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Inflammatory Bowel Diseases: focus on epidemiology

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ABSTRACT

The worldwide incidence and prevalence of Inflammatory Bowel Diseases (IBD) continues to increase, recent studies showing a future global spread of Inflammatory Bowel Diseases. Epidemiological data coming for Romania are scarce.

The aim is to describe epidemiological features of Inflammatory Bowel Diseases in an adult population in the South-East side of Romania.

The retrospective and descriptive study included 128 patients: group 1=Crohn's Disease (CD) (79), group 2=Ulcerative Colitis (UC) (46) and group 3=Unclassified Colitis (Unclassified C) (3). We calculated the prevalence of Inflammatory Bowel Diseases in Constanța in 2016.

The phenotypic distribution was: 62% with Crohn's Disease, 36% with Ulcerative Colitis and 3 patients with Unclassified Colitis.

Crohn's Disease: The prevalence was 0.11/100000 inhabitants. 51% were female and 49% were male. The age distribution showed a uniform model of the frequency of Crohn's Disease in patients aged between 21 and 50 years. According to Montreal Classification, ileo-colonic involvement L3 was the most frequent in 47% and 60% patients presented inflammatory phenotype B1. 44% had intestinal complications. 9% had extraintestinal complications. 16.4% required surgical interventions.

Ulcerative Colitis: The prevalence was 0.06/100000 inhabitants. We noticed a slight male predominance: 57% were male and 43% female. The age distribution showed a bimodal peak of incidence in patients aged between 21-30 years and 41-50 years. The most common disease extension was left colitis E2 in 47% cases. One patient had an enterovesical fistula. Extraintestinal complications were not reported in this group. No patient required surgical intervention.

Unclassified Colitis: 3 male patients with ages between 31-50 years were diagnosed with Unclassified Colitis. Complications or need for surgery were not reported in this group.

We noticed the predominance of Crohn's Disease in our region while in other parts of Romania Ulcerative Colitis is predominant. We suppose that the predominance of Crohn's Disease in Dobrogea can be due to environmental factors, diet or ethnics, but additional epidemiological studies to define better the association with environmental factors and risk factors for Crohn Disease or Ulcerative Colitis in our region are needed.

Keywords: Crohn's Disease, Ulcerative Colitis, Inflammatory Bowel Diseases, Epidemiology

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Introduction

The worldwide incidence and prevalence of Inflammatory Bowel Diseases (IBD) continues to increase, recent studies showing a future global spread of IBD.

Although for years, the highest incidence and prevalence rates were noticed in westernized nations and the majority of studies were conducted in these

geographic regions, few epidemiological data have been available about frequency of IBD in developing nations. Molodecky et al. [1] reported in his study that the highest incidence of IBD worldwide was in Canada followed by Northern Europe whereas Asia had a lower incidence, at that time suggesting a North-South gradient for IBD [2]. Since 2000, a stabilization of the values of incidence and prevalence has been noted in Western Countries; despite this, a rapidly increasing incidence has been observed in the newly industrialized countries. The concern about IBD has increased in Eastern Europe, Hungary publishing worrying data [3], so is New Zealand [4], Asia, Africa and South America [1] and much of the developing world. If IBD will continue to rise in these areas with formerly low incidence rates like in the Western Countries 30-40 years ago, then the „global prevalence of IBD will climb steadily, affecting tens of millions of people through the world over the next generation" [5].

Epidemiological data coming for Romania are scarce. Although Romania is known as a low-incidence country of IBD [6], few studies have been conducted so far. According to the latest publications that show a global burden of IBD and increasing incidence in Eastern Europe and considering the lack of studies in Romania, we identified the need for assessing the epidemiology of IBD in the South-East side of Romania.

Aim: To describe epidemiological features of IBD in an adult population in the South-East side of Romania.

Materials and methods

The retrospective and descriptive study included 128 patients with IBD admitted to Department of Gastroenterology of Constanța County Emergency Clinical Hospital „Sf. Apostol Andrei" and in outpatient clinic between 2014-2016.

Information was collected from the digital database of the hospital for inpatients and outpatients.

Characteristics of patients were introduced in a standard worksheet that included the following requirements: name, age, sex, type of IBD: CD, UC, Unclassified C, Montreal Classification for CD and extent of lesions for UC and Unclassified C, types of intestinal and extraintestinal complications and surgical interventions.

Inclusion criteria: IBD (old and new cases) and age > 16 years.

Exclusion criteria: Irritable Bowel Syndrome (IBS) and other types of colitis (infectious colitis, microscopic colitis, ischemic colitis, radiation colitis).

The study included 3 groups of patients: group 1 = CD (79 patients), group 2 = UC (46 patients) and group 3 = Unclassified C (3 patients). We calculated the prevalence of IBD in Constanța County in 2016 (the population was about 684,100 inhabitants at the last census done).

Data analysis with Microsoft Excel Analysis Tool Pack was performed and descriptive statistics (mean value and standard deviation) were calculated.

Results

The phenotypic distribution was: 79 patients (62%) with CD, 46 (36%) with UC and 3 patients with Unclassified Colitis.

The prevalence of IBD in our region was 0.17/100000 inhabitants.

CROHN'S DISEASE
The prevalence of CD was 11.6/100000 inhabitants.

Gender distribution
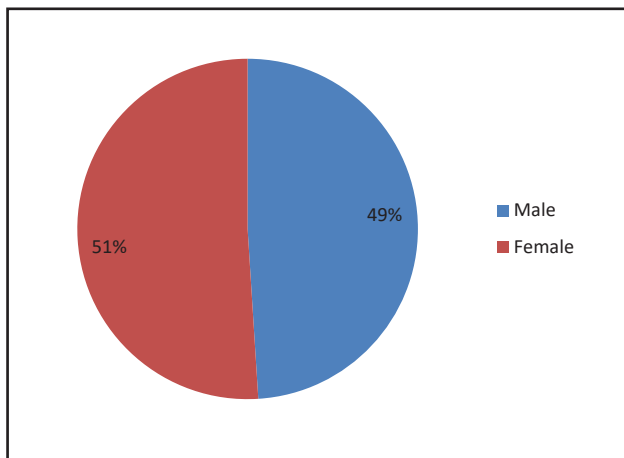41 (51%) were female and 38 (49%) were male (Figure 1).
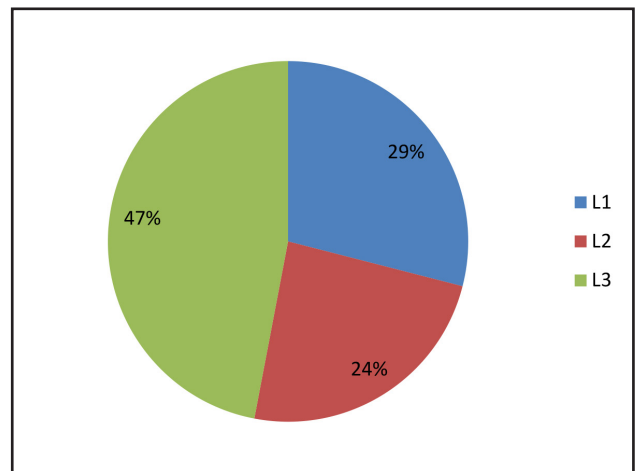
Figure 1. Gender distribution

Age distribution

The mean age was 44.5 +/- 15.5 years. The age distribution showed a uniform model of the frequency of CD in patients aged between 21 and 50 years (Figure 2).
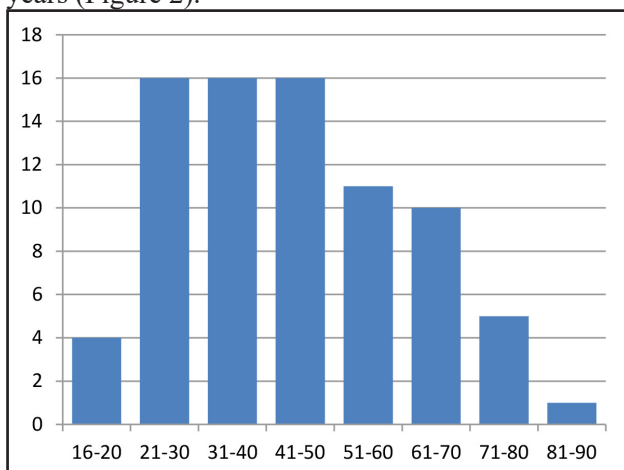

Figure 2. Age distribution

Disease Location

According to Montreal Classification, ileo-colonic involvement L3 was the most frequent in 37 cases (47%), followed by ileal L1 in 23 cases (29%) and colonic L2 in 19 cases (24%) (Figure 3).

Figure 3. Disease Location

Disease Behavior

According to Montreal Classification, 48 (60%) patients presented inflammatory phenotype B1, followed by 20 patients (26%) with stenotic phenotype B2 and 11 (14%) with penetrant phenotype B3. Only 4 patients (5%) had perianal lesions (Figure 4).
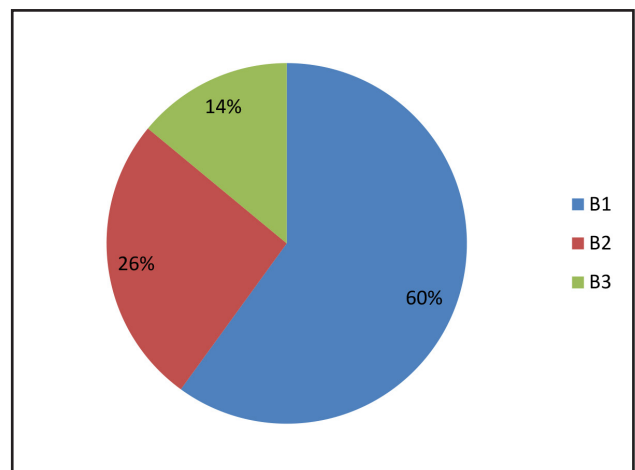

Figure 4. Disease phenotype in CD

Complications

35 patients (44%) had intestinal complications at one point in the evolution of the disease (Figure 5): 20 (25%) stenosis, 10 (12.6%) fistulas and 5 (6.4%) intraabdominal abscesses (Figure 6, Figure 7). Only 7 patients (9%) had extraintestinal complications: 3 cases sacroileitis, 1 epislceritis, 2 CSP, 1 Renal
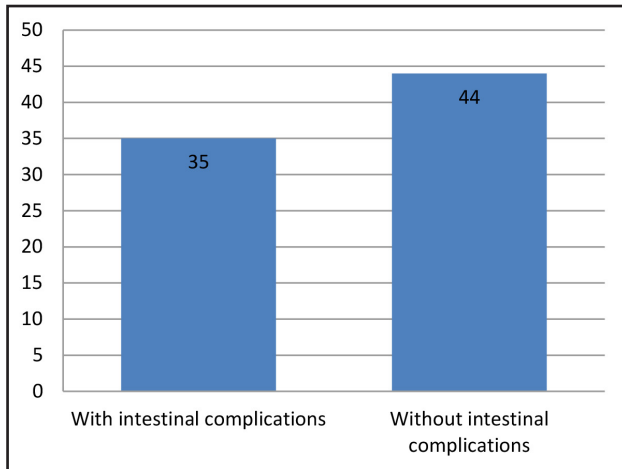
Lithiasis and 2 ITU.
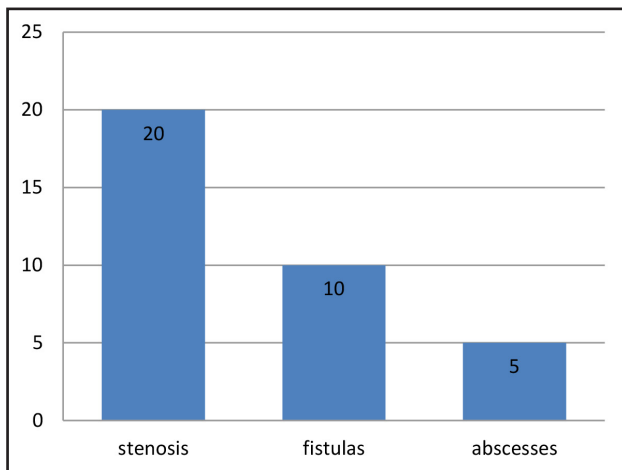

Figure 5. Distribution of intestinal complications

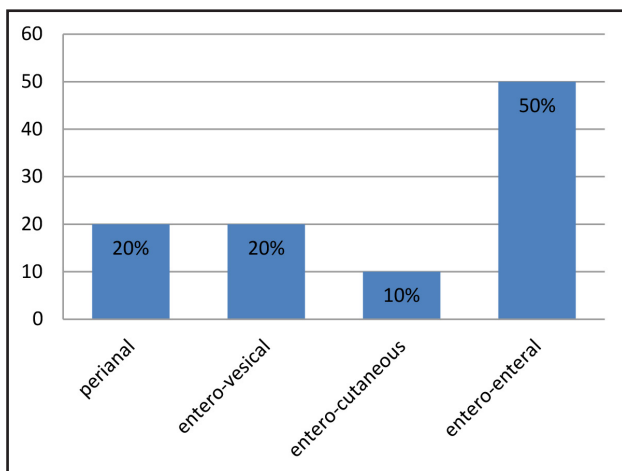*Figure 6. Types of intestinal complications*

Figure 7. Types of fistulas

Surgery

13 patients (16.4%) required surgical interventions.

ULCERATIVE COLITIS

The prevalence of UC was 6.7/100000 inhabitants.

Gender distribution

This group was characterized by slight male predominance: 26 (57%) were male and 20 (43%) female (Figure 8)
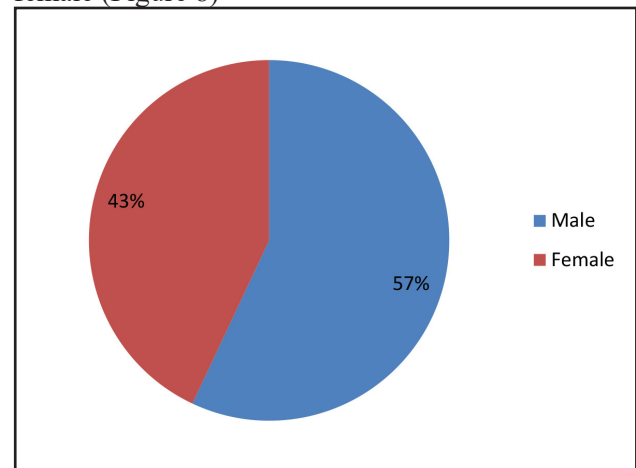

Figure 8. Gender distribution

Age distribution

The mean age was 44 +/- 14.2 years. The age distribution showed a bimodal peak of incidence in patients aged between 21-30 years and 41-50 years (Figure 9).
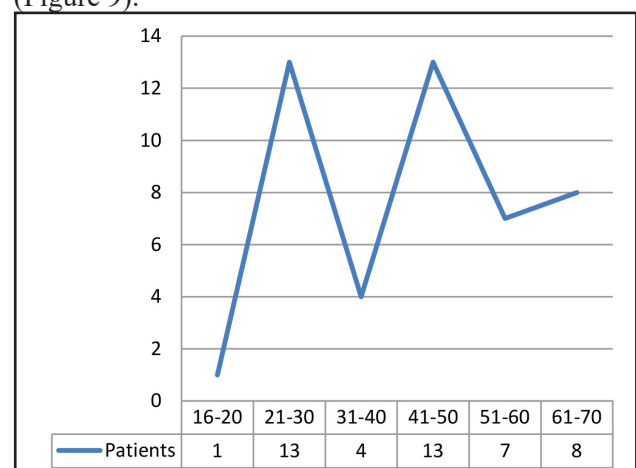

	16-20	21-30	31-40	41-50	51-60	61-70
Patients	1	13	4	13	7	8

Figure 9. Age distribution

Disease extension

The most common disease extension was left colitis E2 in 21.6 patients (47%), followed by proctitis E1 in 18.4 patients (40%) and extensive colitis E3 in 6 patients (13%) (Figure 10).
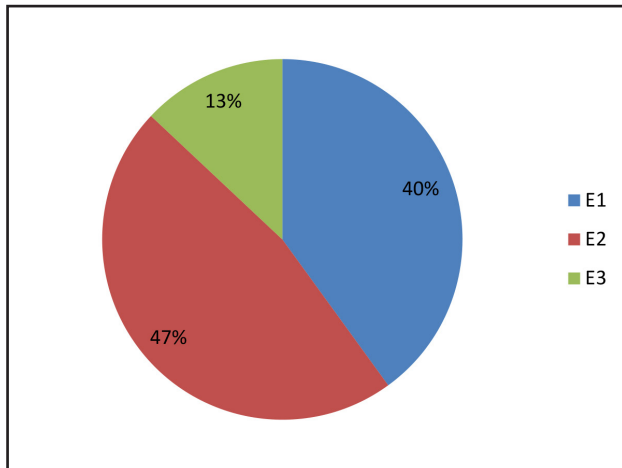

Figure 10. Disease extension in UC

Complications

Only one patient had an enterovesical fistula at one point in the evolution of the disease. Extraintestinal complications were not reported in this group.

Surgery

No patient required surgical intervention.

UNCLASSIFIED COLITIS

Only 3 male patients with ages between 31-50 years were diagnosed with Unclassified Colitis (2 with left colitis E2 and one with proctitis E1). Complications or need for surgery were not reported in this group.

Discussions

An important feature of our study is the predominance of CD in Dobrogea (62%). A similar local study conducted years ago showed the same results [7]. In contrast, other studies [8, 9, 10] published the predominance of UC in different regions of Romania and a south-west to north-east phenotypic gradient. Recent information from our National Database IBD Prospect [10] indicates that UC is predominant in our country.

The geographical distribution of IBD in Romania varies considerably (Figure 11). We suppose that the predominance of CD in Dobrogea can be due to environmental factors, diet or ethnics, but additional epidemiological studies to better define the association with environmental factors and risk factors for CD or UC in our region are needed.
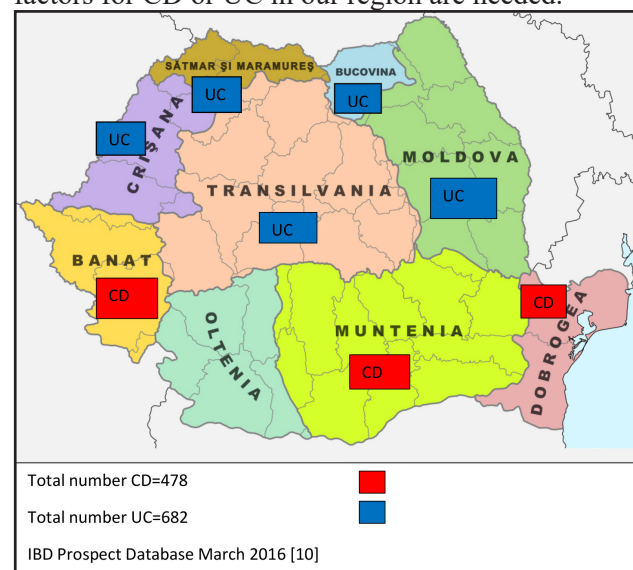

Figure 11. Geographical distribution of IBD in Romania between 2014-2016 [8, 10]

CROHN'S DISEASE

Gender and age distribution

The mean age was 44 years in both CD and UC and is higher than data available from other national studies [10] or from Europe and USA where the incidence peak is under 35 years of age [11]. In accordance with the latest study made in Dobrogea [7], more than half of the CD patients (60.6%) had a uniformly age distribution between 21-50 years and there were no statistical differences between male and female. These findings are in contrast with literature that indicates a high prevalence of CD in young females [8, 10].

Disease location

Almost half of patients had ileo-colonic L3

involvement, similar with other studies like ESCAPE in Serbia [12] or Hungary [13], but in contradictory with the results from IBSEN Study [14] or national studies where colonic involvement L2 [7,8,9] or ileal involvement L1 [10] were predominant. We don't have information about the upper digestive tract involvement because we don't routinely perform upper GI endoscopy in our patients unless they have symptoms.

Disease behavior

In concordance with previous studies [7,8], inflammatory phenotype B1 was predominant, followed by stenotic B2 and penetrant B3 and perianal disease was present in a small percentage.

Complications

Almost half of the patients (44%) had intestinal complications, feature also observed years ago in Romania [9], but comparing with the last study conducted in Dobrogea [7], we noticed the increase of these complications, suggesting that patients had more severe disease progression in our region.

In contrast with the ESCAPE study [12] only 9% had extraintestinal complications.

Surgery

The proportion of surgically treated patients was smaller than previously published [9,12] and comparing with the latest local study [7], even if the number of intestinal complications increased over years (almost half had intestinal complications), only 16.4% needed surgery. These results suggest that remaining patients achieved response with medical treatment and surgery was avoided.

ULCERATIVE COLITIS

Gender and age distribution

In agreement with literature [9], the male to female ratio was almost similar with a slight male predominance suggesting an equal risk of developing UC. In contrast, local studies [7, 10] showed male predominance. The age distribution showed a bimodal peak of incidence in patients aged between 21-30 years and 41-50 years and it is in contrast with another study conducted in Romania [9] where the population with ages between 20-59 years were uniformly affected (this model was observed in our study in the group with CD). Comparing with previous information published in our country [12] or region [7], we conclude that UC is beginning to affect

younger patients.

Disease extension

Similar to other studies from Romania [9,10], Dobrogea [7] or Hungary [13], the majority of cases were left colitis E2 (47%), followed by proctitis E1 and extensive colitis E3.

Complications

There were no intestinal and extraintestinal complications reported in this group except one patient who had a entero-vesical fistula. On the basis of the results of previous studies [9] that showed significantly higher complications, we can say that UC in Dobrogea had a benign course.

Surgery

No patient required surgical interventions. The same results were found in another study in Romania [9] and this fact highlights the benign course of UC in our region.

UNCLASSIFIED COLITIS

In agreement with other studies [8,10], Unclassified Colitis was present in a small percentage and without particularities in our region.

Conclusions

The present study showed epidemiological features and phenotypes of IBD in Dobrogea.

We noticed the predominance of CD in our region while in other parts of Romania UC is predominant. We suppose that the predominance of CD in Dobrogea can be due to environmental factors, diet or ethnics, but additional epidemiological studies to define better the association with environmental factors and risk factors for CD or UC in our region are needed.

Gender distribution (no significant difference between male and female in CD and the slight male predominance in UC) confirmed that there is no relationship between gender and predisposition of developing IBD.

CD main characteristics in Dobrogea: predominance of ileo-colonic involvement L3 and

inflammatory phenotype B1, and perianal disease were reported in a few cases. Almost half of the patients had intestinal complications (mainly stenosis and fistulas), suggesting a severe disease progression in our region, but only 16.4% needed surgery, and this indicated that remaining patients achieved response with medical treatment and surgery was avoided.

UC main characteristics in Dobrogea: the majority of cases were left colitis E2, a small percentage of extensive colitis E3, absence of intestinal and extraintestinal complications and no need for surgery in this group. All these findings highlight the benign course of UC in our region.

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