophysiology of the Ulcerative Colitis (Satsangi et al., 1997). The term “dysbiosis” indicating both reduced diversity as well as an imbalance within intestinal microbiota but at present lacks strict definition. Ulcerative colitis is more common in non-smokers and ex-smokers and HLA-DR103 associated with severe ulcerative colitis (Nicolas et al., 2006a). Linkage of chromosomes 1 and 4 (Rutgeerts and Geboes, 2001), CDH1, ECM 1, HNF 4 α and Laminin B1genes which participate and responsible for intestinal mucosal barrier function (Thompson and Lees, 2011), low fiber diet are dietary factors that are responsible for occurrence of Ulcerative colitis. The most suitable etiology of Ulcerative colitis is depicted in Figure 1. In Ancient System of Indian medicine etiological factors elaborated in *Charaka Samhita* for the pathogenesis of *Raktatisara* is having much resemblance with those depicted in Figure 1. Like Environmental factors may be understand as *Ahara* (~foods) and *Vihara* (~Physical Activity) as described in Figure 2 (Shukla and Tripathi, 2002b,a). *Purishashaya* (~colon) is mentioned as the place where *Raktatisara* (~bleeding diarrhoea) occurs and same in Ulcerative colitis where changes in function of intestinal Microbiotata resulted into occurrence of Ulcerative colitis. (Sartor, 2006)

Etiopathogenesis of Raktatisara in Ayurveda

In Ayurveda, the ancient system of India medicine, is mainly based on the concept of three major constitutional types (*Vata*, *Pitta* and *Kapha*) which is known as *Prakriti* (Govindaraj et al., 2015). In *Charaka Samhita* erroneous dietary pattern, faulty lifestyle and psychological factors along with suppression of *Agni* (~Digestive fire) are mentioned as root cause of *Pittatisara* which in chronic stage manifest as *Raktatisara* (Shukla and Tripathi, 2002a,b), it is described that if *Pittaja Prakriti* individuals having habits of taking *Ahara* (~foods) like *Amla* (~sour), *Lavan* (~saline) substances in excess;

Vihara (~lifestyles) where human body having constant direct exposure to *Suryasantap* (~Scroaching sun) and *UsanhMaruth* (~hot winds) at the same time also having psychological stress with *Krodh* (~anger) and *Irsha* (~Jealous) all these etiological factors causes aggravation of *Pitta* which causes Suppression of *Agni* (~digestive fire) due to *Dravaguna* (~liquidity) of *Pitta* and after reaching the colon it causes break up of *Purish* (stool) because of *Usanh* (~heat), *Drava* (~liquidity) and *Sara* (~mobility) and causes *Pittaja Atisara* as showed in Figure 1 (Shukla and Tripathi, 2002c).

In *Charaka Samhita Pittatisara* patients passes stool of different colours like green, blue, yellow, black and associated with *Rakta* and *pitta* (~stool with blood and mucus) and smelling extremely unpleasant (Shukla and Tripathi, 2002b). If *PittajaAtisara* Patient not following *Kriya muktva* (~treatment and precautions) (Shukla and Tripathi, 2002c) and continues to take *pitta* aggravation *Ahara* (~ foods and drinks) which further aggravates *Pitta* this resulted into aggravating *Rakta dhatu* (~blood) which manifested as *Raktatisara* (~bleeding diarrhoea) (Shukla and Tripathi, 2002a). In *Ayurveda* the pathogenesis of *Raktatisara* (~ haemorrhagic diarrhoea) may be understand as explained Figure 2.

DISCUSSION

The major symptom of ulcerative colitis is bloody diarrhoea, emotional stress is also play a provoking role in relapse (Nicolas et al., 2006b). In Ancient system of Indian medicine, *Raktatisara* is also having symptom blood in the stool. Psychological stress with *Krodh* (~anger) and *Irsha* (~Jealousy) (Shukla and Tripathi, 2002b) is main cause of *Pittatisara* which later on turned in *Raktatisara* (~bleeding diarrhoea). The course of Ulcerative colitis is variable but majority of Ulcerative colitis patients follow a relapsing and remitting course (Langholz et al., 1994). Dietary factors have been implicated in pathogenesis and relapse of Ulcerative Colitis. Multiple studies (Geerling et al., 2000) have been done to examined role of dietary factors in relation to onset of Ulcerative colitis but none have systematic approach to examine the relationship between dietary intake and relapses of Ulcerative colitis.

Ulcerative colitis is known to be associated with major morbidity in Western countries, and its incidence is increasing at an alarming rate in developing countries (Ramos and Papadakis, 2019). In *Ayurveda*, it has been suggested that dietary habits (Shukla and Tripathi, 2002b) causes suppressing of Digestive fire which resulted in *Raktatisara*.

Brown et al. also suggested diet-induced changes in microbiota may causes healthy microbiota into disease induced entity that could easily perpetuate inflammation in patients (Brown et al., 2012). Western diet (Persson et al., 1992) can be act as etiology for UC. Many review articles have focused on relationship between Stress and Inflammatory bowel disease (Keefer et al., 2008). In *Charaka Samhita* role of Psychological factors i.e. stress, anger is also explained in *Pittatisara* which in chronic stage manifested as *Raktatisara* (Shukla and Tripathi, 2002b,a). In Indian system of medicine manuscripts like *Sushruta Samhita* described *Pittatisara* patients as having *lakshan* (~symptoms) like *Trishna* (~thirst), *Murcha* (~Fainting), *Jwara* (~Fever) *Guda paka* (~Ulceration in the rectum) (Sharma, 2008).

CONCLUSIONS

Ulcerative colitis is a chronic inflammatory bowel disease, whose aetiology is unknown. The dietary habits of the patient i.e. frequent consumption of spicy, oily, junk food may be a predisposing factor of Ulcerative colitis. Many studies indicate that psychological factors play a role in the Etiopathogenesis of Ulcerative colitis. To establish Etiopathogenesis, signs and symptoms of *Raktatisara* (~bleeding Diarrhoea) and Contribution of Diet habits, faulty lifestyle and psychological role as predisposing factors requires further study.

Funding Support

The authors declare that they have no funding support for this study.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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