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Original article

Inflammatory Bowel Disease Among a Sample of Libyan Patients in Tripoli University Hospital

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A B S T R A C T
Inflammatory bowel disease (IBD is a chronic gastrointestinal disorder with increasing global prevalence due to westernization of lifestyles, with many advanced therapies adopted recently. This study aimed to characterize the patterns and management of IBD among Libyan patients attending Tripoli University Hospital (TUH). This descriptive study utilized registry data from the outpatient department at TUH, collecting anonymous information from 69 confirmed cases of IBD patients aged 16 years and older between June and October 2023. About 72.5% of the patients had CD and 27.5% had UC, indicating a predominance of CD (ratio 0.38:1). The median age at diagnosis was 28 years for UC and 23.5 years for CD. Males predominated in both CD (84.4%) and UC (62.2%). All reported smokers were diagnosed with CD. Anemia was prevalent in 41.18% of all IBD patients (36% in CD, 52.6% in UC), a rate considerably higher than reported in European cohorts. Notably, the study observed a high remission rate of approximately 86% (by HBI). A predominance of Crohn's disease over ulcerative colitis in Libyan patients was observed, with younger age at diagnosis, high anemia prevalence, and high remission rates linked to infliximab therapy and long-term follow-up. Larger multicenter studies are needed to confirm and generalize these findings.

Introduction

Inflammatory bowel disease (IBD) has traditionally been considered a disease of the Western world, with notable geographic variations [1]. IBD, which includes both Crohn's disease (CD) and ulcerative colitis (UC), is considered a chronic inflammatory disorder affecting the gastrointestinal tract and is characterized by a progressive and unpredictable disease course [2]. As a lifelong condition with no cure, the increasing prevalence of IBD is largely due to the disparity between its incidence and mortality [3]. An exaggerated immune response to antigenic stimulation by the gut microbiota, in the context of genetic susceptibility, is thought to drive this inflammatory process [4]. Environmental factors, genetic predisposition, and dysregulated immune responses further contribute to the risk of developing IBD [5].

Recent epidemiological data from the Middle East and North Africa (MENA) region have demonstrated a substantial increase in the IBD burden. A large multicenter cross-sectional study reported 5,540 IBD patients across MENA countries, comprising 50.9% UC, 46.9% CD, and 2.0% IBD-unclassified [6]. Notably, 35.4% of these patients had prior biological exposure, indicating significant penetration of advanced therapies in regional referral centers [7]. These trends have been linked to the "westernization" of lifestyle, including dietary habits, in these countries [8]. Therapeutic strategies are broadly similar for UC and CD, with treatment choice depending on disease activity and extent. Currently available medical therapies for IBD include aminosalicylates, corticosteroids, thiopurines, methotrexate, and anti-tumor necrosis factor agents [9]. In the MENA region, contemporary treatment paradigms are rapidly evolving toward the wider utilization of biologics and small molecules, with real-world evidence supporting their effectiveness in regional populations [10]. This study aimed to provide information on the pattern and management of IBD among a sample of Libyan patients at Tripoli University Hospital (TUH).

Methodology

Study Design

This descriptive study was conducted using a registry from the outpatient department at TUH.

Participants

The study included patients aged 16 years and older who were diagnosed with inflammatory bowel disease (IBD) based on clinical, endoscopic, and histological findings.

Data Collection

Data were collected anonymously from June to October 2023, encompassing a total of 69 patients. The collection process ensured confidentiality and compliance with ethical standards.

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Statistical Analysis

The data were analyzed using IBM SPSS Statistics for Windows, Version 22. Normally distributed data were expressed as mean ± standard deviation (SD). Frequencies were calculated for numerical variables, while percentages were computed for categorical variables.

Results

This study included 69 patients, of whom 27.5% had ulcerative colitis (UC) and 72.5% had Crohn's disease (CD). The median age was slightly higher in UC (32 years, 95% CI 21–39) compared to CD (28 years, 95% CI 25–40). Males predominated in both CD (84.4%) and UC (62.2%). All smokers were in the CD group, whereas no UC patient reported smoking. Mean disease duration was comparable between groups (5.8 vs. 5.9 years). Median age at disease onset was 28 years in UC and 23.5 years in CD. Inflammatory markers and hematological indices showed similar patterns, with mean CRP levels around 11–13 mg/L and mean hemoglobin approximately 12 g/dL in both (Table 1).

Table 1. Characteristics of Patients with Ulcerative Colitis (UC) and Crohn's Disease (CD)

Variables	Ulcerative colitis	Crohn's disease
Diagnosis, n(%)	**n = 19 (27.5%)**	**n=50(72.5%)**
Demographics		
Median age, yr (95% CI) Range	32(21-39) 17 – 54	28(25-40) 16 – 65
Gender Male female	 5(15.6%) 14(37.8%)	 27(84.4%) 23(62.2%)
Smoking Smoker Non-smoker	 0(0%) 19(29.2%)	 4(100%) 46(70.8%)
Disease characteristics		
Disease duration, year mean±SD	5.8±5.1	5.9±4.6
Disease onset Median age, yr. (95% CI)	 28(17-33)	 23.5(21-33)
Laboratory parameters		
CRP (mg/L), Mean±SD CRP≤10mg/L CRP>10mg/L	12.71±18.56 14(25.9) 5(33.3)	10.86±20.50 40(74.1) 10(66.7)
Hemoglobin, mean±SD (g/dL) Anemic (<12g/dl), n(%) Non-anemic (>12g/dl)	11.9±1.81 10(35.7%) 9(22.0%)	12.15±2.08 18(64.2%) 32(78.0%)

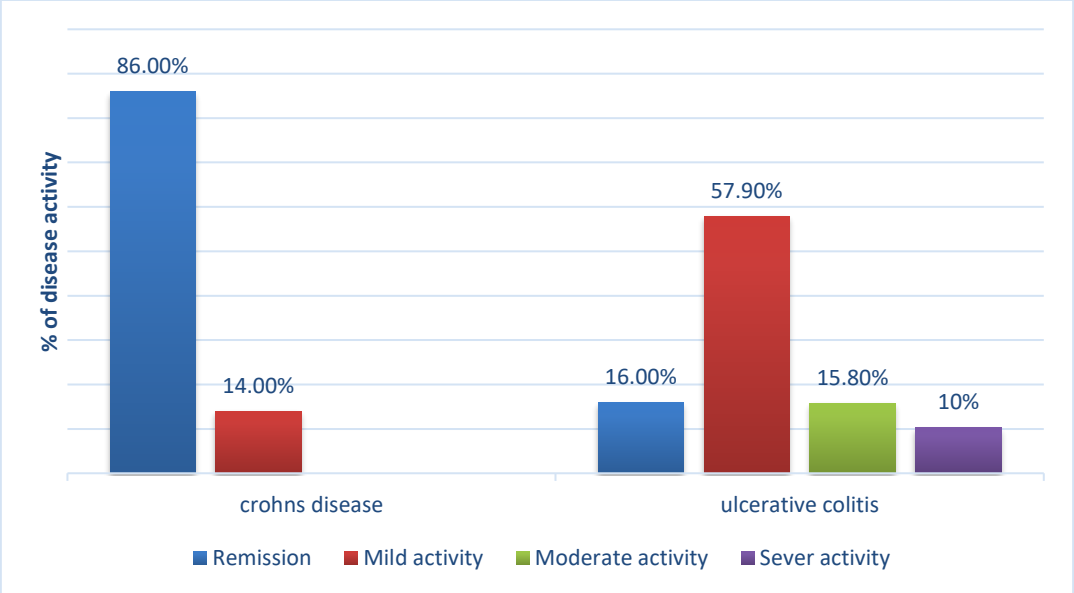

Figure 1. Clinical disease activity in inflammatory bowel disease patients, assessed by the partial Mayo score for ulcerative colitis and the partial Harvey–Bradshaw Index for Crohn's disease.

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The distribution of therapeutic regimens among patients with Crohn's disease and ulcerative colitis (UC) stratified by disease activity (Figure 1, Table 2). Where inn Crohn's disease, the majority of patients in remission (86.2%) and with mild activity (85.8%) were managed with combination therapy (infliximab + azathioprine), while a minority received infliximab or azathioprine monotherapy. For UC, combined therapy was also the predominant treatment, particularly in patients with mild (81.8%) and severe (100%) disease. Moderate UC showed a more variable pattern, with 60% receiving infliximab and 40% receiving combined therapy.

Table 2. Treatments used for Crohn's disease and ulcerative colitis patients according to disease activity status.

Diagnosis	Disease activity	Infliximab n (%)	Azathioprine n (%)	Infliximab + Azathioprine n (%)
Crohn's disease	Remission	3 (6.9)	3 (6.9)	37 (86.2)
	Mild	1 (14.2)	0 (0.0)	6 (85.8)
Ulcerative colitis	Remission	1 (33.3)	0 (0.0)	2 (66.7)
	Mild	2 (18.2)	0 (0.0)	9 (81.8)
	Moderate	3 (60.0)	0 (0.0)	2 (40.0)
	Severe	0 (0.0)	0 (0.0)	2 (100.0)

Discussion

The current study included 69 Libyan patients visiting the outpatient clinic at TUH with confirmed diagnoses of IBD (UC: 19; CD: 50), in a ratio of 0.38:1. This reflects a predominance of Crohn's disease, which is consistent with findings from Saudi cohorts, where CD accounted for 63–66% of cases and UC for 34–37% [11], as well as in Northern France, where Crohn's disease represented 59%, UC 38%, and IBD-unclassified 3% [12], and other studies from Kuwait [13]. In contrast, regional systematic reviews and global studies generally report higher rates of UC compared to CD [14–16].

The median age at diagnosis was 28 years for UC and 23.5 years for CD, which is highly comparable with results from Kuwait, Egypt, and Chile [17–19]. Crohn's disease was more common in both genders (males 84.4% vs females 62%), whereas ulcerative colitis was more common in females (37.8% vs 15.6% in males). These findings are in line with a previous descriptive Libyan study on IBD in Eastern regions, where the female-to-male ratio was 1.6:1 in CD and slightly lower in UC [20]. Similar gender trends have been reported in Saudi Arabian and other Arab studies, where Crohn's disease showed a male predominance or equal sex distribution, contrasting with Western populations, where a slight female predominance is typically observed [21,22]. Such variations may reflect interactions between genetic variants, environmental risk factors, and lifestyle modifications [23].

All smokers reported in this study (n=4) were diagnosed with CD, with none having UC. Although the small number limits firm conclusions, smoking is well known to increase the risk and severity of Crohn's disease while exerting a protective effect in ulcerative colitis [24,25]. The median age at diagnosis was slightly higher in UC than CD (28.0 vs 23.5 years), which is highly consistent with Saudi findings (28.4 years for UC vs 23.8 years for CD) and an Egyptian study (27.3 years for UC vs 29.7 years for CD). However, the age of onset of IBD exhibits notable regional variation. In North America and Western Europe, the average age at onset ranges from 31 to 34 years. In contrast, a Taiwanese study reported mean ages of 38 years for CD and 45 years for UC, whereas in India, the mean age at diagnosis was 38 years for UC and 34 years for CD [26]. These differences may be related to dietary habits (such as high consumption of processed foods and low-fiber diets), smoking, urban living, obesity, poor sleep patterns, and even medication and antibiotic use, all of which have been associated with increased IBD risk, particularly for CD [27].

The mean CRP level was slightly elevated in the UC group (12.71±18.56), consistent with the disease severity distribution shown in Figure 1. Anemia was present in 18/50 CD patients (36%) and in 10/19 UC patients (52.6%), with an overall prevalence of 41.18% among all IBD patients. This prevalence is considerably higher than in a previous systematic review in Europe, which reported an overall anemia prevalence of 24%, with 27% in CD and 21% in UC patients [28]. Although our study focused on patients with IBD diagnosed for more than two years, these anemia rates align with a Swedish study of 790 newly diagnosed IBD patients, where 30% were anemic, with a higher prevalence in CD (42%) than UC (24%) at diagnosis [29]. On the other hand, prior studies of healthy Libyan men and women reported iron deficiency anemia in 34%, with a significantly higher prevalence among women (44.78%) compared to men (13.43%) [30]. These findings suggest that the high prevalence of anemia in our cohort may be attributable not only to IBD but also to poor nutritional habits, inadequate nutritional education, demographic characteristics, chronic health conditions, and socioeconomic influences—factors warranting further investigation [31].

This study also demonstrated a high remission rate (~86% by HBI), which may be related to treatment patterns. A previous trial reported that combination therapy with infliximab and azathioprine achieved

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corticosteroid-free remission in 56.8% of patients, compared with 44.4% with infliximab monotherapy and 30.0% with azathioprine alone [32]. Saudi guidelines likewise recommend combination therapy in selected patients, reflecting evidence of superior outcomes [33]. Similarly, a Kuwaiti single-center study reported substantial physician adherence to infliximab combination strategies, underscoring local practice patterns that support enhanced remission rates [34]. An Iraqi study also reported an 83.3% asymptomatic remission rate among patients treated with infliximab monotherapy [35]. Many of our study participants were already under long-term outpatient follow-up, which may partially explain the high remission rates observed.

Conclusion

In conclusion, CD predominates over UC among Libyan patients in TUH, with younger age at diagnosis, high anemia prevalence, and high remission rates, likely related to infliximab-based therapies and long-term follow-up. Larger multicenter research is needed to validate and generalize these findings over IBD patients in Libya and provide more comprehensive insights.

Conflict of interest. Nil

References

1. Abdelsalam AEM, Abdalla SI. A descriptive study of inflammatory bowel disease in eastern regions of Libya: A based survey of Benghazi's hospitals. Libyan J Med Sci. 2020;4(2):72-5.
2. Al Fadda M, Peedikayil MC, Kagevi I, Al Kahtani K, Al Ben Mousa A, Al Ashgar HI, et al. Inflammatory bowel disease in Saudi Arabia: a hospital-based clinical study of 312 patients. Ann Saudi Med. 2012;32(3):276-82.
3. Ali RA, Hussein HA, Salih AM. Effectiveness of biologic therapy in inflammatory bowel disease: A case series from Duhok, Iraq. Hist Med J. 2022;2(3):70-6.
4. Aljebreen AM, Alharbi OR, Azzam NA, Almalki AS, Alshamrani AS, Alharbi OR, et al. Clinical epidemiology and phenotypic characteristics of Crohn's disease in the central region of Saudi Arabia. Saudi J Gastroenterol. 2014;20(3):162-9.
5. Al-Mofarreh MA, Al-Mofleh IA. Emerging inflammatory bowel disease in Saudi outpatients: A report of 693 cases. Saudi J Gastroenterol. 2013;19(1):16-22.
6. Al-Muharraqi A, Al-Sabah S, Al-Qattan R. Gastroenterologists' adherence to tumor necrosis factor antagonist combination therapy in Kuwait: A real-world evaluation. Front Med (Lausanne). 2021;8:633045.
7. Al-Nakib B, Radhakrishnan S, Jacob GS, Al-Mahmoud F, Al-Ramadan S. Demography and clinical course of ulcerative colitis in Arabs based on the Montréal classification. World J Gastroenterol. 2014;20(46):17525-31.
8. Al-Qabandi W, Buhamrah E, Hamadi K, Al-Osaimi S, Al-Ruwayeh A, Madda J. Inflammatory bowel disease in children: an evolving problem in Kuwait. Saudi J Gastroenterol. 2011;17(4):323-7.
9. Alsheikh M. Prevalence and risk factors of iron-deficiency anemia in Saudi female medical students. Saudi J Health Sci. 2018;11(3):145-50.
10. Alsakarneh S, Ahmed M, Jaber F, Wong D, Alshara M, Alsharif M, et al. Inflammatory bowel disease burden in the Middle East and North Africa Region: A comprehensive analysis of incidence, prevalence, and mortality from 1990-2019. Ann Gastroenterol. 2024;37(5):527-35.
11. Ananthakrishnan AN. Epidemiology and risk factors for IBD. Nat Rev Gastroenterol Hepatol. 2015;12(4):205-17.
12. Baumgart DC, Carding SR. Inflammatory bowel disease: cause and immunobiology. Lancet. 2007;369(9573):1627-40.
13. Burger D, Travis S. Conventional medical management of inflammatory bowel disease. Gastroenterology. 2011;140(6):1827-1837.e2.
14. Chandra Sekar PK, Veerabathiran R. Genetics of inflammatory bowel disease: Current understanding and future directions. Russ J Gastroenterol Hepatol Coloproctol. 2024;34(5):7-16.
15. Chhibba T, Gros B, King JA, Ma C, Jairath V, Sands BE, et al. Environmental risk factors of inflammatory bowel disease: Toward a strategy of preventative health. J Crohns Colitis. 2025;19(4):jjaf042.
16. Colombel JF, Sandborn WJ, Reinisch W, Mantzaris GJ, Kornbluth A, Rachmilewitz D, et al. Infliximab, azathioprine, or combination therapy for Crohn's disease. N Engl J Med. 2010;362(15):1383-95.
17. Coward S, Clement F, Benchimol EI, Bernstein CN, Avina-Zubieta JA, Bitton A, et al. Past and future burden of inflammatory bowel diseases based on modeling of population-based data. Gastroenterology. 2019;156(5):1345-1353.e4.
18. El-Masry M, El-Khayat HR, Al-Falouji A, Rizk H, Farid M, Ibrahim I. Inflammatory bowel disease in Cairo, Egypt: Clinical, endoscopic, and histological features. Arab J Gastroenterol. 2014;15(1):20-3.
19. Elzahaf RA, Omar M. Prevalence of anaemia among pregnant women in Derna city, Libya. Int J Community Med Public Health. 2016;3(6):1540-5.
20. Esmat S, El Nady M, Elfekki M, Elsherif Y, Naga M. Epidemiological and clinical characteristics of inflammatory bowel diseases in Cairo, Egypt. World J Gastroenterol. 2014;20(3):814-21.
21. Filmman N, Rey J, Schneeweiss S, Zoller H, Stojakovic T, Ghosh S, et al. Prevalence of anemia in inflammatory bowel diseases in European countries: A systematic review and individual patient data meta-analysis. Inflamm Bowel Dis. 2014;20(5):936-45.
22. Hammer T, Langholz E. The epidemiology of inflammatory bowel disease: Balance between East and West? A narrative review. Dig Med Res. 2020;3:79.

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23. Khor B, Gardet A, Xavier RJ. Genetics and pathogenesis of inflammatory bowel disease. Nature. 2011;474(7351):307-17.
24. Mahid SS, Minor KS, Soto RE, Hornung CA, Galandiuk S. Smoking and inflammatory bowel disease: A meta-analysis. Mayo Clin Proc. 2006;81(11):1462-71.
25. Mak WY, Zhao M, Ng SC, Burisch J. The epidemiology of inflammatory bowel disease: East meets West. J Gastroenterol Hepatol. 2020;35(3):380-9.
26. Mosli M, Alawadhi S, Hasan F, Abou Rached A, Sanai F, Danese S, et al. Incidence, prevalence, and clinical epidemiology of inflammatory bowel disease in the Arab world: A systematic review and meta-analysis. Inflamm Intest Dis. 2021;6(3):123-31.
27. Mosli M, Alawadhi S, Hasan F. Incidence, prevalence, and clinical epidemiology of inflammatory bowel disease in the Arab world: A systematic review and meta-analysis. Inflamm Intest Dis. 2021;6(4):166-78.
28. Sarter H, Agoute E, Fumery M, Savoye G, Salleron J, Turck D, et al. Incidence, prevalence, and clinical presentation of inflammatory bowel diseases in Northern France: A 30-year population-based study. Lancet Reg Health Eur. 2024;47:101097.
29. Saudi IBD Consensus Group. Consensus guidance for the diagnosis and management of inflammatory bowel disease in Saudi Arabia. Saudi J Gastroenterol Allied Sci. 2023;29(1):12-25.
30. Shehab M, Azzam N, Al-Bawardy B, Al Ghamdi M, Al Kaabi S, Al Khatry M, et al. P1260 Demographics and clinical characteristics of inflammatory bowel disease in the Middle East and North Africa: A multi-nation cross-sectional (MIRAGE) study. J Crohns Colitis. 2025;19(Supplement_1):i2280-i2281.
31. Simian D, Fluxá D, Flores L, Lubascher J, Ibáñez P, Figueroa C, et al. Inflammatory bowel disease: A descriptive study of 716 local Chilean patients. World J Gastroenterol. 2016;22(22):5267-75.
32. Sjöberg D, Holmström T, Larsson M, Nielsen AL, Thulin M, Strid H, et al. Anemia in a population-based IBD cohort (ICURE): Still high prevalence after 1 year, especially among pediatric patients. Inflamm Bowel Dis. 2014;20(12):2268-76.
33. To N, Gracie DJ, Ford AC. Systematic review with meta-analysis: The adverse effects of tobacco smoking on the natural history of Crohn's disease. Aliment Pharmacol Ther. 2016;43(5):549-61.
34. Baumgart DC, Carding SR. Inflammatory bowel disease: cause and immunobiology. Lancet. 2007;369(9573):1627-40.
35. Simian D, Fluxá D, Flores L, Lubascher J, Ibáñez P, Figueroa C, et al. Inflammatory bowel disease: A descriptive study of 716 local Chilean patients. World J Gastroenterol. 2016;22(22):5267-75.

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