International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

Check for updates

Diagnostic and therapeutic features of acute severe colitis in Crohn's disease

Salma Kaouissi *, Meriem Tamdaoui, Salma Mechhor, Manal Cherkaoui El Malki, Hicham El Bacha, Nadia Benzzoubeir and Ikram Errabih

Department of Hepato-Gastroenterology and Proctology Medicine B - Ibn Sina Hospital-University Mohamed V-Rabat-Morocco.

International Journal of Science and Research Archive, 2025, 16(03), 142–148

Publication history: Received on 26 July 2025; revised on 01 September 2025; accepted on 04 September 2025

Article DOI: https://doi.org/10.30574/ijsra.2025.16.3.2480

Abstract

Background: Acute severe colitis (ASC) is a life-threatening complication of inflammatory bowel disease, occurring less frequently in Crohn's disease (CD) than in ulcerative colitis. Data on its clinical course and management in CD remain limited.

Objective: To describe the diagnostic, therapeutic, and prognostic features of ASC complicating CD.

Methods: We conducted a retrospective descriptive and analytical study including 46 CD patients hospitalized for ASC between January 2013 and January 2025 at Ibn Sina University Hospital, Rabat. Epidemiological, clinical, biological, endoscopic, therapeutic, and outcome data were collected

Results: The mean age was 42.9 years (±15), with a female predominance (71.7%). ASC was inaugural in 43.5% of cases. Pancolitis (60.9%) and the inflammatory phenotype (76.1%) were the most frequent disease patterns. Abdominal pain (91.3%) and diarrhea (97.8%) were the predominant presenting symptoms. Endoscopy showed superficial ulcers in 84.8% and deep ulcers in 52.2%. All patients received intravenous corticosteroids; resistance was observed in 39.1%. Infliximab was used in 6.5% of cases, while surgery was required in 34.7%. During follow-up, clinical remission was achieved in 69.2%, mucosal healing in 61.5%, while mortality occurred in 4.3%.

Conclusion: ASC in CD, although rare, represents a severe medical-surgical emergency with high corticosteroid resistance and surgical rates.

Keywords: Crohn's disease; Acute severe colitis; Corticosteroid resistance; Infliximab; Colectomy

1. Introduction

Inflammatory bowel diseases (IBD), mainly comprising Crohn's disease (CD) and ulcerative colitis (UC), are chronic conditions characterized by persistent inflammation of the gastrointestinal tract, evolving in flare-ups alternating with periods of remission, leading to both acute and chronic lesions. CD is a segmental and transmural condition that can affect the entire digestive tract, with a predilection for the terminal ileum and colon [1]. Its course is variable and associated with significant morbidity, severely impairing quality of life.

Acute severe colitis (ASC) represents a medical-surgical emergency that complicates IBD in 10–15% of cases, either as an inaugural presentation or during the disease course [2]. It occurs more frequently in UC and less commonly in CD. Its diagnosis relies on clinic-biological criteria, particularly the Lichter score and the Truelove and Witts score [3].

* Corresponding author Salma Kaouissi

Before the introduction of corticosteroid therapy in the 1950s, ASC mortality approached 30%. Early corticosteroid uses and advances in surgical management have led to a substantial reduction in this mortality [4].

The objective of this study is to describe the clinical, paraclinical, therapeutic, and evolutionary features of a series of CD patients hospitalized for ASC.

2. Methods

We conducted a retrospective, descriptive, and analytical study in the Department of Hepato-Gastroenterology and Proctology, Ibn Sina University Hospital, Rabat, Morocco, over a 12-year period (January 2013 – January 2025). All patients followed for CD and hospitalized for ASC were included.

Epidemiological, clinical, biological, endoscopic, therapeutic, and outcome data were collected. Statistical analysis included multivariate logistic regression to identify predictive factors of steroid resistance. Results are expressed as odds ratio (OR) with 95% confidence interval (95% CI).

3. Results

3.1. Epidemiological data

Out of a total of 1628 IBD cases, 593 patients were followed for UC and 1035 for CD. Among the latter, 46 patients were hospitalized for ASC on CD, including 33 women (71.7%) and 13 men (28.3%), showing a clear female predominance, with a female-to-male ratio of 2.53. The mean age was 42.9 years (±15; range: 19–72 years). Smoking was reported in 8.7% of patients. No history of appendectomy was noted. Family history of IBD was found in 8.7%.

3.2. Crohn's disease characteristics

Nearly half of the patients (n=20; 43.5%) presented with inaugural colitis. Among the 26 patients (56.5%) with previously known CD, repeated corticosteroid (CS) use was noted in 30.4% of cases. The most frequent disease location was pancolic in 28 patients (60.9%), followed by ileocolic involvement in 17 (37%). Upper GI involvement associated with pancolitis was noted in one case. Regarding disease phenotype, the inflammatory type predominated in 35 patients (76.1%), followed by stricturing in 6 (13%), fistulizing in 3 (6.5%), and mixed stricturing-fistulizing in 2 (4.3%). Perianal lesions (PAL) were observed in half the patients (n=23; 50%), mainly anal fistulas in 13 patients (28.3%), including 4 ano-genital fistulas (3 ano-vaginal [6.5%] and 1 ano-scrotal [2.2%]). Anal stricture was present in 3 patients (6.5%), and 2 had combined complex forms of fistula and stricture. Anal ulceration was observed in 1 patient (2.2%). Extra-intestinal manifestations (EIM) were noted in 14 patients (30.4%), including deep vein thrombosis in 5 (10.9%), sacroiliitis in 2 (4.3%), and erythema nodosum in 1 (2.2%).

3.3. Clinic-biological features of ASC

At admission, abdominal pain was reported in 42 patients (91.3%), and diarrhea in 45 patients (97.8%), making them the predominant symptoms. Mucous-bloody stools were reported in 41 patients (89.1%). Dysenteric syndrome was observed in 28 patients (60.9%), and rectal bleeding in 17 (37%).

The mean hemoglobin level was 8.52 g/dL, with severe anemia (≤ 7 g/dL) in 17.4%. The median CRP was 127 mg/L, and median serum albumin 27 g/L.

Initial Lichter score ranged from 10 to 15, with a mean of 13 points (37% of patients).

3.4. Paraclinical data

All patients underwent abdominal CT scan at admission to rule out surgical emergencies. No perforation, abscess, or toxic megacolon was noted. CT revealed active pancolitis with submucosal edema in most patients.

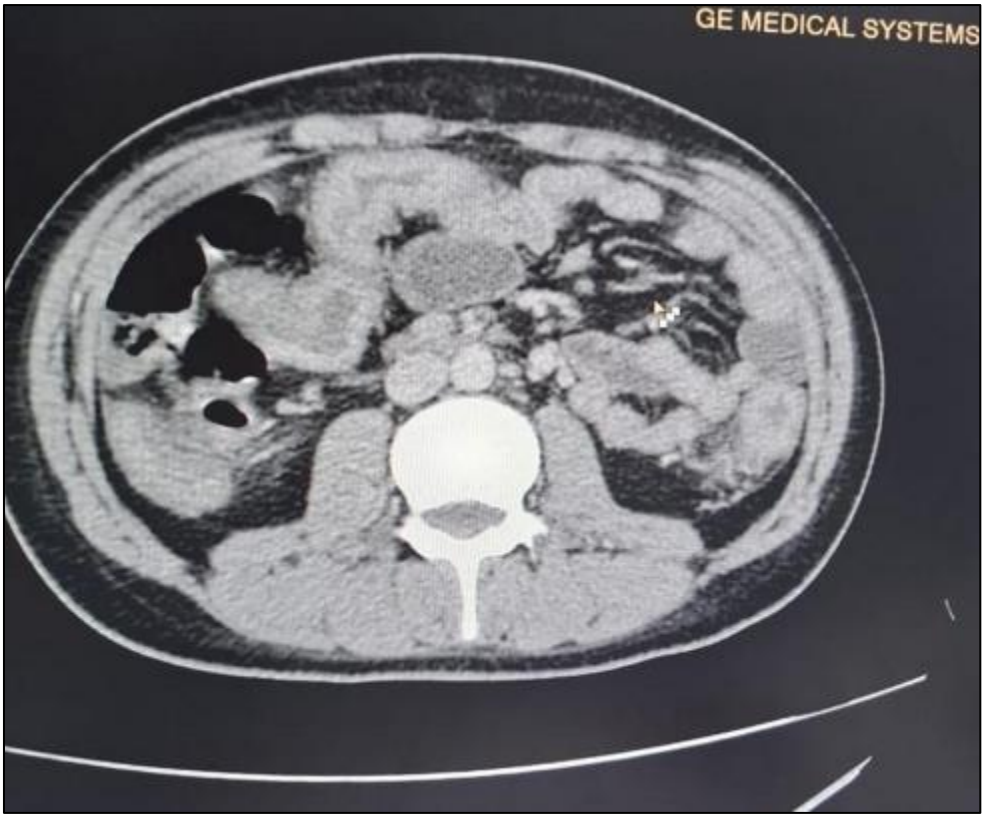

Image 1 Axial CT scan showing regular pan colic inflammatory thickening in a patient hospitalized for acute severe colitis due to Crohn's disease

After excluding surgical emergencies, all patients underwent short colonoscopy. Endoscopy revealed superficial ulcers in 39 patients (84.8%), deep ulcers in 24 (52.2%), punched-out ulcers in 5 (10.9%), mucosal detachment in 7 (15.2%), and muscularis exposure in 12 (26.1%). Colonic biopsies were performed in all cases; CMV inclusions were positive in 2 patients (4.3%).

Figure 2 Endoscopic image with minimal insufflation showing superficial colonic ulcerations

3.5. Medical management

All patients received IV corticosteroids (methylprednisolone, 0.8 mg/kg/day, max 40 mg/day). Corticosteroid enemas were added in 31 cases (67.4%) to optimize local response. Antibiotic therapy was administered in 32 patients (69.6%), most commonly ciprofloxacin-metronidazole (63%). All patients received prophylactic anticoagulation. Blood transfusion was required in 10 patients (21.7%), IV iron in 40 (87%), and human albumin in 14 (30.4%).

Clinical response (≥3-point decrease in Lichtiger score at day 3 and day 5) was achieved in 28 patients (60.9%). Steroid resistance was observed in 18 patients (39.1%).

Among steroid-resistant patients, second-line therapy was initiated: infliximab in 3 cases (6.5%) with good response in 2, and surgery in 16 (34.7%), including 1 case refractory to infliximab.

3.6. Surgical management

Surgery included subtotal colectomy with double stoma in 15 patients (32.6%) and total colectomy with definitive stoma in 1 patient with disabling anal stricture (2.2%). Postoperative course was uneventful in 15 cases (32.6%). Postoperative mortality was 2.2% (1 case of refractory septic shock).

Figure 3 Surgical specimen of a colectomy

3.7. Maintenance therapy

Immunosuppressants were the most frequently used maintenance therapy (n=22; 47.8%), followed by infliximab (n=15; 32.6%), combination therapy (n=6; 13%), and Ustekinumab (n=3; 6.5%).

3.8. Follow-up

All patients underwent regular clinical, biological, and endoscopic follow-up. During follow-up, 4 patients (8.7%) were lost to follow-up, and 2 (4.3%) died. Among those followed, 27 (69.2%) achieved clinical remission, and 23 (58.9%) biological remission. Endoscopic evaluation showed mucosal healing in 24 patients (61.5%) and persistent inflammation in 15 (38.5%), including 9 in clinic-biological but not endoscopic remission.

4. Discussion

Acute severe colitis is the most serious complication of IBD. It occurs more frequently in UC (10 to 15% of cases), but it can also be observed in CD, where it remains rare and poorly documented. In our study, 4.44% of CD patients were hospitalized for ASC. Our series showed a female predominance, with a sex ratio of 2.53. This female predominance has also been reported in the literature [5]. The mean age of onset was 42.9 years, slightly higher than that reported by other series [6]. Family history of IBD was found in 8.7% of cases, which is consistent with data from the literature [7].

The majority of our patients had panned colic involvement and the inflammatory phenotype predominated in our patients (76.1%) which is in accordance with the literature [8]. Perianal lesions were present in 50% of patients, a frequency higher than that usually reported (20–30%) [9]. Extra-intestinal manifestations were noted in 30.4% of our patients, dominated by thromboembolic events. This frequency is higher than that described in UC, where EIM during ASC are observed in 10 to 15% of cases [10].

Clinically, our patients presented mainly with abdominal pain (91.3%) and diarrhea (97.8%), as reported in other studies [11]. Severe anemia (Hb ≤ 7 g/dL) was found in 17.4% of cases, while the mean CRP level was elevated (127 mg/L). Hypoalbuminemia was observed in 30.4% of patients, which represents a poor prognostic factor [12].

Endoscopically, the presence of deep and extensive ulcerations is a marker of severity and a predictor of colectomy [13]. In our study, deep ulcers were observed in 52.2% of cases, and mucosal detachment in 15.2%. CMV colitis was confirmed in 4.3% of cases, close to that reported in the literature [14].

Corticosteroids remain the first-line treatment for ASC. Steroid resistance was observed in 39.1% of our patients, which is higher than the 30% reported in UC [11]. Among steroid-resistant patients, 6.5% received infliximab, with a good response in two-thirds of cases. The use of infliximab in ASC complicating CD is less documented than in UC, but several studies suggest its efficacy [15] [16].

Surgery was required in 34.7% of our patients, mainly subtotal colectomy with double stoma. This rate is close to that reported in the literature, which ranges from 20 to 40% [17]. Postoperative mortality was 2.2%, lower than the 5% reported in older series [17].

For maintenance treatment, immunosuppressants and biologics, particularly anti-TNF agents, were the most used therapies. Ustekinumab was prescribed in 6.5% of cases. Mucosal healing was observed in 61.5% of patients during follow-up, which is an important therapeutic objective, as it is associated with better long-term prognosis [18].

Our study has certain limitations, mainly its retrospective nature and the limited sample size. Nevertheless, it highlights the particularities of ASC complicating CD, which is a rare and severe form requiring early and multidisciplinary management.

5. Conclusion

Acute severe colitis (ASC) complicating CD is a medical-surgical emergency requiring prompt diagnosis and immediate management. In our series, ASC prevalence in CD was 4.5%. Diagnosis relies on clinical and biological criteria, particularly the Lichter score.

Management must take place in hospital, with close coordination between medical and surgical teams. First-line therapy is early IV corticosteroids. In case of non-response (steroid resistance) by day 3–5, second-line therapy must be initiated without delay.

Our series showed a steroid resistance rate of 39%. Beyond 5–8 days without response, postoperative morbidity and mortality increase significantly, highlighting the need not to delay surgical decision-making. The reference surgical procedure is subtotal colectomy with ileostomy and sigmoid ostomy, followed by staged restoration of bowel continuity.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] G. Roda et al., « Crohn's disease », Nat. Rev. Dis. Primer, vol. 6, no 1, p. 1-19, avr. 2020, doi: 10.1038/s41572-020-0156-2.

[2] P. Hindryckx, V. Jairath, et G. D'Haens, « Acute severe ulcerative colitis: from pathophysiology to clinical management », Nat. Rev. Gastroenterol. Hepatol., vol. 13, no 11, p. 654-664, nov. 2016, doi: 10.1038/nrgastro.2016.116.

[3] Cyclosporine in severe ulcerative colitis refractory to steroid therapy - PubMed ». Consulté le: 15 avril 2025. [En ligne]. Disponible sur: https://pubmed.ncbi.nlm.nih.gov/8196726/

[4] M. T. Abreu et N. Harpaz, « Diagnosis of Colitis: Making the Initial Diagnosis », Clin. Gastroenterol. Hepatol., vol. 5, no 3, p. 295-301, mars 2007, doi: 10.1016/j.cgh.2006.12.032.

[5] Sex matters: impact on pathogenesis, presentation and treatment of inflammatory bowel disease https://pmc.ncbi.nlm.nih.gov/articles/PMC7750031/

[6] Worldwide incidence and prevalence of inflammatory bowel disease in the 21st century: a systematic review of population-based studies - ScienceDirect ». https://www.sciencedirect.com/science/article/abs/pii/S0140673617324480

[7] J. Torres, S. Mehandru, J.-F. Colombel, et L. Peyrin-Biroulet, « Crohn's disease », The Lancet, vol. 389, no 10080, p. 1741-1755, avr. 2017, doi: 10.1016/S0140-6736(16)31711-1.

[8] A rolling phenotype in Crohn's disease, Published: April 6, 2017 https://doi.org/10.1371/journal.pone.0174954

[9] Epidemiology and Natural History of Perianal Crohn's Disease: A Systematic Review and Meta-Analysis of Population-Based Cohorts Inflammatory Bowel Diseases, Volume 28, Issue 10, October 2022, Pages 1477–1484, https://doi.org/10.1093/ibd/izab287 Published: 18 November 2021

[10] Extraintestinal Manifestations of Inflammatory Bowel Disease Open Access Stephan R. Vavricka, MD, Alain Schoepfer, MD, Michael Scharl, MD, Peter L. Lakatos, MD, Alexander Navarini, MD, Gerhard Rogler, MD Author Notes Inflammatory Bowel Diseases, Volume 21, Issue 8, 1 August 2015, Pages 1982–1992, https://doi.org/10.1097/MIB.0000000000000392 Published: 02 July 2015

[11] Management of severe or corticosteroid resistant ulcerative colitis] - PubMed ». Consulté le: 15 avril 2025. [En ligne]. Disponible sur: https://pubmed.ncbi.nlm.nih.gov/17483777/

[12] S. Ribiere, M. Leconte, S. Chaussade, et V. Abitbol, « La colite aiguë grave », Presse Médicale, vol. 47, no 4, p. 312-319, avr. 2018, doi: 10.1016/j.lpm.2018.02.020.

[13] M. Allez, M. Lemann, J. Bonnet, P. Cattan, R. Jian, et R. Modigliani, « Long term outcome of patients with active Crohn's disease exhibiting extensive and deep ulcerations at colonoscopy1

[14] Steroid Resistance/Dependence Might Be an Alarming Feature for Cytomegalovirus Infection Among Ulcerative Colitis Patients with Increased Disease Activity Emre Gerecke, Fatih Saygılı 1, Arzu Avcı 2, Hakan Yuceyar

[15] Systematic Review and Meta-Analysis: Infliximab or Cyclosporine as Rescue Therapy in Patients with Severe Ulcerative Colitis Refractory to Steroids - PubMed ». Consulté le: 16 avril 2025. [En ligne]. Disponible sur: https://pubmed.ncbi.nlm.nih.gov/26856754/

[16] Infliximab, azathioprine, or combination therapy for Crohn's disease - PubMed ». Consulté le: 16 avril 2025. [En ligne]. Disponible sur: https://pubmed.ncbi.nlm.nih.gov/20393175/

[17] Laparoscopic subtotal colectomy for acute or severe colitis complicating inflammatory bowel disease: a case-matched study in 88 patients - PubMed ». Consulté le: 16 avril 2025. [En ligne]. Disponible sur: https://pubmed.ncbi.nlm.nih.gov/17462464/

[18] Management of Acute Severe Colitis in the Era of Biologicals and Small Molecules - PubMed ». Consulté le: 15 avril 2025. [En ligne]. Disponible sur: https://pubmed.ncbi.nlm.nih.gov/31817972/