Inflammatory bowel disease in Saudi Arabia: a review article

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ABSTRACT

Inflammatory Bowel Disease (IBD) encompasses chronic intestinal disorders, like ulcerative colitis (UC) and Crohn’s disease, causing gastrointestinal (GI) tract inflammation. Saudi Arabia, particularly among pediatric populations, has seen an increasing prevalence of IBD. Clinical symptoms, including abdominal pain, diarrhea, weight loss, and rectal bleeding, significantly impact patients’ lives, requiring lifelong medical care, especially for children. The study highlights the growing burden of IBD in Saudi Arabia due to insufficient epidemiological data and rising disease incidence. Early IBD diagnosis is crucial for successful management and improved outcomes. Effective treatments for mild to moderate UC, such as 5-aminosalicylic acid-based drugs like mesalazine and sulfasalazine, show promising results. However, patients may experience ongoing GI symptoms even after successful treatment, underscoring the need for comprehensive care. Frequent remissions and relapses pose a challenge, necessitating continuous monitoring and appropriate medical intervention. Untreated symptoms can negatively impact patients’ well-being and increase healthcare expenditures. Hence, exploring better approaches for long-term symptom control and mucosal repair is essential. In severe cases, surgical interventions like total colectomy become necessary, but the focus should be on optimizing medical therapies to reduce the need for drastic measures. In conclusion, early detection, accurate diagnosis, and proper management of IBD in Saudi Arabia are vital. Collaborative efforts among healthcare professionals, researchers, and policymakers are required to gather comprehensive epidemiological data and develop targeted strategies for improving IBD care. Addressing these challenges and opportunities can enhance the quality of life for IBD patients in Saudi Arabia and potentially alleviate the burden on the healthcare system.

Keywords: Inflammatory bowel disease, Crohn’s disease, ulcerative colitis, Saudi Arabia.

Introduction

IBD, popularly referred to as inflammatory bowel disease, is a long-term, recurrent inflammatory illness characterized by the inflammation of the gastrointestinal (GI) system with a wide range of intestinal and extraintestinal symptoms. IBD discovered as an adult disorder is different from IBD discovered as a child disorder. IBD is more frequently diagnosed in children before the development of disease-related clinical manifestations. For instance, the occurrence of pediatric Crohn’s disease (CD) is frequently identified by an inflammatory activity before the onset of fibro-stenotic or penetrating issues [1]. However, being diagnosed with IBD at a young age presents life challenges, such as the psychological impact of managing a chronic illness for both the patient and their family, the potential for missed educational opportunities, and the potential for stunted linear growth. Children with IBD require lifetime medical care, which is more expensive than caring for older people [2]. Because persons with IBD are more likely to have had less environmental influences as children, studying IBD in youngsters offers an exceptional opportunity to examine environmental exposures to IBD. There is conflicting information in the literature about IBD epidemiology in Saudi Arabia [3]. So, we will discuss the IBD nature, its incidence, characteristics, diagnostic delay of pediatric IBD, genetic susceptibility, microbial dysbiosis, and treatment. To be more familiar with understanding and dealing with, especially in Saudi Arabia compared with other countries worldwide.

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The Prevalence and Incidence of IBD

According to previous medical reports, IBD and obesity are both on the increase among various regions worldwide. In Saudi Arabia, obesity affects a large group of the population. Near 70% of people are either overweight or obese. The connection between obesity and IBD has only been briefly studied [2]. Obesity risk may rise as a result of IBD treatment. Steroid use is unquestionably pertinent. A rise in body weight of more than 10 kg can occur after 1 year of corticosteroid medical treatment [4]. Similar to quitting smoking, biological substances can also cause weight gain, but to a lower extent. IBD's extra-intestinal manifestations significantly lower the quality of life and increase morbidity and mortality. The most typical extra-intestinal symptoms were more frequently linked to ulcerative colitis (UC). The greater usage of steroids by these patients to treat IBD has been related to this in previous research [5]. Despite recent research indicating a rise in the prevalence of IBD in Arab nations, there remains a lack of knowledge regarding the characteristics of IBD and the development of the disease in this region [4]. Internationally, the prevalence of IBD is rising, especially in countries with originally low rates. Previous studies on the epidemiology of IBD in children found an insufficient amount of knowledge related [2].

Symptoms

Both functional bowel disease and active IBD share symptoms like diarrhea and abdominal pain. Although the treatment for IBD remains successful and leads to disease remission and mucosal repair, patients who have received a confirmed diagnosis of IBD (e.g., CD and UC) may continue to have GI symptoms [2]. Recognizing functional symptoms in IBD patients with inactive disease makes it easier to prevent the risk of side effects brought on by intensifying IBD-focused treatments. In IBD patients, the symptoms of functional GI are associated with higher healthcare costs, poor life quality, depression, and anxiety. As a result, the diagnosis of the symptoms indicative of functional GI symptoms becomes critical in choosing an efficient therapy strategy [6].

Disease Characteristics

In Lebanon and Saudi Arabia, severe colitis predominated (42.7%-45.5%) for UC. In Qatar and the United Arab Emirates (UAE), the most common IBD has been identified to be the left-side colitis (48%-55%). Based on this indication, it can be observed that the prevalence of the disease among patients with UC in West Asia is generally similar to that of individuals residing in South Asia and Southeast Asia [3]. Within West Asia, the similarity in the disease’s distribution was seen for CD. Following colonic involvement (7%-20.5%), ileal involvement (22.8%-38.6%), and ileocolonic involvement (40.9%-56%), respectively, were recorded in Qatar, Saudi Arabia, the UAE, and Lebanon [4]. Inflammatory behavior appeared in 49%-60% of CD patients, structuring was observed in 32%-40%, penetrating behavior appeared in 7%-18%, and perianal disease appeared in 7%-19%. Related to the patients from Southeast and South Asia, patients from West Asia were more likely to develop complications of CD [5]. It is difficult to compare the disease phenotype across studies in Asia, nevertheless, because of the variations in the timing of disease evaluation and hospital-based analysis, which might not yet have taken mild disease into account [7].

Diagnostic Delay of Pediatric IBD

Early IBD diagnosis enables prompt management and improves outcomes. A delayed diagnosis, on the other hand, is linked to a delayed course of treatment, which results in disease activity that worsens with time and lowers the quality of life while also increasing the risk of complications that call for early surgery [7]. There are problems when IBD is not diagnosed right away (delayed diagnosis). IBD is a descriptive term for several recurrent, chronic diseases with unknown causes. Three clinical appearances include IBD-unclassified, UC, and CD. In patients from the West, a higher incidence was observed. The incidence and temporal patterns, however, appear to be rising, according to recent studies from developing nations [8]. The majority of the research on risk factors and the health effects of lengthy diagnosis delays for IBD focuses on adults and Western populations. There is a dearth of children’s literature and information from non-Western populations [9].

Genetic susceptibility

In IBD that first manifests in children compared to adults, there may be a variation in the role of the environment, the interaction of genes, and genetics. In a study that looked at the relationship between NOD2 and smoking, for instance, the penetrance patterns of NOD2 and cigarette smoking exhibited distinct trajectories across the age spectrum. Specifically, the penetrance of the 1,007 fs single nucleotide polymorphism was found to be most pronounced among individuals diagnosed at or below 16 years of age, gradually declining as age increased. Conversely, the prevalence of smoking history demonstrated an upward trend with advancing age [10].

The hereditary disease burden, as indicated by genetic risk scores, has been observed to decrease with advancing age, particularly in CD individuals. In newly diagnosed patients, the CD:UC ratio has changed. For instance, a CD diagnosis is confirmed in approximately two-thirds of children with an equal proportion of adults receiving a CD or UC diagnosis. This evolving genetic risk profile may partially explain the change in the CD:UC ratio [4].

Microbial dysbiosis

In inducing chronic inflammation in a genetically vulnerable patient, the intestinal microbiota plays a crucial role in the etiology of IBD. Fourteen genera (Beggiatoa, Burkholderia, Cyanothece, Enterococcus, Escherichia,
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According to research from Saudi Arabia, 85.2% of the patients responded to corticosteroid treatment, 7% of them became heavily dependent on them, and 6.2% did not. The least amount of immuno-modulators was administered, and only a few patients obtained anti-TNF medications across all investigations. Three studies’ hospitalization rates - 44.5% in Kuwait, 47% in Saudi Arabia, and 71% in Kuwait - were all recorded, and they were all widely regarded as high [5,9].

The primary treatments for mild to moderate UC consist of medications containing 5-aminosalicylic acid (5-ASA), such as sulfasalazine and mesalazine. These drugs have been proven to be both effective and safe, as long as they are administered at appropriate dosages. Sulfasalazine is particularly useful for inducing remission of active disease, while mesalazine is effective in preventing relapse of quiescent disease [12]. When 5-ASA medicines are not producing remission, doctors need to double-check that patients are taking the correct dosage and following the treatment plan [13].

The primary care physician should be responsible for coordinating vaccinations. It is recommended that individuals diagnosed with IBD receive vaccinations for pneumococcal and meningococcal infections, pertussis, diphtheria, human papillomavirus, tetanus, and hepatitis A and B regardless of their age [14]. Due to the increased risk of non-melanoma skin cancer, patients getting thiopurine therapy should have annual skin checks [13].

Patients with IBD should be encouraged to eat a nutritious, well-balanced diet high in fresh produce. Foods with plenty of additives like preservatives and emulsifiers are probably best avoided. A low-fiber diet is indicated for a well-balanced diet high in fresh produce. Foods with plenty of additives like preservatives and emulsifiers are probably best avoided. A low-fiber diet is indicated for patients with intestinal strictures or active colitis. When it comes to CD, smoking has been linked to significantly worse outcomes [13].

Surgical management

The restorative proctocolectomy with ileal pouch-anal anastomosis (RPC-IPAA), or sphincter-preserving pelvic pouch procedure, was developed for UC and reconstructed during the previous four decades, and it is widely regarded as one of the greatest triumphs in colon and rectum surgery [16]. In Crohn’s colitis (CC), endoscopic balloon dilatation and surgical resection are the only treatments for fibrotic strictures. Surgical resection aims to remove downstream blockages or constriction and preserve the upstream distended bowel to preserve the Lumina continuity; however, patients still experience long-term bowel symptoms such as abdominal discomfort, pain, and constipation even after the procedure is completed [17].

In intermediate colitis, when the condition is more advanced, a pathology diagnosis can be aided by performing a complete abdominal colectomy (transabdominal cervical cerclage) first. The next step may be a proctectomy (for CC) or IPAA (for UC). An RPC-IPAA may be considered in cases when UC is suspected and in a very small subset of individuals with a CC-like phenotype without the ileal or anal disease [17].

Monitoring

Because the therapeutic goal is mucosal repair, there is no association between clinical symptoms and endoscopic mucosal appearance. We evaluate patients clinically and with colonoscopy 6 to 12 months after establishing clinical remission. It might also be beneficial to take advantage of non-invasive markers of inflammation. We collect fecal biomarkers (such as fecal calprotectin or fecal lactoferrin) and inflammatory markers [such as C-reactive protein (CRP)] at the time of colonoscopy, and we correlate these tests with the degree of mucosal healing [18]. We do not depend simply on CRP to monitor patients with inactive disease since, in certain UC patients, CRP does not correlate with endoscopic results. Every 6 to 12 months, we continue to test noninvasive biomarkers in patients who are in remission [19]. We frequently perform lower endoscopy for patients with aberrant results (i.e., calprotectin 150 mcg/g, positive lactoferrin, or increased CRP) to evaluate endoscopic disease activity and inform therapeutic modifications [18]. We evaluate inflammatory biomarkers because they have been related to an increased likelihood of disease relapse. In a meta-analysis of 17 studies involving 1,286 patients with UC in symptomatic remission, those with increased fecal calprotectin (defined in most studies as >150 mcg/g) had a greater chance of disease relapse (risk ratio 4.36, 95% CI 3.48-5.47) compared to those with a normal level after a median follow-up of 1 year [19].
diagnosis of IBD in Saudi Arabia has stabilized, with more frequent diagnoses of CD than UC. The disease mainly affects individuals in their second and third decades, with a higher prevalence among men. Surprisingly, around 50% of IBD patients were overweight or obese, but smoking or a family history of IBD did not correlate with worse outcomes. Joint involvement was the most common extra-intestinal symptom. Studies indicate that UC patients undergoing biological treatment experience a significant reduction in the need for surgical intervention, reflecting progress in IBD management in Saudi Arabia.

**List of Abbreviations**
- 5-ASA: 5-Aminosalicylic acid
- CD: Crohn's disease
- GI: Gastrointestinal tract
- IBD: Inflammatory bowel disease
- UC: Ulcerative colitis

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