

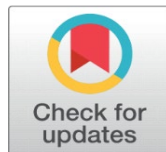
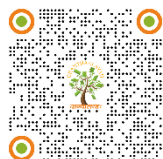
A COMBINATION REVIEW ON EFFECT OF CITRUS JUICE AND METRONIDAZOLE IN INFLAMMATORY BOWEL DISEASE

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Received 29 June 2023

Accepted 30 July 2023

Published 14 August 2023

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DOI

[10.29121/granthaalayah.v11.i7.2023.5256](https://doi.org/10.29121/granthaalayah.v11.i7.2023.5256)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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ABSTRACT

The set of inflammatory disorder known's as inflammatory bowel disease (IBD) affects the gastrointestinal tract and is chronic and complicated condition. Both Crohn's disease and ulcerative colitis, the two main types of inflammatory bowel disease, cause inflammation in the digestive system. Chron's disease can affect any part of the gastrointestinal tract, while ulcerative colitis only affects the colon and rectum. They induce the inflammatory symptoms of swelling, discomfort, an increase in body temperature, redness, and itching. The diagnosis of inflammatory bowel disease requires a careful examination of the patient's medical history, a physical examination, and other tests. Blood tests, imaging scans, and occasionally biopsies. The goal of treatment is to reduce inflammation and symptoms, usually with a combination medication, dietary modification, and occasionally surgical intervention. IBD cannot be cured, however improvements in medical therapy have greatly enhanced patient outcome and care. To effectively manage IBD and improve the quality of life for patients suffering from this difficult condition, regular medical checkup and adherence to treatment plans are essential. The best IBD management and patients well- being depends critically on early detection, prompt intervention and continued support from healthcare provides. Metronidazole and mesalamine drugs are used as different dose in the treatment of IBD inflammation. Some condition citrus juice also used as a treatment because they help in the immune power.

Keywords: Metronidazole, Mesalamine, Citrus Juice, Inflammation, IBD, Ulcerative Colitis, Crohn's

1. INTRODUCTION

Inflammatory Bowel Disease is a type of chronic inflammation in which they reduce to capacity of body internal function. Genetic research on inflammatory bowel disease has underlined the importance of genetic predisposition and its likely interaction with other mediators, such as environmental, immunological, and microbial activity. A sizable body of research has recently accumulated on the relationship between psychological health and inflammatory bowel disease (IBD),

showing that sufferers are more likely to feel despair, stress, and anxiety, especially during the disease's active stage. To understand the links between psychological characteristics and IBD activity, both qualitative and quantitative research are still needed because psychological suffering is a crucial component of chronic illnesses. IBD are characterized by dysbiosis, a breakdown of regulatory restraint and persistent immune activity in the gut. However, it is unclear if immunological activation results from dysbiosis. The substantial correlation between a maladaptive autonomic reactivity and the onset and symptoms of different chronic illnesses has suggested possible links between the ANS and IBD disease activity. Research examining the role of vulnerabilities and individual differences of IBD patients must include longitudinal assessments of biological and psychological factors and their temporal trajectory (including in remission and relapse) in order to characterize the risk factors and interdependence of these critical factors in the progression of the disease. The number of risk factors addressed in earlier research was constrained, or longitudinal study of these risk factors as they affected IBD disease activity was lacking. Boyce, E. G., Cookson, E. T., & Bond, W. S. (1990), Chand, N., & Sanyal, A. J. (2007), Groothoff, M. V., Hofmeijer, J., Sikma, M. A., & Meulenbelt, J. (2010)

2. ANTIBIOTICS' FUNCTION IN CROHN'S DISEASE

A common antibiotic used to treat a variety of disease brought on by certain parasites and anaerobic bacteria is metronidazole. Even though treating inflammatory bowel disease is not its primary purpose, it has occasionally been utilised as an adjuvant therapy in specific circumstance. IBD stands for inflammatory bowel disease, of which the two most prevalent kinds are chron's disease and ulcerative colitis. The same as bacteria, viruses, and fungi, they contribute to reducing inflammation. Growing research suggests that both CD and UC are significantly influenced by the gut flora. When provided for active luminal illness, epically affecting the colon, treatment with metronidazole, with or without ciprofloxacin, and with rifaximin may result in a moderate benefit for CD patients. They include the anti-inflammatory activity, antibacterial activity, and immune modulators, antipyratic activity and decrease the inflammation. Han, D. S. (2014), Harper, C. G., Giles, M., & Finlay-Jones, R. (1986), Idkaidek, N. M., & Najib, N. M. (2000)

Effect of Metronidazole VS Mesalamine in Inflammatory Bowel Disease

Mesalamine is also called as 5- Amino salicylic acid (5-ASA). It is used in the diagnosis of ulcerative colitis and other inflammation. The type and formulation of medicine that is suggested for UC patients depends on the location of the disease as well as how severe it is. While some patients only have rectal inflammation, others who are afflicted have severe colonic sickness that involves a sizable area of the colon. For those whose condition is limited to the left colon, topical therapy should be used first, and oral medicine should be added for more severe cases. For active distal illnesses, the US and European professional organisations recommend topical therapy with mesalamine and hydrocortisone. When the disease has spread past the left colon, patients will need to take oral mesalamine or sulfasalazine. Kim, D. H., Cheon, J. H., Park, J. J., Yoon, J. Y., Moon, C. M., Hong, S. P., Kim, T. I., & Kim, W. H. (2013), Kim, E., Na, D. G., Kim, E. Y., Kim, J. H., Son, K. R., & Chang, K. H. (2007), Kim, J. M. (2014)

Mesalamine has a good safety profile, is safe and effective in the onset and maintenance of remission in mild to moderate UC, and has been proven to enhance QC and stimulate mucosal repair in clinical studies. Mesalamine has the potential to

be an effective chemoprophylaxis tool against CRC, although there is currently conflicting evidence to support this claim. A safe and effective anti-inflammatory drug is mesalamine. If patients really take the medication as prescribed, it can enhance mucosal healing, which should reduce the long-term risk of hospitalisation, the need for a colectomy, and the risk of CRC. Five mesalamine formulations that are currently FDA-approved and have equivalent efficacy and safety have replaced the market's previous single market leader in the USA. These marketing representatives have focused on issues like patient adherence and convenience, which formerly were not significant in mesalamine outcome. Kuriyama, A., Jackson, J. L., Doi, A., & Kamiya, T. (2011)

An effective antibiotic for treating anaerobic bacterial infections is metronidazole. The USA's previous market leader has been supplanted by five mesalamine formulations that are FDA-approved and have comparable efficacy and safety. These marketing representatives have concentrated on concerns that were previously unimportant to mesalamine result, such as patient adherence and convenience.

Role of Citrus Juice in Inflammatory Bowel Juice

Some elements of fruits juice can both benefits and make the condition worse, the role of fruits juices in condition of IBD is a subject that needs serious deliberation. Individual reactions to fruits juice can differ, so it's important to keep that in mind. Lamp, K. C., Freeman, C. D., Klutman, N. E., & Lacy, M. K. (1999), Löfmark, S., Edlund, C., & Nord, C. E. (2010), Manafi A, Panjehshahin MR, Saravi MG, Emami SA, Forootan SK. (2007)

Whole fruits are recognized as an appropriate source of fibres, with low to moderate level of energy density. Additionally, fruits contain significant phytochemicals and micronutrients that may have a variety of beneficial health impacts when combined. Dietary fibres are polymers of edible carbohydrates with three or more monomeric unit that are resistant to gut digestive enzymes and, as a result they are not absorbed in the upper gastrointestinal system. Cereals, fruits, and vegetables are the principal food source of these polymers. It has been noted that plant-based dietary fibre and phytochemical may interact with the inflammation with benefits effects. Fruits fibres are crucial for their prebiotic effects on the gut, which include the development of helpful bacterial species and the encouragement of a diverse and healthy micro biome. Manzo, G., De Gennaro, A., Cozzolino, A., Serino, A., Fenza, G., & Manto, A. (2014), Patel, K., Green-Hopkins, I., Lu, S., & Tunkel, A. R. (2008), Prantera C, Zannoni F, Scribano ML, et al. (1996)

Numerous research have looked at the possible health advantages of plant foods, such as their dietary fibres and phytochemicals' effects on inflammatory bowel disease. It has been suggested that the gut microbiota and inflammatory illnesses including inflammatory bowel disease, are linked. It has been shown that many causes, such as the rise in proteobacteria and fall in the food. Patients of inflammatory bowel disease have also shown a decrease in these metabolites as well as the anti-inflammatory benefits of SCFAs. Dietary phytochemical advantageous traits are related to their capacity to influence various physiological systems.

Some Juice Include

Purple carrot juice: - It is help to reducing intestinal inflammation brought on by colitis. Alpha and beta carotene, two types of vitamin A that are abundant in purple carrots and have been shown in various studies to promote mucosal healing.

Orange Juice: - Many studies showed that the orange juice may help ulcerative colitis by reducing inflammation action.

Cabbage: - Vitamins C, A, K are present in cabbage juice. According to research, vitamin K may be beneficial for treating intestinal disorders including ulcerative colitis. This vitamin enhances intestinal function, reduces inflammation and promotes the gut microbiota. It has also shown a correlation between a vitamin K deficit and an exaggerated inflammatory response, making it crucial for people with ulcerative colitis to get enough of this vitamin,

Apple juice: - It is playing an important role in improvement of immune power. Mostly apple juice shows anti-inflammatory effect on mice.

Important Benefits of Fruits Juice in Inflammatory Bowel Disease

The digestive system may become inflamed and harmed as a result of IBD, which encompasses illnesses including Crohn's disease and ulcerative colitis. IBD cannot be cured by food alone, although it can help manage symptoms and improve gut health in general. Fruit juices can assist people with IBD in a number of ways if they're consumed in moderation as part of a healthy diet. Among these advantages are:

Anti-inflammatory properties: - Certain fruits juice shown their anti-inflammatory properties and gives some benefits without any side effects.

Fruit juices are a fantastic source of antioxidants, vitamins, and minerals that are crucial for overall health and that can strengthen the immune system.

Staying hydrated is important for people with IBD because dehydration can result from diarrhea and inflammation. Fruit juices can help people stay hydrated by adding to their fluid consumption.

Natural sugars: Fruits are a good source of rapid energy because they include natural sugars, which don't exacerbate inflammation the way other processed sugars could.

Fiber content (in some juices): Even though people with active IBD may need to stay away from high-fiber meals when their symptoms are at their worst, some fruit juices can still offer a negligible amount of soluble fiber, which is good for gut health when the condition is in remission.

Some fruit drinks, including aloe vera juice, have historically been employed for its conceivable gastrointestinal calming characteristics, which may offer some help during times of inflammation.

Caloric intake: People with active IBD flare-ups may have diminished appetites and lose weight. Fruit juices can provide calories and nutrients in the diet in a more palatable manner. Seok, J. I., Yi, H., Song, Y. M., & Lee, W. Y. (2003), Shin, I. S., Seok, H., Eun, Y. H., Lee, Y., Lee, S., Kim, E. R., Chang, D. K., Kim, Y., & Hong, S. N. (2016), Yamamoto, T., Abe, K., Anjiki, H., Ishii, T., & Kuyama, Y. (2012)

3. CONCLUSION

Citrus juice in combination with metronidazole as a therapeutic strategy for inflammatory bowel disease (IBD) may have potential advantages, according to a combo evaluation on the impact of IBD and metronidazole. The synergistic effects of these two therapies and their impact on the symptoms and overall management of the condition were probably examined in the review.

Enhanced therapeutic effects: The review may have indicated that the addition of citrus juice to metronidazole had a more substantial effect than metronidazole alone on lowering inflammation and symptom relief. In addition to metronidazole's anti-inflammatory effects, citrus juice may also have extra anti-inflammatory benefits.

Better digestive health: The review may imply that the combination therapy improves digestive health by fostering the gut bacteria.

Citrus juice, a natural and pleasant addition, may help patients follow more closely to their treatment regimens. The long-term management of IBD may benefit notably from this, as patient compliance is crucial for positive results.

Further study is necessary: It is important to remember that this decision is most likely based on the information available at the time of the evaluation. To fully establish the effectiveness and safety of this combination medication, more research, such as randomized controlled trials and longitudinal studies, is required.

Individualized treatment strategies: IBD treatment plans should be customised to each patient's unique condition and medical history, just like with any other medical intervention. any therapy that combines other drugs with citrus juice.

Citrus juice and metronidazole taken together, according to the combined review's findings, may be effective for treating inflammatory bowel disease. However, it is crucial to interpret these results with caution and take them into account as a part of a more comprehensive approach to treating IBD. The potential advantages and safety of this combination medication for the treatment of IBD will be further investigated in subsequent studies.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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