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10-year retrospective cohort analysis of inflammatory bowel disease in a specialized clinic of Brazil

Análise de coorte histórica de 10 anos de ambulatório especializado em doença inflamatória intestinal do Brasil

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Abstract

Introduction: *Inflammatory bowel disease it's an idiopathic disorder that leads to inflammation of the gastroenteric tissue. The two main representatitves of this condition are Crohn's Disease and Ulcerative Colitis. The increasing incidence of this disorder in developing countries such as Brazil makes the understanding of epidemiological aspects increasingly important.* ***Objective****: This article aimed to explore the clinical-epidemiological aspects of patients diagnosed with inflammatory bowel disease.* ***Method****: It's a retrospective cohort study. The study design includes the patients diagnosed with inflammatory bowel disease seen at the gastroenterology clinic of the Hospital Santa Casa de Misericórdia de Vitória during January,2010 to December 2019.* ***Results****: The average age at the time of the diagnosis was 35,1 years old. The analysis shows that 67,5% of the patients with Crohn's Disease (CD) was hospitalized at least one time due to descompensation compared to 28,9% of Ulcerative Colitis (UC) patients. 24,7% of the UC participants made use of immunobiological therapy contrasted with 63,2% of CD patients.* ***Conclusion****: This article brings to light new epidemiological data and disease's behavior regarding inflammatory bowel disease in the state of Espírito Santo besides uncovers important divergences between this study and other articles. This way, it becomes an important tool to the Gastroenterology clinic.*

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Keyword: *Crohn disease, Colitis ulcerative, Epidemiology*

Resumo

Introdução: *A doença inflamatória intestinal (DII) representa um grupo de afecções crônicas idiopáticas que levam à inflamação do intestino. As duas principais representantes dessa doença são a Doença de Crohn (DC) e a Retocolite Ulcerativa (RCU). A crescente incidência e prevalência das doenças inflamatórias intestinais em países em desenvolvimento como o Brasil torna cada vez mais necessário o entendimento do comportamento epidemiológico da doença.* ***Objetivo:*** *Este presente estudo tem como objetivo analisar o perfil clínico epidemiológico da doença inflamatória intestinal em hospital de referência para o tratamento dessa patologia.* ***Métodos****: Trata-se de um estudo tipo coorte histórica com abordagem quantitativa, realizado no Ambulatório de Gastroenterologia do Hospital Santa Casa de Misericórdia de Vitória (HSCMV) localizado no estado do Espírito Santo. A população estudada foi adquirida após busca no sistema informatizado dos atendimentos hospitalares e ambulatoriais sob o CID-10 K50 e K51 durante o período de 01/01/2010 até 31/12/2019 (N=300).* ***Resultados****: A média de idade no momento do diagnóstico da doença inflamatória intestinal foi de 35,1 anos. A análise comparativa das variáveis epidemiológicas mostra que no grupo de DC 67,5% dos participantes tiveram pelo menos uma internação por exacerbação da doença ao longo de seu acompanhamento, contrastando com 28,9% dos portadores de RCU. Em relação a classe de medicamentos, nota-se que o grupo de RCU teve 24,7% dos participantes usando imunobiológicos durante o período analisado, o uso desse mesmo medicamento no grupo de portadores de DC foi de 63,2%.* ***Conclusão****: Este trabalho assume sua importância ao trazer dados novos da epidemiologia da DII no estado do Espírito Santo e do comportamento da doença, além de apresentar diferenças importantes da literatura mundial, se transformando, assim, em um documento de grande importância para o serviço.*

Palavras chave: *Doença de Crohn, Colite ulcerativa, Epidemiologia*

Introduction

The inflammatory bowel disease (IBD) represents a group of idiopathic chronic disorder that leads to inflammation of the gastroenteric tissue. The two main representatives of this condition are Crohn's Disease (CD) and Ulcerative Colitis (UC)[1].

The pathophysiology of the inflammatory bowel disease is yet not completely understood. Genetic and environmental factors, in addition to luminal bacteria of the intestinal tract and its enhanced permeability are implicated in the dysregulation of intestinal immunity, leading to gastrointestinal injury[1].

In developed countries, the Ulcerative Colitis has emerged before Crohn' Disease, however, in the last 20 years, the incidence of CD has overtaken UC rates. In developing countries, in which the IBD is emerging, the UC is typically more recurrent than DC[1].

In regarding to age of diagnosis, CD has its peak of incidence around the third decade of life and UC presents similar incidences rates between the third and seventh decade of life[1].

Altogether, both forms of the disease present itself with diarrhea, which may or may not contain blood, abdominal pain and weight loss. Anemia can be noticed in the laboratory parameters due to absorption or blood loss problems, leukocytosis and the rising of inflammatory proteins such as erythrocyte sedimentation rate and C-reactive protein (CRP)[2].

Through imaging, namely upper and lower endoscopy, is possible to visualize lesions and gastrointestinal tract involvement. CD's lesions are discontinuous, compromising all layers, from the mucosa to serosa and may affect any part of the gastrointestinal tract. Through microscopic, lymphocytic aggregates are observed in the submucosa, with the presence of noncaseating granuloma[2].

The UC, in oppose to CD, shows a diffuse inflammation, and confined to the mucosa and submucosa of the gastrointestinal tract wall. It is restricted to the colon and rectum, where the transition between the affected and normal tissue is clear and well demarcated. Histologically it is possible to observe mucus depletion, mucosal edema, vascular congestion with focal hemorrhage, crypt abscesses and presence of lymphocytes, eosinophils, plasmacytes and macrophages as chronic response[2].

The diagnose is made by the combination of clinic tests, radiological and histological discovers in endoscopic biopsies and surgical resection pieces[2].

The therapeutic arsenal of IBD encompasses some of these medication class: aminosalicylates, (f. ex. sulfasalazine, mesalamine), corticosteroids, immunosuppressant (f. ex. azathioprine, methotrexate, cyclosporine) and immunobiological.

The biological therapy has been more commonly used on IBD treatment, nevertheless it is indicated for moderate and severe cases, intolerant to other medications, extraintestinal manifestations and when it compromises the patient's life quality such as anal and perianal fistulas[3].

The inducing remission treatment is administered with aminosalicylates, immunosuppressant, biologicals, and corticosteroids, depending on the location and severity of the disease. In some CD cases, azathioprine could be administered with this purpose, considering its latency period to ensure the effect[4-5].

In DC cases, recurrent prevention is done by administering immunosuppressant and immunobiological. In UC cases, patients should continue to use the 5-aminosalicylic acid derivatives already used in the inducing remission treatment, which could be used with both topical and oral combination or not, depending on where the disease is located. Immunosuppressant for those patients who had more than two exacerbations in a year or who can't reduce the corticosteroids dose without a new relapse. As already described, the use of biologicals may also be used in moderate to severe cases[4-5].

The rise incidence and prevalence of inflammatory bowel diseases in developing countries such as Brazil makes the understanding of epidemiological aspects of the disease increasingly necessary. It was noticed by these authors a lack of these data in the country, including Espírito Santo, increasing even more the vitalness of prospective regional epidemiological data[6-7].

Objective

This present study aims, using longitudinal data, to analyze a clinical epidemiological profile of IBD in a hospital that are considered reference for treating this type of pathology, in addition to verify the statistic significance between the use of medications namely corticosteroids and immunobiological with hospitalization due to exacerbation of the disease, as well as analyze the relation between the age and use of immunobiological and immunosuppressant.

Materials and Method

This is a historical cohort study with a quantitative approach, conducted at the Gastroenterology Outpatient Clinic of the Santa Casa de Misericórdia de Vitória Hospital (HSCMV) located in Espírito Santo.

The population that has been studied by searching the hospital's online system for hospital and ambulatory care under the ICD K50 and K51 from 01/01/2010 till 31/12/2019 (N=300). All patients were

initially considered. The patients who were treated at the Proctology Ambulatory Care, with ICD K50 and/or K51 mistakenly filled in, electronic medical records without information, medical records with contradictory information and patients with indeterminate diagnosis of IBD were disconsidered from the data collection. Thus, the final analysis was conducted with a representative sample of two hundred and eleven electronic medical records, which 97 were diagnosed as UC and 114 as CD (N=211).

These 211 medical records were studied, and its information tabulated. The data were disposed in an EXCEL sheet and analyzed by *IBM SPSS Statistics* Program *(Statistical Package for the Social Sciences)* version 27.

Categorical variables were organized by frequency and percentage. While quantitative variables were represented by data measures namely mean, standard deviation, median, minimum, and maximum.

The normality of these variables was verified by using the Kolmogorov-Smirnov test. Since these variables did not show normal probability distribution ($p < 0.05$), the comparisons were made by the non-parametric Mann-Whitney test. The comparisons were considered significant in cases which value-$p < 0.05$.

The data were first generally analyzed and then analyzed when divided in two groups: UC and CD carriers. Both groups were studied according to epidemiologic variable namely age of diagnosis, gender, disease location, number of hospitalization due to exacerbation of the intestinal bowel disease (IBD) and duration of follow up at Gastroenterology Outpatient Care of HSCMV. Other data were also collected from the medical records such as medications administered for treatment and control of IBD and adverse effects regarding to this medication.

Such information was used to verify if there is a statistic relevance between using corticosteroids or immunobiological and the number of hospitalizations due to exacerbation of the disease, and furthermore ascertain the association between age and immunobiological or immunosuppressant prescription namely azathioprine and methotrexate.

The research project has been submitted to the Research Ethics Committee of Escola Superior de Ciências da Santa Casa de Misericórdia de Vitória – EMESCAM and has been approved under the legal opinion nº 4.870.286 - CAAE: 48929821.1.0000.5065. All ethical and legal precepts related to the Resolution n.º 196/96 of National Health Council – CNS, regarding to research involving humans were respected. The necessary costs for the execution of this study were provided by the researchers themselves.

Results

Sample characterization

Initially, 300 electronic medical reports were collected with ICD K51 or K50, from which 136 were Ulcerative Colitis carrier patients and 164 were Crohn's Disease carrier patients.

Following the medical reports analyses, 18 patients were found to be wrongly classified as UC carriers, when in fact they would have another type of gastrointestinal disease; in the CD's group, 22 patients did not have IBD, therefore they were not considered in the study. Hence, the representative sample was composed with 118 patients classified as UC and 142 patients classified as CD.

Through the medical reports analyses, it was established that 59 of the 260 total number of patients considered in the research had an incorrectly IBD classification, so that 24 patients were originally classified as UC carriers while they were CD carriers and 35 patients who were at first classified as CD cases were in fact UC cases. These medical reports were reclassified, which brought it to a total of 129 UC carrier patients and 131 CD carrier patients.

Finally, after all medical reports were verified, 32 UC patients and 17 CD patients, leading to a total of 49 patients, were disconsidered due to not having all variables needed to be part of the research or missing information and conflicting information in the electronic medical report. The final analyses were performed with 211 participants, which 97 were UC patients and 114 were CD patients.

Within the universe of 211 participants, entire population of the study, a female gender predominance was noticed, with a total of 55,9% of women.

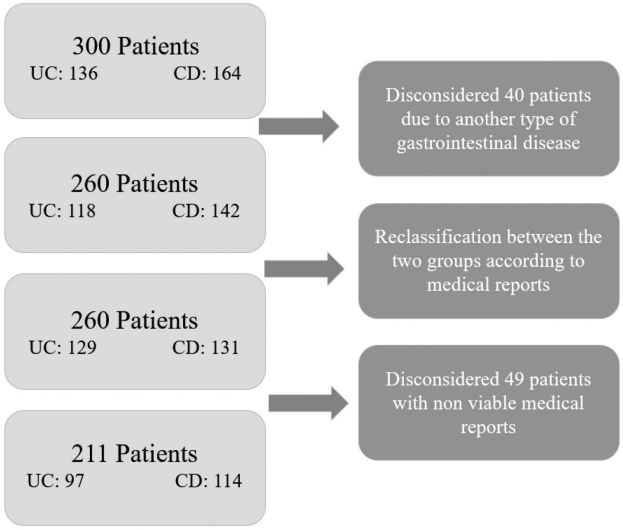

Figure 1. Study's sample organizational chart. Source: Own Elaboration, 2021

The average age for an intestinal bowel disease diagnosis was 35,1 years and the average in years of ambulatory follow-up was 3,6 years (Table 1). The minimum ambulatory follow-up duration was 1 year, and the maximum was 10 years, which number was achieved by only one patient in the study.

Out of the analyzed patients, 50.2% did not have any hospitalization for exacerbation of the disease, 49.8% had at least 1 hospitalization during the follow--up years, while 21.8% had 2 or more hospitalizations, with the largest number of 6 exacerbations found for 1 rated patient.

Treatments

In relate to treatment conducted in the analyzed patients, it is noticed that the prescribed medications given as standard therapy at the outpatient care thought the years in the study were: mesalamine, which could be oral use, enema or suppositories, sulfasalazine, corticosteroids, immunobiological and immunosuppressant. At the end, 65.4% of participants, considering both groups, were administrated amino-salicylates (Table 2).

It was possible to verify that 45.5% of analyzed patients used any type of immunobiological, 64% used any type of immunosuppressant, 40.3% used corticosteroids, 25.1% used sulfasalazine, 43.6% used oral mesalamine, 11.8% used enema mesalamine and 17.5% as suppositories.

Adverse Effects

In relate to medication side effect, it is noticed that 13.3% of CD or UC carriers had adverse effect out of the prescribed therapy medications offered, while

Table 1

Epidemiologic variables in a global manner (Crohn's Disease and Ulcerative Colitis)

Variable		*Absolute frequency*	*Relative frequency*
Group	Crohn's disease	114	54.0
	Ulcerative Colitis	97	46.0
Gender	Male	93	44.1
	Female	118	55.9
Number of hospitalizations	0	106	50.2
	1	59	28.0
	2	22	10.4
	3	14	6.6
	4	9	4.3
	6	1	0.5
Follow-up time*	1	64	30.3
	2	24	11.4
	3	26	12.3
	4	18	8.5
	5	23	10.9
	6	22	10.4
	7	28	13.3
	8	3	1.4
	9	2	0.9
	10	1	0.5

	Mean	*Standard deviation*	*Median*	*Minimum*	*Maximum*
Number of hospitalizations	0.9	1.2	0.0	0.0	6.0
Follow-up time	3.6	2.3	3.0	1.0	10.0
Age of diagnosis*	35.1	15.4	32.0	12.0	82.0

*The follow-up time and age of diagnosis are described in years. Source: Own elaboration, 2021

Table 2

Characteristics regarding the use of therapies in a global manner (Crohn's Disease and Ulcerative Colitis)

Characteristics		*Absolute frequency*	*Relative frequency*
Mesalamine (Oral)	Did not use	119	56.4
	Used	92	43.6
Mesalamine (Enema)	Did not use	186	88.2
	Used	25	11.8
Mesalamine (Suppositories)	Did not use	174	82.5
	Used	37	17.5
Sulfasalazine	Did not use	158	74.9
	Used	53	25.1
Corticosteroids	Did not use	126	59.7
	Used	85	40.3
Immunossupressant	Did not use	76	36.0
	Used	135	64.0
Immunobiological	Did not use	115	54.5
	Used	96	45.5

Source: Own elaboration, 2021

the majority (7.1%) is associated to administration of immunosuppressant. 3 participants of this study manifested adverse effects to two different medications. (Table 3)

Comparison between CD and UC

Males is the most affected gender in CD patients, with 52.2% of the participants in this research. While UC affects more females, represented by 66% of the analyzed patients.

Regarding to location, is observed that Crohn's Disease has an ileocolonic affect (L3) in 39.5% of participants. The extension of Ulcerative Colitis Disease is pancolonic in 37.1%.

The comparative analyses of epidemiological variables show that, in the UC group, 67.5% of patients had at least one hospitalization for exacerbation of the disease along the follow-up, against 28.9% of UC patients for the same variable (Table 4).

The average 3.6 years follow up time, however, did not differentiate between both groups. The average age at the diagnosis moment is 34.4 years for DC group, with the 12 years minimum age and 77 as the

Table 3

Characteristics regarding therapies adverse effects in a global manner (Crohn's Disease and Ulcerative Colitis)

Adverse effects		*Absolute frequency*	*Relative frequency*
Adverse effects	No	183	86.7
	Yes	28	13.3
Mesalamine	No	205	97.2
	Yes	6	2.8
Sulfasalazine	No	204	96.7
	Yes	7	3.3
Corticosteroids	No	210	100.0
	Yes	0	0.0
Immunosuppressant	No	196	92.9
	Yes	15	7.1
Immunobiological	No	208	98.6
	Yes	3	1.4

Source: Own elaboration, 2021

maximum age. In relate to UC, the average age is 35.6 years, with the latest diagnosis being 82 years (Table 5).

According to Table 6, the diagnosis majority for Crohn's Disease as well for Ulcerative Colitis are performed between 20 and 29 years, from which 29.8% and 26.8%, respectively. Nonetheless, in UC group age of diagnosis distribution, it's noticed a small difference between the age groups of 20 till 29 years (26.8%), 30 to 39 years (24.7%) and 40 till 49 years (23.7%)

In relate to medication classes, it is observed that UC group had 24.7% of participants using immunobiological during the time frame. The same medicine was used by 63.2% of CD carriers. Regarding to corticosteroid therapy, it is not possible to detect any difference between the group (Table 7)

In reference to adverse effects regarding the medication used, the analysis disposed in Table 8 reveal that 11.4% of CD patients and 15.5% of UC patients had some adverse effect due to some drug while using a therapeutical medication. As regards the CD group, 2 patients (1.8%) manifested a reaction to mesalamine, 9 patients (7.9%) indicated an adverse reaction to immunosuppressant and 3 patients (2.6%) to immunobiological. The group diagnosed with UC had 4 patients (4.1%) with adverse reaction to mesalamine, 6 patients (6.2%) manifested reaction to immunosup-

Table 4

Epidemiologic variables for Crohn's Disease and Ulcerative Colitis group

		Group			
		Crohn's Disease		*Ulcerative Colitis*	
		Absolute frequency	*Relative frequency*	*Absolute frequency*	*Relative frequency*
Gender	Male	60	52.6	33	34.0
	Female	54	47.4	64	66.0
Location (CD)	No information	11	9.6		
	L1	31	27.2		
	L2	24	21.1		
	L3	45	39.5		
	L4	3	2.6		
Location (UC)	No information			16	16.5
	E1			16	16.5
	E2			29	29.9
	E3			36	37.1
Number of hospitalization	0	37	32.5	69	71.1
	1	40	35.1	19	19.6
	2	16	14.0	6	6.2
	3	12	10.5	2	2.1
	4	8	7.0	1	1.0
	6	1	0.9	0	0.0
Follow-up time*	1	32	28.1	32	33.0
	2	14	12.3	10	10.3
	3	15	13.2	11	11.3
	4	10	8.8	8	8.2
	5	14	12.3	9	9.3
	6	13	11.4	9	9.3
	7	12	10.5	16	16.5
	8	2	1.8	1	1.0
	9	1	0.9	1	1.0
	10	1	0.9	0	0.0

*The follow-up time and age of diagnosis are described in years. Source: Own elaboration, 2021

Table 5

Age, Hospitalizations and Follow-up Time for Crohn's Disease and Ulcerative Colitis group

	Crohn's Disease			*Ulcerative Colitis*		
	*Age of diagnosis**	*Number of hospitalization*	*Follow-up time**	*Age of diagnosis**	*Number of hospitalization*	*Follow-up time**
Mean	34.4	1.3	3.6	35.9	0.4	3.6
Standard deviation	16.0	1.3	2.3	14.7	0.8	2.4
Median	30.0	1.0	3.0	34.0	0	3.0
Minimum	12.0	0	1.0	12.0	0	1.0
Maximum	77.0	6.0	10.0	82.0	4.0	9.0

*The follow-up time and age of diagnosis are described in years. Source: Own elaboration, 2021

Table 6

Age of diagnosis distribution in decades for Crohn's Disease and Ulcerative Colitis group

	Group			
	Crohn's Disease		*Ulcerative Colitis*	
	Absolute frequency	*Relative frequency*	*Absolute frequency*	*Relative frequency*
No information	7	6.1	1	1
<20 years old	17	14.9	9	9.3
20 a 29 years old	34	29.8	26	26.8
30 a 39 years old	24	21.0	24	24.7
40 a 49 years old	14	12.3	23	23.7
50 a 59 years old	6	5.3	6	6.2
60 a 69 years old	9	7.9	6	6.2
70 a 79 years old	3	2.6	0	0
>80 years old	0	0	2	2.1

Source: Own elaboration, 2021

pressant and 7 (7.2%) to sulfasalazine, which detains the greater percentage of adverse effects.

As stated by Table 9, there is a noteworthy difference ($p < 0.05$) between hospitalizations caused by administration of corticosteroids, whereas the average number of hospitalization for patients that used this medication was 1.1 and the average number for those who did not use it was 0.8.

There is a notable difference ($p < 0.05$) between the number of hospitalizations while using immunobiological, considering that the average number of hospitalizations was 1.4 against 0.5 for those who were not using the medicine.

Still considering the use of immunobiological, in Table 11, the test results indicate that there is a significant difference between age and use of immunobiological, $p < 0.05$.

The study showed that the patient's average age that were using this medication was 29.6 years. The patients who did not use this therapeutical method were older, with average age of 39.7 years.

Although, the use of immunosuppressant, in Table 12, the test results revealed the existence of a significant difference between age and use of immunosuppressant, $p < 0.05$.

What it concerns the administration of immunosuppressant, the patients who used to use this medication had a average age of 32.6 years and those who didn't had a average age of 39.6 years.

Discussion

Inflammatory bowel disease is relatively new condition that lacks epidemiological data. Developing countries and, especially in the state of Espírito Santo, that information is even more scarce. Collect this longitudinal data and expose our reality was the main goal of these research.

Peculiar characteristics were found in the results general analysis of the representative sample. It was made possible to attest that, in the respective hospital: UC has a predilection for female gender; UC has a single peak related to age of diagnosis (20 to 50 years); CD carriers suffered more exacerbations of the disease

Table 7

Characteristic regarding therapy use for Crohn's Disease and Ulcerative Colitis group

		Group			
		Crohn's Disease		*Ulcerative Colitis*	
		Absolute frequency	*Relative frequency*	*Absolute frequency*	*Relative frequency*
Mesalamine (Oral)	Did not use	79	69.3	40	41.2
	Used	35	30.7	57	58.8
Mesalamine (Enema)	Did not use	112	98.2	74	76.3
	Used	2	1.8	23	23.7
Mesalamine (Suppositories)	Did not use	106	93.0	68	70.1
	Used	8	7.0	29	29.9
Sulfasalazine	Did not use	107	93.9	51	52.6
	Used	7	6.1	46	47.4
Corticosteroids	Did not use	67	58.8	59	60.8
	Used	47	41.2	38	39.2
Immunossupressant	Did not use	21	18.4	55	56.7
	Used	93	81.6	42	43.3
Immunobiological	Did not use	42	36.8	73	75.3
	Used	72	63.2	24	24.7

Source: Own elaboration, 2021

Table 8

Characteristics regarding the therapy adverse effect for Crohn's Disease and Ulcerative Colitis

Adverse Effects		*Group*			
		Crohn's Disease		*Ulcerative Colitis*	
		Absolute frequency	*Relative frequency*	*Absolute frequency*	*Relative frequency*
Adverse effects	No	101	88.6	82	84.5
	Yes	13	11.4	15	15.5
Mesalamine	No	112	98.2	93	95.9
	Yes	2	1.8	4	4.1
Sulfasalazine	No	114	100.0	90	92.8
	Yes	0	0.0	7	7.2
Corticosteroids	No	113	100.0	97	100.0
	Yes	0	0.0	0	0.0
Immunosuppressant	No	105	92.1	91	93.8
	Yes	9	7.9	6	6.2
Immunobiological	No	111	97.4	97	100.0
	Yes	3	2.6	0	0.0

Source: Own elaboration, 2021

than UC carriers; CD inflammation location is more commonly ileocolonic than terminal ileum; UC site of inflammation is conventionally pancolonic.

The gender distribution analysis did not show any gender predilection considering all IBD patients, which this data is similar to other authors work around the world. When the groups are separated, CD exhibit a small difference between both genders corroborating with the analysis above whilst UC affected more the female gender. This discover had been already demonstrated in another study performed between 2014 and 2017 in Espírito Santo displaying the prevalence of IBD

Table 9

Comparison between hospitalization with corticosteroids

Corticosteroids	*Mean*	*Standard deviation*	*Median*	*Minimum*	*Maximum*	*N*
Did not use	0.8	1.2	0.0	0.0	6.0	126
Used	1.1	1.2	1.0	0.0	4.0	85

Mann-Whitney p = 0,013. Source: Own elaboration, 2021

Table 10

Comparison between hospitalization with immunobiological

Immunobiological	*Mean*	*Standard deviation*	*Median*	*Minimum*	*Maximum*
Did not use	0.5	0.8	0.0	0.0	4.0
Used	1.4	1.4	1.0	0.0	6.0

Mann-Whitney p = 0,000. Source: Own elaboration, 2021

Table 11

Comparison between age (years) and immunobiological

Immunobiological	*Mean*	*Standard deviation*	*Median*	*Minimum*	*Maximum*
Did not use	39.7	15.5	37.0	12.0	82.0
Used	29.6	13.3	25.5	12.0	77.0

Mann-Whitney p = 0,000. Source: Own elaboration, 2021

Table 12

Comparison between age (years) with immunosuppressant

Immunosuppressant	*Mean*	*Standard deviation*	*Median*	*Minimum*	*Maximum*
Did not use	39.6	16.1	36.5	12.0	82.0
Used	32.6	14.4	28.0	12.0	77.0

Mann-Whitney p = 0,001. Source: Own elaboration, 2021

in females. Nevertheless, it differentiates from other literatures which reveals a small inclination to male gender[7-8,10]. This predilection could be explained by the higher number of females that seek for health assistance, rising the diagnosis of the disease in this population.

Furthermore, there was a diagnostic peak between 20 to 40 years in CD, whilst in UC, this peak occurred between 20 to 50 years. This statistics draws attention on account of global literature which claims that UC has a bimodal pattern for it's age of diagnosis, with a first peak between 15 to 30 years and a smaller second peak between 50 till 70 years[9-10]. The authors assume this divergence can be explained on account of the epidemiologic data related to this pathology were extracted from studies conducted in developed countries where the population above 50 years is known to be greater, as well as the life expectancy. In 2010's geographic census performed by IBGE, the population above 50 years in the state of Espírito Santo was 20.6 and the life expectancy was 77.74 years old. Such difference between developed and developing countries could be the explanation for the bimodal incidence absence in UC cases in Brazil[11-12].

In relate to exacerbations, in our study the Crohn's Disease was more susceptible to hospitalization compared to Ulcerative Colitis. Among the CD patients, 67.5% were hospitalized due to exacerbation of the disease at least once, in oppose to 28.9% of UC patients. Previous research shows an annual incidence of hospital admissions for CD cases of 20%. Regarding to UC, literature data diverge from this present study displaying that around half of the patients needed hospitalization during the whole disease period. In reference bibliography is found that the number of hospitalizations could be around half of these patients[13]. This dissimilarity can be related to the hospitalizations not considered in these studies.

Regarding to impairment location in CD patients, according to Montreal Classification, the least usual location for impairment is the upper gastrointestinal tract, which consisting with other bibliographic references. However, when it comes to the most commonly location, there is a divergence since the literature states that it is the terminal ileum while this study attests it is the ileocolonic[9]. This variation can also be explained by the fact that the study was performed

in a reference clinic center for this pathology, which patients with severe or more extended forms of disease are redirected to.

About UC, the majority part of the patients had pancologic impairment followed by left colitis. Data from national literature bring different results regarding the commonly location for impairment in patients. Studies performed in southeast of Brazil shows that the state of Espírito Santo, between 2012 and 2014, had a higher prevalence for left colitis and in São Paulo, between 1980 and 1999, the prevalence was of rectosigmoiditis[6,14-16]. This distinction regarding the location can be justified by Brazilian population diversity and the absence of greater studies contemplating all regions of the country.

Regarding medication classes, in particular the use of immunobiological, it was possible to see the necessity of it's use in most DC patients and, when compared to UC patients, there is a great reduction in the percentage of patients who had used the medicine. The greater necessity regarding the use of these medications by CD carriers can be associated with a loss of response to a certain immunobiological, what can be explained by the many levels of immunogenicity of CD, the insufficient drug efficacy or higher frequency of adverse effects which leads to repeatedly change of medication[9]; it must consider that referred patients to the hospital in this study are more severe, which culminate on higher frequency of exacerbation and a greater need to use immunobiological to achieve a disease remission.

As for the use of corticosteroids, it is possible to conclude that the analyzed patients who used this class of medication suffered more exacerbations of the disease, therefore, they had more hospitalizations than the ones who did not use it (Table 9), which can indicate a severe disease with greater chance of unfavorable outcomes, as well as a premature use of corticosteroids without a immunobiological therapy associated. This result can also be attested by another author. A populational study in Denmark and Minnesota suggested that 43% and 56% of patients with Crohn were given corticosteroids during the pre-immunobiological stage and more than half of this patients became corticosteroid dependent, refractory to the therapy or needed a surgical treatment in the following years[17].

Similar results can be seen in patients that used immunobiological (Table 10), in which patients analyzed in this study who used this medication had more hospitalizations than the ones who did not use it. Additionally, it is possible to deduce that patients with greater hospitalization numbers possibly need a therapeutical combination to achieve the disease control, which corroborates to clinic and therapeutical recommendations for new guidelines, which indicates that immunobiological agents must be used on the disease that is resisting corticosteroids treatments, besides patient against the use of immune modifiers[17].

This study is the first in the state to carry on with patients with IBD for 10 years and shows its relevance by collecting totally new epidemiologic data and by the IBD behavior in the state of Espírito Santo and by revealing the differences regarding previous world research. It is important to highlight that these same data must be interpreted with a critical perspective for the reason that this study was performed in a reference hospital for this pathology, for which it receives more severe cases and in which the diagnosis is made prematurely, either by redirections or consultations. Besides, the information was collected in an old electronic medical record, from a system that is no longer in use, which may have damaged or biased some discoveries, because the consults information did not follow any pattern. Even so, the work's importance remains by collecting information from a great number of treated patients, which open the path for more research and interpretations of the collected data.

Conclusion

This research assumes it's importance by bringing new epidemiological data of IBD in the state of Espírito Santo and the disease's behavior, as well as to present important differences regarding the world literature, transforming this into a document with major importance to service.

Greetings

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