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Comprehensive review of nutritional strategies for patients with ulcerative colitis reported in worldwide articles between 2019 and 2024: A literature review

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Abstract

Objective: To review and analyze scientific evidence on dietary strategies used in patients with ulcerative colitis between 2019 and 2024, focusing on their effectiveness, clinical impact, and adaptability to the Colombian population.

Design: Comprehensive literature review of publications indexed in PubMed, Scielo, Redalyc, Plos One, and Elsevier, following evidence-based medicine criteria and PRISMA guidelines.

Eligibility Criteria: Inclusion of studies published between 2019–2024, open-access, in English or Spanish, with adult patients (18–56 years) diagnosed with ulcerative colitis confirmed by endoscopy or histopathology. Excluded were case reports, incomplete follow-ups, and studies without dietary intervention assessment.

Information Sources: Scientific databases PubMed, Scielo, Redalyc, Plos One, and Elsevier using Boolean combinations of descriptors related to "ulcerative colitis," "nutrition," "inflammatory bowel disease," and "diet."

Results: Twenty-one studies met the inclusion criteria. The Mediterranean, low-FODMAP, and autoimmune diets were identified as the most effective. Each showed benefits in symptom control, microbial balance, and inflammatory marker reduction. Adaptations for Latin American populations are feasible through local food substitutions.

Conclusions: Diet plays a fundamental role in ulcerative colitis management. Personalized nutritional approaches based on the Mediterranean, low-FODMAP, or autoimmune diet can complement pharmacological treatment, improving clinical outcomes and quality of life.

Keywords: Ulcerative colitis; Inflammatory bowel disease; Nutritional strategies; Nutritional guide

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1. Introduction

Inflammatory bowel disease (IBD) encompasses two main clinical entities: Crohn's disease (CD) and ulcerative colitis (UC), both characterized by a chronic inflammatory process of the gastrointestinal tract, particularly in the distal region of the intestine, where the highest concentration of microbiota is found (1). This study provides a comprehensive review of the role that nutritional strategies play in the management of UC, a disease whose etiology remains unclear, though it has been linked to environmental, genetic, and lifestyle factors, such as smoking, diet, socioeconomic status, and geographic location (1).

Beyond its multifactorial origin, UC shares common inflammatory mechanisms with processes such as aging, including the action of pro-inflammatory cytokines, oxidative stress, mitochondrial dysfunction, and intestinal dysbiosis. Understanding these mechanisms is essential to identify dietary interventions that not only alleviate symptoms but also contribute to a more comprehensive and personalized management of the disease (2). Clinically, UC typically presents an intermittent course, with alternating periods of remission and relapse, and symptoms such as bloody diarrhea, fecal urgency, and rectal tenesmus (2).

From an epidemiological perspective, UC is currently the most prevalent form of IBD worldwide. While CD shows a higher incidence in North America (20.2 per 100,000 person-years), UC is more frequent in Europe (24.3 per 100,000 person-years) (3). In Spain, recent data reveal a growing incidence, particularly among women aged 45–54 and men aged 55–64, with variations across sex and age groups. In Colombia, the prevalence is 113 per 100,000 inhabitants, with a female predominance (69%) (4). However, there is a notable lack of local research, especially in regions such as Neiva, which limits the development of regionally adapted therapeutic guidelines (4).

Multiple studies have demonstrated the direct influence of diet on the onset and progression of IBD. The EPIC study (European Prospective Investigation into Cancer and Nutrition) found that a high fiber intake reduces IBD risk by 40%, while frequent consumption of fruits and vegetables is also associated with significant protection. In contrast, diets high in red and processed meats can increase risk by up to 70% (1). These findings highlight the importance of identifying effective dietary approaches that can be integrated into UC management.

The Food and Agriculture Organization (FAO) has also warned of the rising incidence of IBD associated with the excessive consumption of ultra-processed foods, which often contain additives such as sweeteners and preservatives that may disrupt intestinal function and promote inflammation. Evidence suggests that individuals consuming large amounts of red meat and fats, particularly omega-6 fatty acids, have an increased risk of developing UC. Conversely, those following a diet rich in fiber, fruits, and vegetables show a significantly lower risk (5).

In light of these findings, it is essential not only to examine the scientific literature to determine which nutritional strategies are most effective but also to analyze their differences and similarities, in order to develop evidence-based dietary recommendations. Such approaches can help tailor nutrition to individual patient needs, improve gut health, reduce symptoms, and prevent inflammatory relapses. Currently, dietary approaches such as the low-FODMAP diet, specific carbohydrate diet (SCD), anti-inflammatory diet, and Mediterranean diet have demonstrated notable benefits, both in symptom management and in reducing inflammation (6).

Nevertheless, within the Colombian context, several challenges persist in implementing these strategies, including the lack of standardized guidelines, limited access to nutrition professionals, inequalities in access to healthy foods, and insufficient nutritional education. Overcoming these barriers is crucial to strengthen clinical management and improve the quality of life of individuals living with ulcerative colitis

2. Methodology

The comprehensive review of the literature began in August 2024, where an exhaustive bibliographic search was carried out in the databases PubMed, Scielo, Redalyc, Plos One, and Elsevier. The search was conducted using the following keywords: colitis, ulcerative, diet, nutrition, inflammatory bowel disease, and nutrient absorption. Once the keywords were chosen, the level of Boolean combination was defined for a more effective search, selecting the descriptors Colitis, Ulcerative, Nutrition, Inflammatory Bowel Disease, Nutrient Absorption, and Soluble Diet, which were combined through specific strategies. First, the "AND" operator was used to ensure that all the terms appear in the results, using: Colitis AND Ulcerative AND Nutrition or Inflammatory Bowel Disease AND Nutrient Absorption AND Soluble Diet. To broaden the results, "OR" was used, which allowed the inclusion of articles that used variations of the key terms, as in (Colitis OR Ulcerative) AND (Nutrition OR Nutrient Absorption) or (Inflammatory Bowel Disease OR

Colitis) AND Diet. Likewise, to avoid irrelevant information, the "NOT" operator was used, as in Colitis AND Ulcerative NOT Crohn or Nutrition AND Soluble Diet NOT Supplementation. On the other hand, more complex searches were organized using parentheses, which allowed structuring specific combinations, such as (Colitis OR Ulcerative) AND (Inflammatory Bowel Disease AND Diet) or (Nutrition OR Nutrient Absorption) AND (Soluble Diet OR Liquid Diet).

2.1. Patient and Public Involvement (PPI)

Patients or members of the public were not involved in the design, conduct, reporting, or dissemination plans of this systematic review. The study was based exclusively on analysis of published data from peer-reviewed sources. Therefore, no direct patient or public participation was applicable

2.2. Study selection

Also, the limits of the bibliographic search were considered, selecting documents published within the last five years (2019–2024), full-text open-access documents, and literature written in either English or Spanish. However, articles published in the current year were exceptionally included due to their scientific relevance to this study, considering those studies that included patients with a confirmed diagnosis of UC through endoscopy or histopathological examination, patients of both sexes (male and female), and aged between 18 and 56 years.

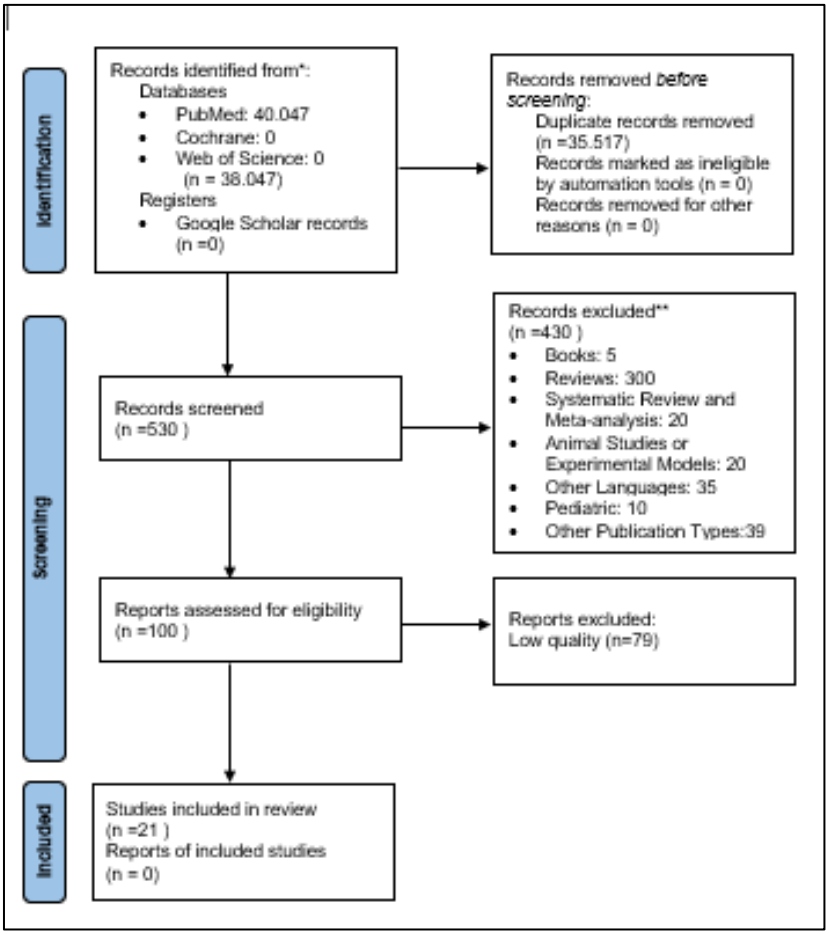

Figure 1 PRISMA Flow Diagram of the Selection Process

Case studies and case series that did not assess the effectiveness of dietary intervention were excluded, as well as those including patients with UC in an active–inactive clinical course (first episode followed by long-term remission greater than 5 years). Studies in which participants did not complete questionnaires or follow-ups, decided not to participate, or underwent total colectomy were not included. Research showing lack of adherence to the proposed diet, patients dependent on or receiving parenteral nutrition, and studies providing only region-specific estimates or sources without full-text articles (such as conference abstracts) were also excluded.

An initial search yielded 38,047 studies across the databases, of which 37,517 were marked as ineligible according to the inclusion and exclusion criteria. A total of 530 studies underwent title and abstract screening, resulting in 430 exclusions. One hundred (100) articles were selected for full-text evaluation, considering only publications from the past six years. Finally, 21 studies were included in the systematic review

3. Outcomes

Key information was extracted regarding specific dietary patterns, types of foods and nutrients, and their impact on disease remission, exacerbation, and symptom management. The results are organized around dietary patterns and specific foods with anti-inflammatory, antioxidant, immunomodulatory, antimicrobial, analgesic, and probiotic properties. In addition, key nutrients essential for the quality of life of patients diagnosed with ulcerative colitis were identified, in order to facilitate understanding of trends and discrepancies within the existing literature.

4. Evaluation of the quality of evidence

The methodology of the systematic reviews considered was analyzed using AMSTAR-2, while the overall certainty of the evidence was assessed through the GRADE framework. The quality of observational studies was reviewed using the Newcastle–Ottawa Scale. These tools made it possible to categorize the evidence according to its methodological rigor and risk of bias, ensuring the reliability of the conclusions regarding nutritional strategies for individuals with ulcerative colitis.

5. Results

In recent years, scientific literature has consistently demonstrated that diet plays a key modulatory role in the progression of inflammatory bowel diseases (IBD), including ulcerative colitis (UC). Among the dietary strategies supported by scientific evidence, three dietary patterns stand out which, although differing in approach, share the objective of reducing intestinal inflammation, improving microbial balance, and enhancing patients' quality of life: the Mediterranean diet, the low-FODMAP diet, and the autoimmune diet.

The Mediterranean diet, widely recognized as a healthy dietary pattern, is characterized by a high intake of fruits, vegetables, legumes, whole grains, and nuts, with extra virgin olive oil as the main source of fat. It includes a moderate consumption of fish and seafood, a limited intake of red and processed meats, and, occasionally, red wine with meals (7). In patients with UC, this model has been shown to promote intestinal barrier restoration, reduce inflammation, and positively modulate the gut microbiome, fostering eubiosis and reducing the predominance of pathobiont bacteria such as Escherichia coli and Fusobacterium (8,9).

Its high content of dietary fiber and microbiota-accessible carbohydrates (MACs) enhances the production of short-chain fatty acids (SCFAs), such as butyrate, which possess anti-inflammatory and metabolic benefits (8,10). However, despite its advantages, adherence to this diet among IBD patients remains low, limiting its implementation. In the Colombian context, it can be adapted using local ingredients such as avocado oil; tropical fruits such as guava, papaya, and mango as substitutes for Mediterranean fruits; and native fish such as trout or bocachico instead of Mediterranean species like tuna or sardines—thus maintaining its healthy and culturally acceptable profile.

The low-FODMAP diet (fermentable oligosaccharides, disaccharides, monosaccharides, and polyols) has gained relevance as an effective tool for managing functional gastrointestinal symptoms associated with IBD. These short-chain carbohydrates, present in foods such as wheat, onions, legumes, milk, certain fruits, and artificial sweeteners, are poorly absorbed, favoring fermentation and gas production, which cause abdominal discomfort. Its implementation involves three phases: elimination of high-FODMAP foods, gradual reintroduction to identify triggers, and maintenance with the widest possible variety of well-tolerated foods.

In a study including 88 IBD patients, FODMAP reduction significantly decreased symptom severity and improved stool consistency and frequency (5). Another study confirmed that high doses of fructans exacerbated symptoms in inactive IBD (5). This diet is suggested as a viable option for UC patients with persistent functional symptoms, provided nutritional adequacy and microbial diversity are prioritized. In Colombia, its application is feasible through local substitutions, though it requires professional guidance to prevent long-term nutritional deficiencies.

The autoimmune diet focuses on the consumption of foods rich in bioactive compounds such as polyphenols, flavonoids, and curcumin, found in fruits, vegetables, legumes, whole grains, tea, cocoa, and spices like turmeric. These compounds

exhibit antioxidant and immunomodulatory properties that help preserve intestinal barrier integrity, improve microbial homeostasis, and reduce oxidative stress—all processes involved in the pathogenesis of UC (11,12).

Clinical studies have documented significant reductions in inflammatory biomarkers such as TNF-α, IL-6, and IL-1β, as well as improvements in clinical indices and laboratory parameters. For example, the consumption of blueberries, rich in anthocyanins, achieved a 63.4% clinical remission rate and reductions in fecal calprotectin and histological indices, while oral curcumin supplementation for two months significantly improved symptoms and inflammatory parameters (13,14). Other foods such as mango, Plantago major seed, and rosehip oil have shown potential in reducing inflammatory markers and symptoms, though results still require confirmation in large-scale studies (11).

Taken together, the scientific evidence suggests that these three dietary approaches may serve as valuable adjunctive therapies in the management of UC, each offering specific benefits: the Mediterranean diet stands out for its anti-inflammatory capacity and improvement of microbial profiles; the low-FODMAP diet is particularly effective for controlling functional symptoms; and the autoimmune diet provides bioactive compounds with antioxidant and immunomodulatory properties. Although they do not replace conventional pharmacological treatments, their supervised implementation may contribute to relapse reduction, remission maintenance, and improved quality of life in patients with UC

Table 1 Specific Dietary Patterns with Evidence of Benefit in Patients with Ulcerative Colitis

Author and Year	Country	Diet	Study Design	Dietary Components	Description	Impact	Level of Evidence
Martínez-Álvarez, 2023 [17] Florio et al., 2025 [18] Roncoroni et al., 2022 [20] Rinninella et al., 2023 [19]	Spain Italy Italy Italy	Mediterranean	Narrative Review Systematic Review Literature Review Narrative Review	Fish, seafood, fruits, vegetables, legumes, whole grains, nuts, extra virgin olive oil, limited red meat, dairy products, and occasional red wine	Diet rich in vegetables and healthy fats, especially the monounsaturated fats from olive oil, which promote intestinal balance, reduce inflammation, and provide fiber and carbohydrates that the microbiota converts into compounds with anti-inflammatory effects.	IV I III IV	GESEN A C GESEN
Hsieh et al., 2020 [10] Castro el al., 2021 [11]	Taiwan Poland	Low-FODMAP Diet	Narrative Review	Restriction of fermentable oligosaccharides, disaccharides, monosaccharides, and polyols.	Low intake of short-chain, non-digestible carbohydrates. Reduces digestive symptoms such as bloating, gas, and abdominal pain in individuals with IBS.	IV IV	A GESEN
Louis-Jean, 2024 [6] Xue et al., 2023 [7]	United kingdom China	Autoimmune Protocol Diet	Narrative review Narrative Review	Foods rich in polyphenols, flavonoids, curcumin, and other phytochemicals; lean meats, fish, unprocessed	Dietary strategy that excludes foods with inflammatory or immunoreactive potential while promoting the consumption of those with	IV IV	GESEN C

Coelho et al., 2020 [1] Goulart et al., 2020 [3]	Brazil Brazil		Systematic Review of Randomized Controlled Trials. Systematic Review	vegetables, low-fructose fruits; exclusion of grains, dairy, legumes, refined sugars, and gluten	antioxidant and immunomodulatory properties. Aims to reduce cytokine and free radical production, maintain intestinal barrier integrity, and promote microbiota balance.	I I	A A

Note: Authors' own elaboration based on the results of the project Comprehensive Review of Nutritional Strategies for Patients with Ulcerative Colitis Reported in Articles Worldwide Between 2019 and 2024

Table 2 Colombian Adaptation of the FODMAP, Mediterranean, and Autoimmune Diets for the Management of Inflammatory Bowel Diseases

Food category	**Low-FODMAP Foods**	**Potential Benefits for IBD**	**Main nutrirional component**
Grains & Tubers	Rice; Gluten-free oats; Corn (flour, tortillas, arepas in portions); Quinoa; Potato; Cassava; Gluten-free bread	Easily digestible energy source. Helps reduce fermentable carbohydrate load that may exacerbate digestive symptoms (bloating, gas, diarrhea). Provides soluble fiber options better tolerated in IBD.	Complex carbohydrates, Moderate fiber, B vitamins, Magnesium, Iron (fortified).
Proteins	Beef, pork, chicken, turkey (without high-FODMAP marinades); Fish and seafood (trout, bocachico, tuna, sardines); Eggs	Essential for tissue repair and maintenance in IBD. Contribute to satiety and preservation of muscle mass, often reduced during flares.	High biological value protein, Iron, Zinc, B vitamins (B12).
Dairy & Alternatives	Lactose-free milk and yogurt (plain, without high-FODMAP fruits); Aged cheeses (cheddar, mozzarella, Swiss, parmesan); Plant-based milks (almond, rice, macadamia—unsweetened, without inulin)	Provide calcium and vitamin D without triggering lactose intolerance symptoms. Lactose-free options reduce intestinal fermentation.	Calcium, Vitamin D (fortified), Protein, Fats.
Fruits	Banana (green or slightly ripe, in portions), Orange, Tangerine, Lemon, Lime, Strawberries, Blueberries, Raspberries, Blackberry, Grapes, Kiwi, Melon, Pineapple, Guava, Papaya, Mango	Provide vitamins and antioxidants that reduce inflammation and support gut health. Minimize fructose and polyol load, reducing bloating and diarrhea.	Vitamins (C, A), Antioxidants, Fiber, Water.
Vegetables	Spinach, Swiss chard, Lettuce, Kale, Carrot, Cucumber, Tomato, Zucchini, Eggplant, Bell peppers, Potato, Sweet potato (in portions), Celery (in portions), Green beans (in portions), Broccoli, Cauliflower	Vital sources of vitamins, minerals, and fiber supporting gut and general health. Reduce inflammation and maintain bowel regularity without excessive fermentation.	Vitamins (K, A, C, Folate), Minerals (Potassium, Magnesium), Fiber, Antioxidants.
Fats & Oils	Olive, Canola, Sunflower, Coconut oils; Avocado (small portions); Butter, Margarine (without inulin/FOS); Nuts (macadamia,	Concentrated energy source, crucial in IBD due to malabsorption or increased energy needs. Omega-3 fatty acids have	Healthy fats (mono- & polyunsaturated), Fat-soluble vitamins (A, D, E, K), Omega-3.

	peanuts); Seeds (chia, flax, pumpkin in portions)	anti-inflammatory properties. Enhance absorption of fat-soluble vitamins.	
Sweeteners & Condiments	White sugar (sucrose), Maple syrup, Pure stevia, Brown rice syrup, Salt, Black pepper, Fresh herbs (parsley, cilantro, basil, oregano, thyme, rosemary), Ginger, Turmeric	Many herbs and spices have anti-inflammatory and mild digestive properties.	Energy (sugars), Minerals (salt), Antioxidants, Bioactive compounds.

Source: Adapted from Hsieh, M.-S., Hsu, W.-H., Wang, J.-W., Wang, Y.-K., Hu, H.-M., Chang, W.-K., Chen, C.-Y., Wu, D.-C., Kuo, F.-C., & Su, W.-W. (2020). Nutritional and dietary strategy in the clinical care of inflammatory bowel disease – Review. *Journal of Clinical Gastroenterology, 54*(9), 770–777. https://doi.org/10.1097/MCG.0000000000001377

6. Discussion

The results of this review show that dietary patterns such as the Mediterranean diet, the low-FODMAP diet, and the autoimmune diet can act as complementary interventions in the management of ulcerative colitis, supporting intestinal microbiome modulation, inflammation reduction, and control of gastrointestinal symptoms.

The Mediterranean diet stands out for promoting eubiosis and decreasing inflammatory markers, although outside its cultural context, adaptations are required to improve adherence (7–10). The low-FODMAP diet demonstrated efficacy in reducing functional symptoms (5), although uncertainties remain regarding its impact on active inflammation and its long-term safety without professional supervision.

The autoimmune diet showed promising effects associated with polyphenols, flavonoids, and curcumin (11,12,13,14), and was included in this review due to its similarities with exclusion guidelines for UC, which identify pro-inflammatory foods linked to cytokine release, free radicals, and oxidative stress.

In contrast, semi-vegetarian and vegetarian diets were excluded despite their possible anti-inflammatory effects, as they may induce macro- and micronutrient deficiencies, anemia, and dehydration, which are counterproductive in patients with intestinal malabsorption.

Overall, the evidence supports that, beyond pharmacological and immunosuppressive treatments, nutrition is an essential pillar in the comprehensive management of IBD. Personalized dietary counseling and adequate nutritional support are required to optimize clinical outcomes and quality of life, as well as more robust clinical studies to establish standardized protocols and validate their long-term effectiveness and safety.

7. Conclusions

The reviewed evidence underscores the fundamental role of diet in the prevention, control, and treatment of Inflammatory Bowel Disease (IBD), particularly ulcerative colitis (UC), confirming that nutrition not only serves a supportive function but also acts as an active modulator of the inflammatory response and intestinal microbial composition. Dietary fiber emerges as a key component, as it promotes the proliferation of beneficial bacteria that produce short-chain fatty acids such as butyrate, which strengthen intestinal barrier integrity and exert potent anti-inflammatory effects (7–10). In this context, the Mediterranean diet has been shown to reduce inflammation, improve eubiosis, and decrease the presence of pathobionts, with a well-documented benefit profile supported by multiple studies and adaptable to different cultural settings (7–10).

The low-FODMAP diet, although more restrictive, has been shown to significantly reduce functional symptoms such as abdominal distension and altered bowel habits (5). Meanwhile, the autoimmune diet provides a high content of bioactive compounds such as polyphenols, flavonoids, and curcumin, with evidence of reductions in inflammatory markers such as TNF-α, IL-6, and IL-1β (11–14), and documented cases of clinical remission exceeding 60% following interventions with specific foods such as blueberries or curcumin. Likewise, the use of probiotics has demonstrated efficacy both in inducing and maintaining remission, while prebiotics and synbiotics enhance this effect by positively modulating the microbiota (15). Other nutrients, such as selenium, flavonoids, and compounds derived from seaweeds, exhibit antioxidant and immunomodulatory properties, contributing to the reduction of oxidative stress (11,12). Taken together, the findings of this review support the integration of personalized nutritional strategies—including the Mediterranean, low-FODMAP, or autoimmune diets depending on the patient's profile—as an essential component of

the comprehensive management of UC. This reinforces the need for professional guidance to ensure clinical efficacy, long-term adherence, and cultural and nutritional adequacy.

Compliance with ethical standards

Acknowledgments

This study did not receive funding from any public, private, or non-profit entities. The review was conducted independently by the authors.

Disclosure of conflict of interest

The authors declare no conflicts of interest.

Statement of ethical approval

This study corresponds to a systematic review of the literature; therefore, it did not involve direct participation of human subjects or the use of identifiable personal data. Consequently, approval from a research ethics committee was not required.

References

[1] Coelho MR, Romi MD, Ferreira DMTP, Zaltman C, Soares-Mota M. The use of curcumin as a complementary therapy in ulcerative colitis: A systematic review of randomized controlled clinical trials. Nutrients. 2020;12(8):2296.doi:10.3390/nu12082296.

[2] Gheonea T, Bogdan M, Meca AD, Rogoveanu I, Oancea C. Recent clinical evidence on nutrition, novel pharmacotherapy, and vaccination in inflammatory bowel diseases. Front Pharmacol. 2024;15:1380878. doi:10.3389/fphar.2024.1380878.

[3] Goulart RA, Barbalho SM, Rubira CJ, Araújo AC, Lima VM, Leoni BR, et al. Curcumin therapy for ulcerative colitis remission: Systematic review and meta-analysis. Expert Rev Gastroenterol Hepatol. 2020;14(12):1171-1179. doi:10.1080/17474124.2020.1808460.

[4] Hossen I, Hua W, Ting L, Mehmood A, Jingyi S, Duoxia X, et al. Phytochemicals and inflammatory bowel disease: A review. Crit Rev Food Sci Nutr. 2020;60(8):1321-1345. doi:10.1080/10408398.2019.1570913.

[5] Khan N, et al. Polyphenols in the treatment of autoimmune diseases. Autoimmun Rev. 2019;18(7):647-657. doi:10.1016/j.autrev.2019.05.003.

[6] Louis-Jean S. Clinical outcomes of flavonoids for immunomodulation in inflammatory bowel disease: A narrative review. Ann Gastroenterol. 2024;37(4):392-402. doi:10.20524/aog.2024.0893.

[7] Xue JC, Yuan S, Meng H, Hou XT, Li J, Zhang HM, et al. The role and mechanism of flavonoid herbal natural products in ulcerative colitis. Biomed Pharmacother. 2023;158:114086. doi:10.1016/j.biopha.2022.114086.

[8] Al-Okbi SY. Date palm as source of nutraceuticals for health promotion: A review. Curr Nutr Rep. 2022;11(4):574-591. doi:10.1007/s13668-022-00437-w.

[9] Jarmakiewicz-Czaja S, Piątek D, Filip R. The influence of nutrients on inflammatory bowel diseases. J Nutr Metab. 2020;2020:2894169. doi:10.1155/2020/2894169.

[10] Hsieh MS, Hsu WH, Wang JW, Wang YK, Hu HM, Chang WK, et al. Nutritional and dietary strategy in the clinical care of inflammatory bowel disease. J Formos Med Assoc. 2020;119(12):1742-1749. doi:10.1016/j.jfma.2019.09.005.

[11] de Castro MM, Pascoal LB, Steigleder KM, Siqueira BP, Corona LP, Ayrizono MLS, et al. Role of diet and nutrition in inflammatory bowel disease. World J Exp Med. 2021;11(1):1-16. doi:10.5493/wjem.v11.i1.1.

[12] Fuxman C, Sicilia B, Linares ME, García-López S, González Sueyro R, González-Lamac Y, et al. Guía GADECCU 2022 para el tratamiento de la colitis ulcerosa. Gastroenterol Hepatol. 2023;46 Suppl 1:S1-S56. doi:10.1016/j.gastrohep.2023.01.009.

[13] Figueroa C. Epidemiología de la enfermedad inflamatoria intestinal. Rev Med Clin Condes. 2019;30(4):257-261. doi:10.1016/j.rmclc.2019.06.003.

[14] Fernández-Ávila DG, Bernal-Macías S, Parra-Izquierdo V, Rincón-Riaño DN, Gutiérrez JM, Rosselli D. Prevalence of inflammatory bowel disease and related arthritis in Colombia, according to information from the Health and Social Protection Data System. Rev Colomb Reumatol Engl Ed. 2020;27(1):3-8. doi:10.1016/j.rcreue.2019.10.005.

[15] Wellens J, Vissers E, Matthys C, Vermeire S, Sabino J. Personalized dietary regimens for inflammatory bowel disease: Current knowledge and future perspectives. Pharmacogenomics Pers Med. 2023;16:15-27. doi:10.2147/PGPM.S359365.

[16] Martínez Gómez MJ, Melián Fernández C, Romeo Donlo M. Nutrición en enfermedad inflamatoria intestinal. Nutr Hosp. 2016;33(Suppl 4):348. doi:10.20960/nh.348.

[17] Martínez-Álvarez JR. La dieta mediterránea, una herramienta esencial para la promoción de la salud. Enferm Nefrol. 2023;26(2):103-104. doi:10.37551/S2254-28842023010.

[18] Florio M, Crudele L, Sallustio F, Moschetta A, Cariello M, Gadaleta RM. Disentangling the nutrition-microbiota liaison in inflammatory bowel disease. Mol Aspects Med. 2025;102:101349. doi:10.1016/j.mam.2025.101349.

[19] Rinninella E, Tohumcu E, Raoul P, Fiorani M, Cintoni M, Mele MC, et al. The role of diet in shaping human gut microbiota. Best Pract Res Clin Gastroenterol. 2023;62-63:101828. doi:10.1016/j.bpg.2023.101828.

[20] Roncoroni L, Gori R, Elli L, Tontini GE, Doneda L, Norsa L, et al. Nutrition in patients with inflammatory bowel diseases: A narrative review. Nutrients. 2022;14(4):751. doi:10.3390/nu14040751.

[21] Ungaro R, Mehandru S, Allen PB, Peyrin-Biroulet L, Colombel JF. Ulcerative colitis. Lancet. 2017;389(10080):1756-1770. doi:10.1016/S0140-6736(16)32126-2.