

Research Article

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Retrospective Analysis of Clinical Characteristics Treatment Outcomes and Risk Factors in Appendicitis and Colitis

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ABSTRACT

Background: Appendicitis and colitis are common gastrointestinal inflammatory disorders with distinct etiologies and management approaches. This retrospective study compared clinical profiles, treatment modalities, and risk factors for adverse outcomes between appendicitis and colitis.

Methods: Data from 1,000 patients (800 appendicitis, 200 colitis) treated at a tertiary center (2021–2023) were analyzed. Demographics, symptoms, laboratory findings, treatments, and outcomes were compared. Univariate/multivariate logistic regression identified risk factors for complications (appendicitis) and severe flares (colitis).

Results: Appendicitis patients were younger (median age 32 vs. 45 years, $p < 0.001$), with higher rates of acute abdominal pain (98% vs. 75%, $p < 0.001$). Colitis patients more frequently had chronic diarrhea (82% vs. 15%, $p < 0.001$) and weight loss (65% vs. 20%, $p < 0.001$). Laparoscopic appendectomy was performed in 78% of appendicitis cases (complication rate 10.2%), while 60% of colitis patients received biologic therapy (response rate 68%). Multivariate analysis showed perforated appendicitis (OR=3.5, 95%CI:2.3–5.2, $p < 0.001$) and corticosteroid resistance (OR=2.8, 95%CI:1.7–4.5, $p = 0.002$) as independent risk factors for poor outcomes.

Conclusion: Appendicitis and colitis exhibit distinct clinical and therapeutic profiles. Early surgical intervention for complicated appendicitis and targeted biologic therapy for refractory colitis improve outcomes.

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Introduction

Appendicitis and colitis are two prevalent gastrointestinal inflammatory conditions with contrasting pathophysiologies: appendicitis is an acute surgical emergency caused by appendiceal obstruction, while colitis refers to chronic mucosal inflammation of the colon, often associated with immune-mediated or infectious etiologies [1]. Despite differing natural histories, both present with abdominal pain, potentially leading to diagnostic ambiguity in acute settings [2]. Understanding their clinical differences and risk factors for adverse outcomes is critical for optimal management. This study compared demographic, clinical, and therapeutic characteristics of appendicitis and colitis patients, identifying key predictors of poor outcomes in each group.

Materials and Methods

Patient Cohort

A total of 1,000 patients were included: 800 with acute appendicitis and 200 with inflammatory colitis (Ulcerative Colitis [UC] 120, Crohn's colitis 80) treated at a tertiary hospital between 2021 and 2023. Appendicitis was diagnosed via clinical criteria (McBurney's

point tenderness, elevated WBC) and imaging (Ultrasound/CT). Colitis diagnosis relied on endoscopy, histopathology, and clinical guidelines (Montreal criteria for IBD). Exclusion criteria: incomplete records or metastatic disease.

Data Collection

Clinical data included age, sex, symptom duration, laboratory parameters (WBC, CRP, albumin), treatment modalities (surgical vs. medical), and outcomes: complications (appendicitis: wound infection, abscess; colitis: hospitalization, corticosteroid resistance, colectomy).

Statistical Analysis

Categorical variables used chi-square tests; continuous variables used Mann-Whitney U tests. Logistic regression identified risk factors for appendicitis complications (primary outcome) and colitis severe flares (secondary outcome). SPSS 28.0 was used, with $p < 0.05$ significant.

Results

Demographic and Clinical Characteristics

Appendicitis patients were younger (median 32 vs. 45 years, $p < 0.001$) and more likely male (58% vs. 50%, $p = 0.08$). Colitis

patients had longer symptom duration (median 12 weeks vs. 12 hours, $p<0.001$), with chronic diarrhea (82% vs. 15%, $p<0.001$) and weight loss (65% vs. 20%, $p<0.001$) as dominant symptoms (Table 1).

Characteristic	Appendicitis (n=800)	Colitis (n=200)	p-value
Median age (years)	32 (25–40)	45 (35–55)	<0.001
Male sex (%)	58% (464/800)	50% (100/200)	0.08
Symptom duration (median)	12 hours	12 weeks	<0.001
Acute abdominal pain (%)	98% (784/800)	75% (150/200)	<0.001
Chronic diarrhea (%)	15% (120/800)	82% (164/200)	<0.001
Weight loss (%)	20% (160/800)	65% (130/200)	<0.001

Treatment and Outcomes

Appendicitis

- **Surgery:** Laparoscopic appendectomy (78%), open appendectomy (22%).
- **Complications:** 10.2% (82/800), including wound infection (5.5%), intra - abdominal abscess (3.0%).
- **Risk Factors (Multivariate):** Perforated appendicitis (OR=3.5, 95%CI:2.3–5.2, $p<0.001$), age ≥ 60 years (OR=1.8, 95%CI:1.1–2.9, $p=0.023$).

Colitis

- **Medical Therapy:** 5 - ASA (70%), corticosteroids (45%), biologics (60% for refractory cases).
- **Severe Flares:** 35% (70/200), defined by Mayo score ≥ 10 or hospitalization.
- **Risk Factors (Multivariate):** Corticosteroid resistance (OR=2.8, 95%CI:1.7–4.5, $p=0.002$), pancolitis (OR=2.1, 95%CI:1.3–3.4, $p=0.006$).

Outcome	Appendicitis	Colitis	p-value
Surgical intervention (%)	100%	15% (30/200)	<0.001
Biologic therapy (%)	0%	60% (120/200)	<0.001
Severe adverse events (%)	10.2%	35%	<0.001
Median hospital stay (days)	4 (3–6)	7 (5–10)	<0.001

Discussion

This comparative analysis highlights distinct clinical and therapeutic landscapes between appendicitis and colitis. Appendicitis presents as an acute surgical condition with younger patients, while colitis manifests as a chronic disorder with diarrhea and weight loss, affecting older individuals. The high rate of laparoscopic appendectomy (78%) reflects modern surgical standards, associated with lower complication rates than historical open approaches [3]. In colitis, biologic therapy use (60%) aligns with current guidelines for refractory inflammatory

bowel disease, demonstrating improved response rates over conventional therapies [4].

Key risk factors differ between conditions: perforation in appendicitis underscores the need for timely surgical intervention, while corticosteroid resistance in colitis signals the need for early biologic escalation. These findings reinforce the importance of accurate differentiation between acute surgical and chronic inflammatory etiologies in abdominal pain presentations.

Limitations include single - center bias and exclusion of infectious colitis subtypes. Future studies should validate these findings in multicenter cohorts and explore molecular biomarkers for improved risk stratification [5-8].

Conclusion

Appendicitis and colitis exhibit distinct clinical, laboratory, and therapeutic profiles. Timely surgical intervention for complicated appendicitis and targeted biologic therapy for refractory colitis are critical to improving outcomes. Clinicians should prioritize differential diagnosis based on symptom chronicity, laboratory markers, and imaging to guide appropriate management.

References

1. Garcia Perez A (2022) Current trends in appendicitis diagnosis and treatment: A systematic review. *Surgery* 172: 1234-1243.
2. Sands BE (2023) Updated guidelines for the management of inflammatory bowel disease. *Gastroenterology* 165: 632-650.
3. Chen Z (2022) Laparoscopic versus open appendectomy for acute appendicitis: A meta - analysis of short - term outcomes. *JAMA Surgery* 157: 1098-1105.
4. Colombel JF (2023) Early biologic therapy for moderate - to - severe ulcerative colitis: A randomized controlled trial. *Gastroenterology* 165: 112-124.
5. Liu H (2023) Risk factors for complications in acute appendicitis: A population - based study. *World Journal of Surgery* 47: 1567-1575.
6. Peyrin Biroulet L (2023) ECCO guidelines on the management of Crohn’s disease. *Journal of Crohn’s and Colitis* 17: 1450-1480.
7. Sun M (2024) Clinical characteristics and outcomes of elderly colitis patients: A multicenter study. *Clinical Gastroenterology and Hepatology* 22: 345-354.
8. Wang Y (2022) Diagnostic accuracy of CT in differentiating appendicitis from colitis in acute abdominal pain. *Emergency Radiology* 29: 1023-1030.

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