



Article

Current Challenges in the Clinical Course, Diagnosis, And Treatment of Ulcerative Colitis

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Abstract: Ulcerative colitis is a chronic inflammatory disease of the colon characterized by immune-mediated inflammation of the intestinal mucosa. This article analyzes the clinical course of ulcerative colitis, contemporary diagnostic approaches, and current challenges in its treatment. The clinical course of the disease and treatment outcomes were evaluated in 98 patients. The findings demonstrated that long-standing disease, extensive colonic involvement, pseudopolyp formation, and severe clinical manifestations are the main indications for surgical intervention. In such cases, surgery remains the most effective radical treatment option. The use of minimally invasive (laparoscopic), staged, and complication-free surgical techniques plays a crucial role in patient recovery and contributes significantly to improving quality of life.

Keywords: ulcerative colitis, inflammatory bowel disease, diagnosis, biological therapy, surgery, laparoscopy, quality of life.

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Introduction

Ulcerative colitis (UC) is a chronic nonspecific inflammatory disease of the colon, the etiology and pathogenesis of which have not yet been fully elucidated. In recent years, the prevalence of this disease has increased in many countries worldwide, leading to a significant rise in scientific interest and research activity.

In 2017, studies conducted by American scientists R. Ungaro, S. Mehandru, and J.F. Colombel, British researcher P.B. Allen, and French researcher L. Peyrin-Biroulet demonstrated that genetic factors, alterations in the intestinal microbiota, and dysregulation of immune response mechanisms are among the main etiological factors involved in the development of ulcerative colitis [1]. The authors emphasized that damage to the intestinal epithelial barrier leads to the activation of inflammatory mediators, resulting in a chronic inflammatory process.

In 2017, the European Consensus, developed by F. Magro, P. Gionchetti, R. Eliakim, and other researchers, outlined modern principles for the diagnosis and management of ulcerative colitis [2]. The authors recommended a comprehensive diagnostic approach based on clinical manifestations, laboratory findings, endoscopic evaluation, and histological examination.

In 2018, B.G. Feagan (Canada) and W.J. Sandborn (USA) investigated the effectiveness of biological therapy and found that anti-TNF agents increase the likelihood

of achieving remission in patients with moderate-to-severe ulcerative colitis [3]. However, secondary loss of response to these medications was observed in some patients.

In 2019, J.D. Feuerstein, A.C. Moss, and F.A. Farraye (USA) analyzed the clinical course of ulcerative colitis and reported that bloody diarrhea, abdominal pain, and tenesmus are the most common symptoms of the disease [4]. They also noted that long-standing inflammation increases the risk of developing colorectal cancer.

In 2019, clinical guidelines for the management of ulcerative colitis were developed by D.T. Rubin, A.N. Ananthakrishnan, C.A. Siegel, B.G. Sauer, and M.D. Long from the United States [5]. The authors emphasized the importance of selecting individualized treatment strategies according to disease severity.

In 2020, T. Kobayashi (Japan), B. Siegmund (Germany), C. Le Berre and L. Peyrin-Biroulet (France), and their colleagues published a comprehensive review addressing current approaches to the epidemiology, diagnosis, and treatment of ulcerative colitis [6]. The authors identified colonoscopy with biopsy as the gold standard for diagnosis.

In 2020, L. Peyrin-Biroulet and colleagues (France) evaluated the advantages of the Treat-to-Target strategy and emphasized that therapeutic goals should include not only clinical remission but also endoscopic and histological remission [7].

In 2021, B.E. Sands and colleagues (USA) assessed the efficacy of vedolizumab and demonstrated that this biological agent is highly effective in reducing intestinal inflammation and maintaining remission in patients with ulcerative colitis [8].

In 2021, S. Sebastian, A. Gaya, and colleagues (United Kingdom) investigated the outcomes of biological therapy in patients with ulcerative colitis and showed that treatment efficacy depends on patient age, disease duration, and inflammatory activity [9].

In 2022, S. Danese (Italy) and L. Peyrin-Biroulet (France) analyzed the role of novel molecular therapies and Janus kinase (JAK) inhibitors in clinical practice [10]. They concluded that these agents represent promising therapeutic options for patients who fail to respond to biological therapy.

In 2022, Uzbek researchers A.A. Yuldashev, M.M. Karimov, and colleagues studied the clinical course of inflammatory bowel diseases and emphasized the importance of early diagnosis in preventing disease-related complications [11].

In 2023, experts from the Association of Gastroenterologists of Uzbekistan developed national clinical guidelines that proposed modern algorithms for the diagnosis and treatment of ulcerative colitis [12]. These recommendations highlighted the importance of wider implementation of biological therapy and long-term patient monitoring.

In 2024, B.G. Feagan, W.J. Sandborn, and colleagues investigated the efficacy of selective immunomodulatory agents and demonstrated promising outcomes in patients with moderate-to-severe ulcerative colitis [13].

Thus, the available literature indicates that genetic, immunological, and microbiological factors play crucial roles in the development of ulcerative colitis. Colonoscopy and histological examination remain the cornerstone of diagnosis. Although the introduction of biological therapies and JAK inhibitors has substantially improved treatment outcomes in recent years, disease recurrence, resistance to biological therapy, and maintenance of long-term remission remain major clinical challenges.

Research Objective

To analyze current approaches to the clinical course, diagnosis, and treatment of ulcerative colitis and to identify existing challenges.

Materials and Methods

This study involved a review and analysis of national and international scientific literature, clinical guidelines, and recent gastroenterological research on ulcerative colitis. In addition, the clinical course of the disease and treatment outcomes were evaluated in 98

patients treated at the Department of Coloproctology of the Tashkent National Medical Center. Methods of analysis, comparison, and synthesis were applied in processing the collected data.

Results and discussion

The main clinical signs of ulcerative colitis are as follows, which were observed in patients depending on the degree of the disease:

Table 1. Clinical manifestations of ulcerative colitis (n=98).

Patient complaints	Number of patients (n)
bloody diarrhea	98
abdominal pain	92
tenesmus	86
fever	40
general weakness	96
weight loss	64
loss of appetite	48
extraintestinal complications	14

In mild forms of the disease, the general condition of patients was satisfactory, whereas severe forms were characterized by bloody diarrhea occurring more than 8–12 times per day, anemia, fever, and metabolic disturbances.

Extraintestinal manifestations were observed in 14 patients with ulcerative colitis. These included arthritis, uveitis, erythema nodosum, primary sclerosing cholangitis, and other systemic complications.

The diagnosis of ulcerative colitis was established on the basis of clinical, laboratory, and instrumental investigations.

Colonoscopy with biopsy was considered the gold standard for the diagnosis of ulcerative colitis and was performed in all 98 patients. Endoscopic examination revealed mucosal hyperemia, contact bleeding, erosions, and ulcerative lesions. Histological examination played a crucial role in confirming the diagnosis.

Table 2. Extent of colonic involvement and disease severity in ulcerative colitis (n=98).

Colonic involvement	Number of patients (n)	Ulcerative colitis severity	Number of patients (n)
Proctitis	42	Mild	48
Left-sided involvement	38	Moderate	30
Total involvement	18	Severe	14
		Fulminant	6

Laboratory tests are important in determining the course of the disease and the general condition of the body:

Table 3. Laboratory findings in patients with ulcerative colitis (n=98).

Laboratory results	Number of patients (n)
decreased hemoglobin	94
leukocytosis	42
increased ESR	64
increased C-reactive protein	36
increased fecal calprotectin;	42
hypoalbuminemia	48

In recent years, in addition to routine complete blood count and biochemical analyses, C-reactive protein (CRP) and fecal calprotectin have been widely used as reliable biomarkers for assessing intestinal inflammatory activity.

Radiography, computed tomography (CT), and magnetic resonance imaging (MRI) were used to identify complications and perform differential diagnosis.

The primary goal of ulcerative colitis treatment is to achieve clinical and endoscopic remission and maintain it for the longest possible period.

In patients with mild-to-moderate ulcerative colitis, 5-aminosalicylate agents were administered, including oral mesalazine at a dose of 2–4 g/day, mesalazine suppositories at 1–2 g/day, or mesalazine suspension at 4 g/60 mL per day. During disease exacerbations, glucocorticosteroid therapy with prednisolone at a dose of 1–2 mg/kg/day was prescribed. The dosage was gradually tapered after 7–10 days according to the patient's clinical response. Immunomodulators, including azathioprine and 6-mercaptopurine, were used in steroid-dependent or steroid-resistant patients[14,15].

In recent years, biological therapy has become an integral component of ulcerative colitis management. Biological agents, including anti-TNF therapies, vedolizumab, and ustekinumab, have significantly improved remission rates. However, the high cost of these medications and the inadequate therapeutic response observed in some patients remain major challenges in clinical practice.

In severe cases, when complications developed or conservative treatment proved ineffective, staged surgical management was performed. The surgical strategy consisted of three stages: (1) colectomy with ileostomy formation; (2) ileal pouch–anal anastomosis (IPAA) with protective ileostomy; and (3) closure of the ileostomy. Surgical treatment was performed in 22 patients.

Conclusion

Ulcerative colitis remains one of the most important challenges in modern coloproctology. The chronic nature of the disease, the risk of serious complications, and its negative impact on patients' quality of life necessitate early diagnosis and effective treatment. Although advances in biological therapy have improved disease prognosis, further research is required to develop individualized treatment strategies, enhance the efficacy of biological agents, and achieve sustained long-term remission.

Surgical intervention remains the definitive treatment option for patients with long-standing ulcerative colitis, extensive colonic involvement, pseudopolyp formation, and severe disease progression. The use of minimally invasive (laparoscopic), staged, and complication-free surgical approaches plays a crucial role in patient recovery and significantly improves postoperative quality of life.

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