ANTHROPOMETRIC ASSESSMENT OF OBESITY AMONG IBD PATIENTS

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Abstract

The prevalence of obesity in IBD patients is a major research topic, showing a considerable variation in an incidence between 5 and 30%.

The aim of the present study was to make an anthropometric assessment of obesity among IBD patients.

Materials and methods: 50 IBD patients were studied. For each patient, data on age, gender, abdominal circumference, weight and BMI, smoking habits, and relevant comorbidities were collected. Obesity was diagnosed with a BMI > 30 kg/m2. The data were processed statistically using variation, dispersion, correlation and comparative analyses.

Results: The percentage of men and women was even, with an average age of 43.26, a minimum age of 18, and a maximum age of 75. No difference in the age of onset was found between US and CD patients. The majority of the studied patients are genetically burdened with diabetes mellitus and hypertensive disease. The disease appears in younger patients having IBD and obesity.

In conclusion, our study can lay the foundation of some further research. Because of the epidemiological increase of IBD in the developed countries, the pathogenetic role and influence on the disease outcome played by a diet should not be underestimated and should be further investigated. Planning new clinical trials aiming the evaluation of the clinical, laboratory and endoscopic parameters at baseline and after the changes in BMI may be useful, as this topic is still very poorly studied.

Key words: *IBD, BMI, assessment, obesity*

Introduction

In recent years, there has been an increasing incidence of IBD, especially in the developing countries [13]. Similarly, obesity is becoming more prevalent wand, one of the major risk factors for morbidity and mortality from chronic diseases [4, 12]. The World Health Organization (WHO) defines obesity as a body mass index (BMI) value above 30 kg/m2, but obesity also underlies the excessive distribution of visceral fat, with several changes at the hormonal, inflammatory and endothelial levels. Despite the trend of the increasing incidence and prevalence of IBD worldwide (Europe, Asia, Middle East, and North America) in recent years, there is a relative lack of population-level studies reporting the prevalence of obesity among IBD individuals. [11] Traditionally, IBD has been associated with low body weight, and obese IBD patients are considered rare. However, the current prevalence of overweight and obesity among IBD patients is similar to that of the general population, approximately 20%–30% with no differences between CD and UC, and also in elderly or pediatric patients. [6, 7, 24]

As a major environmental risk factor, obesity may contribute to the development of the etiopathogenesis of IBD [15, 21]. Ongoing studies suggest that obesity may negatively impact clinical course and health care utilization [6, 8, 14, 16]. Furthermore, it has been estimated that a one-unit increase in BMI can increase the risk of therapeutic failure by 4% [9] and, in particular, a high BMI is an independent predictor of failure of adalimumab therapy [2].

The aim of the present study was to make an anthropometric assessment of obesity among IBD patients.

Materials and methods

50 IBD patients were studied. For each patient, data on age, gender, abdominal circumference, weight and BMI, smoking habits, and relevant comorbidities were collected. Obesity was diagnosed with a BMI > 30 kg/m2. The data were processed statistically using variation, dispersion, correlation and comparative analyses.

Results and Discussion

50 IBD patients were studied and the results are presented in Table 1. There is an even gender distribution (50% women and 50% men). UC patients predominate (56%), and with BC there are 44%. The average age of the patients was 43.26, the average weight was 85.20 kg, and the BMI was 29.15 kg/m2. The average waist circumference was 99.34 cm. More than 1/3 (38%) of patients had active disease.

Table 1. Baseline characteristics of inflammatory bowel disease population

Parameter		Mean±SD or n (%)
Gender	Male	25 (50 %)
	Female	25 (50 %)
Age (yr)		43.26 ±13.59 (18.00-75.00)
Smokers		11 (22 %)
BMI (kg/m2)		29.15 ± 6.19 (14.70-50.50)
IBD	Crohn's disease (CD)	22 (44 %)
	Ulcerative colitis (UC)	28 (56 %)
Diabetes		12 (24 %)
Hypertension		22 (44 %)
Waist circumference		99.34 ± 15.78 (65.00-155.00)
Active disease		19 (38 %)
Remission		21 (42 %)

CD patients with obesity were 36.7%, and those with UC and obesity were 37%.

Table 2 presents a comparative analysis of BMI according to IBD and individual parameters. A gender difference in BMI was found between CD and UC patients. UC patients who smoke have a higher BMI compared to smoking CD patients (34.47 kg/m2 for UC and 29.92 kg/m2 for CD, respectively). When comparing IBD patients according to BMI, we found no difference in the main comorbidities (diabetes and hypertension). A significant difference in BMI was found between UC patients with an active disease and those in remission ($p<0.01$). No significant difference was found in CD patients.

Table 2. Comparative analysis of BMI in the UC and BC patients according to some parameters

Parameter		Crohn's disease (n=22)	Ulcerative colitis (n=28)	P value
Gender	Male	27.66 ± 4.45	31.21 ± 8.82	< 0.05
	Female	31.45 ± 5.67	27.65 ± 5.21	< 0.05
Smokers		29.92 ± 3.77	34.47 ± 10.15	0.031
Diabetes		30.92 ± 4.88	29.66 ± 3.28	>0.05
Hypertension		31.53 ± 4.22	31.98 ± 7.33	>0.05
Active disease		28.03 ± 4.01	26.77 ± 5.75	<0.05
Remission		29.93 ± 6.91	31.78 ± 7.92	>0.05

In both diseases, a strong correlation was found between BMI and waist circumference ($r=0.965$; $p < 0.001$ for UC and $r=0.845$; $p < 0.001$ for CD, respectively) (Figure 1).

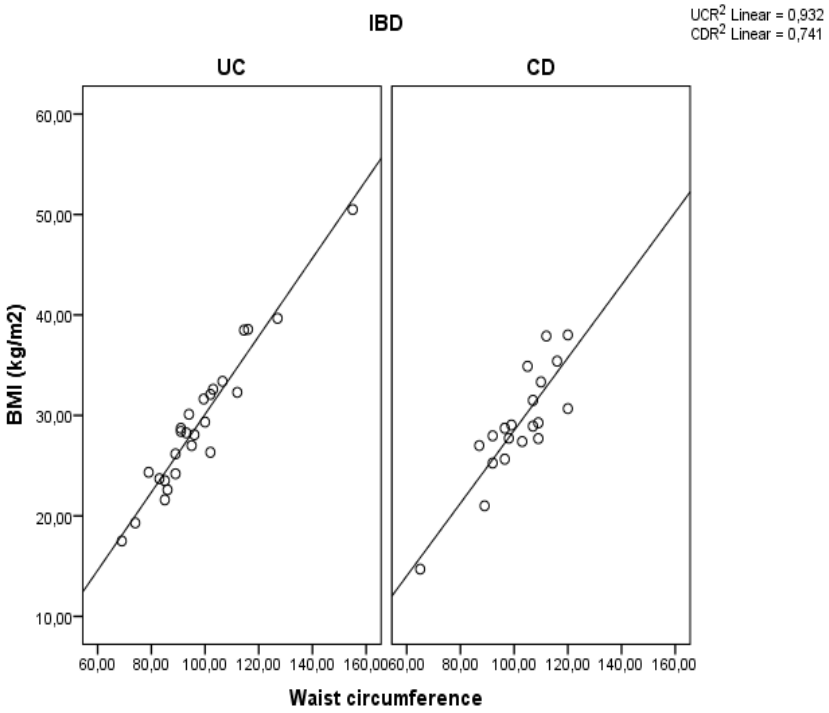

Figure 1. Correlation between BMI and waist circumference in UC and CD patients

Both, in the period of active disease and in remission, a strong correlation was found between BMI and waist circumference (r=0.949; $p < 0.001$ for UC and r=0.866; $p < 0.001$ for CD, respectively) (Figure 2).

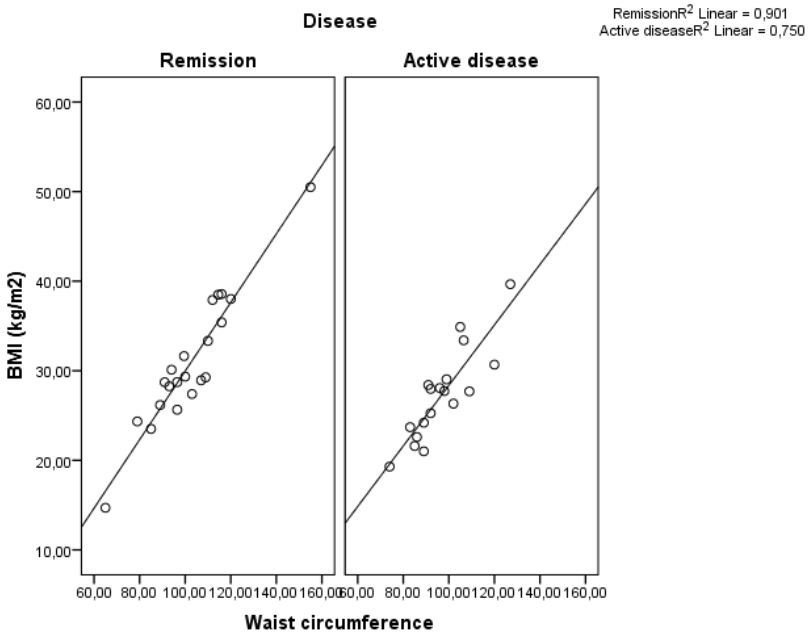

Figure 2. Correlation between BMI and waist circumference in patients with active disease and in remission

The prevalence of obesity in IBD patients is a major research topic, showing considerable variation in incidence between 5 and 30%. [1, 16]

A Scottish population-based study of 489 IBD patients showed that 18% of patients had signs of obesity (compared to 23% of the general population); obese CD patients were 18%, while obese UC patients were 17.5% [19]. The rate of obesity in our cohort (37%) was

significantly higher than the 10.8% in the general population reported according to the Eurostat European survey [5].

We did not find any association between disease activity and BMI. This may not be consistent with some literature data showing that visceral fat [20, 22] and high BMI [23] are associated with poor prognosis. Our study was cross-sectional, therefore we could not assess disease progression during a follow-up period. This can be seen as a limitation. Other studies also did not find a strong association between BMI and disease activity and prognosis [3, 10, 17, 18], and this highlights how this topic is still debated and with conflicting evidence. Another important finding was that only abdominal circumference was independently associated with obesity in IBD.

Conclusion: In conclusion, our study can lay the foundation of some further research. As epidemiologically IBD is increasing in the developed countries, the pathogenetic role and influence on disease outcome played by diet should not be underestimated and should be further investigated.

Planning new clinical trials aiming the investigation of the clinical, laboratory and endoscopic parameters at baseline and after the changes in BMI may be useful, as this topic is still very poorly studied.

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