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The Impact of a Real-Life Inflammatory Bowel Disease Education Course for Brazilian Physicians from the Perspective of Its Participants

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Abstract

Background: Physicians must acquire the necessary skills to provide Inflammatory Bowel Disease (IBD) patients with state-of-the-art clinical care, aiming to improve patient's quality of life and disease outcomes. **Purpose:** To describe the queries and experiences of doctors enrolled in an IBD education course and to evaluate the impact of the course. **Methods:** A retrospective study included 100 physicians, of which 78 attended the course. A questionnaire was applied evaluating how the course had an impact on their IBD-knowledge. The 20-hour-course consisted of practical "real-life" activities and theoretical discussions. **Results:** The majority of doctors' expertise was in gastroenterology (53%) and coloproctology (44%). A significant portion had no experience with biological therapy for ulcerative colitis (19.4%) or Crohn's disease (5.05%). The main topics doctors wanted to discuss were biological therapy (93%), new drugs (74%) and differential diagnosis (64%). A considerable number of physicians did not feel confident at prescribing biological therapy before the course (44.4%), a percentage that decreased to 8.5% after the course ($p < 0.0001$). The impact of the course was considered high (grades 9 and 10) by most of the participants (78.2%). **Discussion:** The ideal course should have a practical and theoretical component, as well as the support of an experienced multidisciplinary team. A real-life practical-theoretical IBD course proved a success at increasing IBD knowledge.

Keywords

Continuing Medical Education, Crohn's Disease, Ulcerative Colitis, Inflammatory Bowel Disease

1. Introduction

Inflammatory bowel disease (IBD) is characterized by chronic inflammation of the gastrointestinal tract, represented by Crohn's disease (CD) and ulcerative colitis (UC). The aim of the treatment is to achieve clinical and endoscopic remission [1], in addition to restoring the quality of life of patients. Several drugs are available such as anti-TNFα, anti-IL23 agents, leukocyte trafficking inhibitors and Janus kinase (JAK) inhibitors [2], in addition to several molecules under investigation in clinical trials phase 2 and 3 [3].

The choice of the best therapy for each patient should be individualized, and is based on the underlying disease, the presence of IBD complications such as perianal disease or extraintestinal manifestations, drug efficacy and drug safety profile, in addition to treatment cost and the patients' preferences, mainly based on the route of administration. Furthermore, the positioning of therapies with the choice of the best drug as the first or second line of treatment for each disease is extremely important in the treatment strategy and can interfere with the patient's prognosis.

The Selecting Therapeutic Targets in Inflammatory Bowel Disease (STRIDE I) program, published in 2015 [1], was an initiative of the International Organization for the Study of Inflammatory Bowel Diseases (IOIBD) in which a committee of 28 IBD specialists developed recommendations based on a systematic literature review and expert opinion defining potential treatment targets to be used for a "treat-to-target" clinical management strategy. The strategy has been updated in 2021—STRIDE-II [4], and defined 13 recommendations for treating to target in CD and UC, in both adults and pediatric population. The main targets for IBD treatment were defined as clinical response and remission, endoscopic healing, restoration of quality of life and absence of disability [4]. The normalization of biomarkers such as C-reactive protein and fecal calprotectin was considered an intermediate treatment target in UC and CD, and transmural healing in CD and histological healing in UC have been newly recognized as important adjunctive measures, but have not been incorporated as new treatment targets [4].

In view of new drugs and the complexity of IBD treatment, gastroenterologists, surgeons, and the multidisciplinary team should constantly update their knowledge about IBD in order to improve the quality of patient care aiming for adequate disease control and low complication rates through continuing medical education.

Continuing medical education in IBD is rarely reported in the literature. Higgins *et al.* [5] studied the impact of continuing medical education activities in IBD evaluating baseline and follow-up (post-education) charts of patients with UC who received care from a group of community-based gastroenterologists (n = 20) compared to a nonintervention control group (n = 20). In total, 12 measures related with disease characteristics, treatment, immunization, safety, adherence, surgery and cancer risk were investigated. The intervention group had significantly greater magnitudes of improvement in 7 measures when compared

to control group showing the benefits of education interventions aimed at improving the quality of care for patients with IBD.

So, the aim of the present article was to describe the queries and experiences of physicians enrolled in IBD medical education course and evaluate its impact on the participants' point of view.

2. Methods

This was a retrospective study. The study was carried out at the Botucatu Medical School, Brazil, as well as the IBD medical education course. Data were collected from 2017-2019. The sample consisted of 100 physicians came from different health services from Brazil composed by physician gastroenterologists, endoscopist or coloproctologists who worked with IBD patient. The exclusion criteria were being a physician specialist in IBD. Participants were asked about their main doubts regarding IBD assistance. Following the course, they evaluated its impact on their knowledge base.

3. Evaluation Questionnaires

A questionnaire was done exclusively for this study and consisted of multiple-choice closed questions and was carried out 3 - 6 months before the course to evaluate the clinical experience in IBD management, self-confidence in prescribing biological therapies, interesting topics they would like to discuss during the course and its expected schedule. At the two-day course, they answered another questionnaire assessing the impact of the course on their IBD knowledge (Appendix 1 and 2).

4. Inflammatory Bowel Disease Medical Education Course

A 20-hour course with "real-life" practical activities and theoretical discussions was performed in 2 days. The activities carried out during the course included discussions of real-life cases treated in IBD multidisciplinary outpatient clinic (5 h); surgical approach to perianal CD (5 h); endoscopic exams in IBD patients (4 h) and discussions of clinical IBD cases (6 h). Six courses were performed between May and August 2017 with 10 to 14 professionals enrolled in each.

The participants followed the IBD multidisciplinary team activities with gastroenterologists, proctologists, nutritionists, psychologists and IBD nurses. The surgical procedure consisted of managing perianal fistulae in patients with CD. Endoscopic exams included colonoscopy and single balloon enteroscopy. IBD topics for discussion included diagnostic approach, differential diagnosis, conventional treatment, biological therapy and new drugs, use of biosimilar drugs, postoperative follow-up, management in pregnancy and lactation, nutritional therapy and nursing care.

5. Statistical Analysis

Data are expressed as mean ± standard deviation or median (range) for conti-

nuous variables, and as frequency (proportion) for qualitative variables. The chi-square test and the Fisher's exact test were used, as appropriate, to compare categorical data. A p-value < 0.05 was considered to indicate statistical significance. The statistical analyses were performed using SAS version 9.3 for Windows (SAS Institute Inc., Cary, NC, USA).

6. Ethics

The study was in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration. The study was approved by the Research Ethics Committee of the Botucatu Medical School (CAAE 81953317.7.0000.5411).

7. Results

A total of 100 physicians were included, half of them were female. The main specialty was gastroenterology (53%), followed by coloproctology (44%) and endoscopy (3%). The total time of practical experience was 12.5 ± 8.23 years and the majority had been working for more than 10 years (56%). Most of them reported work in private clinics or hospitals (74%), with a total of 42% who also worked in public health services.

Regarding IBD experience, the majority had attended to 10 - 50 IBD patients in a lifetime for both UC and CD (Table 1), overall demonstrating low clinical experience in IBD. Moreover, the clinical experience in use of biological therapy was even less with a total of 11% of participants reporting that they did not feel confident in prescribing this therapy. The main doubts described were lack of opportunity to discuss with a more experienced team (62%); indications of changing biological therapy (32%); optimization (29%); prescription (6%); follow-up of patients (6%) and others such as biological screening tests (5%), response assessment (4%) and access to drugs (3%).

All participants believed that they could improve their experience after a real-life IBD education course. The main topics chosen by participants to discuss during the course were: 1) Biological therapy themes such as primary failure, loss of response, optimization, trough level, anti-drug antibody (93%); 2) New drugs in IBD (74%); 3) Indications, contraindications and biological therapy monitoring (72%) and others, presented in Table 2.

Regarding the activities during the course, the participants expected: 1) Discussion of clinical cases in an IBD referral center: "How do I do XYZ?" (89%); 2) Discussion of more current and prevalent themes in IBD (71%); 3) Endoscopic exams such as colonoscopy and enteroscopy (37%); 4) Live activities such as surgeries of perianal CD (35%); 5) Nutrition in IBD (34%); 6) Abdominal surgeries for CD (28%) or UC (26%) and 7) Nursing care in IBD (10%).

Impact of Inflammatory Bowel Disease Medical Education Course

From a total of 100 physicians who answered the questions, 78 completed the course. They scored the impact of the course as 9.37 ± 0.97 points (1 - 10). The

impact was considered high (grades 9 and 10) by most of the participants (78.2%). The number of physicians that did not feel confident to prescribe biological therapy before the course (44.4%) decreased to 8.5% ($p < 0.0001$) after the course. All participants reported they would recommend the course to colleagues and 98.96% would attend a future event.

Table 1. Clinical characteristics of the participants.

	Participants (n = 100)
Gender female, n (%)	50 (50%)
Clinical experience as physician (y), mean (SD)	12.48 (±8.23)
Number of ulcerative colitis patients in the center, n (%)*	
none	1 (1.0%)
1 to 10	25 (26.0%)
10 to 50	52 (54.2%)
50 to 100	12 (12.5%)
>100	6 (6.3%)
Number of Crohn's disease patients in the center, n (%)**	
none	1 (1.0%)
1 to 10	35 (35.4%)
10 to 50	45 (45.5%)
50 to 100	12 (12.0%)
>100	6 (6.1%)
Number of ulcerative colitis patients receiving biological therapy, n (%)***	
none	18 (19.4%)
1 to 10	52 (55.9%)
10 to 50	19 (20.4%
50 to 100	3 (3.2%)
>100	1 (1.1%)
Number of Crohn's disease patients receiving biological therapy, n (%)**	
none	5 (5.1%)
1 to 10	51 (51.5%)
10 to 50	37 (37.4%)
50 to 100	3 (3.0%)
>100	3 (3.0%)

* n = 96; ** n = 99; *** n = 93.

Table 2. Main IBD topics chosen by participants to discuss during the real-life IBD education course.

Topics	Percentage
Biological therapy themes such as primary failure, loss of response, optimization, trough level, anti-drug antibody	93%
New drugs in IBD	74%
Indications, contraindications and biological therapy monitoring	72%
Investigation of chronic diarrhea and IBD differential diagnosis	64%
IBD extra intestinal manifestations	63%
Management of pregnancy and breastfeeding in IBD patients	60%
IBD diagnostic approach such as biomarkers and endoscopic or radiologic exams	56%
Conventional treatment of IBD patients	55%
CD postoperative follow-up	54%
Scientific articles with real-life data	51%

8. Discussion

IBD are chronic and disabling diseases in which the success of treatment is based on early diagnosis and prescription of efficacious drugs to avoid complications. Since the advent of biological therapy, a decrease in hospitalization and surgery rates has been observed [6], as well as an increase in patients' quality of life [7]. However, sometimes the professionals enrolled in IBD care don't have the knowledge necessary to manage and prescribe biological therapy and newer drug treatments. Therefore, we must encourage continual medical education and dissemination of knowledge in the field of IBD in order to improve patient prognosis and avoid risks relating to inadvertent use of medications.

Ideally, IBD management should be performed in referral centers, but with the increased incidence and prevalence observed in recent years, especially in developing countries [8] [9], gastroenterologists and surgeons should be prepared to receive patients, properly diagnose and initiate treatment in primary or secondary care.

In the present study, it was observed that many gastroenterologists and surgeons do not feel competent in prescribing biological therapy to their patients. In addition, they have many other questions such as how to investigate chronic diarrhea and IBD differential diagnosis, how to navigate the disease during pregnancy and breastfeeding and how to manage the adequate clinical follow-up of these patients. These doubts can be justified given their limited contact with IBD patients in clinical practice, by the lack of exposure to IBD during graduation course or medical residency, and by the few opportunities to participate in medical courses on IBD. However, regarding IBD courses there have been many changes in recent years with an increase in investment for continued medical education all over the world. One successful initiative is "The Inflammatory Bowel Disease Live Interinstitutional Interdisciplinary Videoconference Education" (IBD LIVE), which is a multisite virtual conference platform to discuss complex patient management on which up to 11 different institutions can interact and discuss [10]. The program provides real-time information sharing that can impact patient care and improve their outcomes [10].

Quality of specialist communication was one of the pillars of quality of care identified by patients in the IBD2020 survey, a global forum for standards of IBD care [11]. A total of 7507 patients from 8 countries participated in the survey, the majority consulted a gastroenterologist (74.0%), followed by a primary care physician (8.1%), specialist nurse (7.1%), surgeon (6.4%), and non-gastroenterology hospital physician (4.4%) [11]. Despite the importance of the issue, only half of the patients described communication as excellent or very good [11].

The prognosis of IBD patients depends on the proper diagnosis and early treatment of the disease within the window of opportunity followed closely by strict monitoring [12]. It is essential that physicians have at least the minimum knowledge for proper management and treatment of these patients, aiming to prevent complications and reducing exposure to unnecessary drugs, as well as an

awareness of immunosuppression risks, mainly infection and malignancy.

The study presented some limitations such as sample size, the type of study performed (retrospective) and the questionnaires applied that were not previously validated. On the other hand, the study shows the importance of continuing medical education in IBD in order to improve access to knowledge, impacting on improving patient care. IBD courses and experienced staff are essential to the continuing medical education of healthcare professionals.

9. Conclusion

In conclusion, few physicians have previous experience in biological therapy; doctors want to discuss topics related to IBD treatment, such as biological therapy and new drugs, as well as topics related to the surgical approach and disease diagnosis. The ideal course should have a practical and theoretical component, including experience in outpatient clinic, complementary exams and teaching of surgical approaches as well as the support of an experienced multidisciplinary team.

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Authors' Contributions

All authors contributed to this manuscript. Rodrigo F Beraldo, Julio P Baima, Jaqueline R Barros, Fernanda L Renosto, Rogerio Saad-Hossne, Ligia Y Sassaki contributed to the conception and design of the study, acquisition, analysis and interpretation of data, drafting of the article, critical revision of intellectual content and final approval of the submitted version.

Data Availability Statement

The datasets, including the redacted study protocol, redacted statistical analysis plan, and individual participants' data supporting the results reported in this article, will be made available within three months from initial request to researchers who provide a methodologically sound proposal. The data will be provided after its de-identification, in compliance with applicable privacy laws, data protection and requirements for consent and anonymization.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix 1. Semi-Structured Pre-Course Questionnaire on Continuing Medical Education in IBD

1. Your main specialty:
   ( ) Gastroenterology
   ( ) Coloproctology
   ( ) Endoscopy
2. Total time of practical experience: _____ years
3. Workplace:
   ( ) Private clinics or hospitals
   ( ) Public health services
4. How many patients are you currently treating with Inflammatory Bowel Diseases?

	none	1 - 10	10 - 50	50 - 100	>100
Ulcerative Colitis					
Crohn's Disease					

5. How many patients do you follow in use of biological therapy?

	none	1 - 10	10 - 50	50 - 100	>100
Ulcerative Colitis					
Crohn's Disease					

6. Do you feel confident in prescribing biological therapy?
   () Yes () No
7. What are the main doubts regarding the use of biological therapy?
   ( ) How to perform screening tests
   ( ) How to prescribe the drugs
   ( ) The access to drugs
   ( ) How to perform the follow-up of the patients
   ( ) How to evaluate the response to biological therapy
   ( ) How to perform drug optimization
   ( ) The indications of changing biological therapy
   ( ) Lack of opportunity to discuss with a more experienced team
8. Do you think your participation in an IBD real-life course could help?
   ( ) Yes ( ) No
9. What topics would you like to be covered during the course?
   ( ) Investigation of chronic diarrhea and IBD differential diagnosis
   ( ) IBD diagnostic approach such as biomarkers and endoscopic or radiologic exams
   ( ) Conventional treatment of IBD patients
   ( ) Indications, contraindications and biological therapy monitoring
   ( ) Biological therapy themes such as primary failure, loss of response, opti-

mization, trough level, anti-drug antibody
( ) New drugs in IBD
( ) Articles with real-life data
( ) Management of pregnancy and breastfeeding in IBD patients
( ) IBD extra intestinal manifestations
( ) Surgery approach
( ) CD post-operative follow-up
( ) UC post-operative follow-up
( ) Pivotal studies

10. What activities would you like to follow during the course?
( ) Discussion of more current and prevalent themes in IBD
( ) Discussion of clinical cases in an IBD referral center: "How do I do XYZ?"
( ) Endoscopic exams such as colonoscopy and enteroscopy
( ) Abdominal surgeries for CD or UC
( ) Live activities such as surgeries of perianal CD
( ) Nursing care in IBD
( ) Nutrition in IBD

Appendix 2. Semi-Structured Pos-Course Questionnaire on Continuing Medical Education in IBD

1. How do you assess the course's impact on your knowledge of IBD?
0 (no impact) a 10 (great impact)
0 ----- 1 ------ 2 ------ 3 ------ 4 ------ 5 ------ 6 ------ 7 ------ 8 ------ 9 ------ 10

2. How confident did you feel about prescribing biological therapy before taking the course?
() 0% () 25%( ) 50% ( ) 75%( )100%

3. How confident do you feel now to prescribe biological therapy?
() 0% () 25%( ) 50% ( ) 75%( )100%

4. Do you have any suggestions to help us improve the event in the future?

5. Would you recommend this course to any colleagues?
() Yes
() No

6. Based on your experience with this event, how likely are you to participate in future events at this same location?
() 0%
() 25%
() 50%
() 75%
() 100%