

ROMA 4 KRİTERLERİNE GÖRE İRRİTABLE BAĞIRSAK SENDROMU SUBTİPİNİN VÜCUT KİTLE İNDEKSİ İLE İLİŞKİSİ

CORRELATION OF IRRITABLE BOWEL SYNDROME SUBTYPE BASED ON THE ROME IV CRITERIA WITH BODY MASS INDEX

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ABSTRACT

INTRODUCTION: Irritable bowel syndrome (IBS) is a disorder that is common in the community and deteriorates the quality of life. The Rome IV criteria are the current diagnostic method for the diagnosis of IBS. The aim of this study was to investigate the correlation between the subtype of IBS patients diagnosed based on the Rome IV criteria and body mass index (BMI).

MATERIAL AND METHOD: The age, sex, IBS subtype (predominant diarrhea, predominant constipation, mixed bowel habits and unclassified) and BMI (kg/m²) of the patients presented to the general surgery outpatient clinic of Ordu University Training and Research Hospital between June 1, 2017 - January 1, 2018 and diagnosed with IBS based on the Rome IV criteria were retrospectively analyzed.

RESULTS: The mean age of 452 patients with IBS was 35.19±10.16 years (min 18-max 68 years). The BMI values were found as follows: 8 (1.8%) patients had a BMI value of <18.5 kg/m², 100 (22.1%) patients had a BMI value of 18.5-24.9 kg/m², 134 (29.6%) patients had a BMI value of 25-29.9 kg/m², 210 (46.5%) patients had a BMI value of ≥30 kg/m². It was found that among the patients, 78 (17.3%) had predominant diarrhea, 214 (47.3%) had predominant constipation, 125 (27.7%) had mixed bowel habits, and 35 (7.7%) were unclassified. In the study, there was no statistically significant difference between IBS subtype and BMI (p>0.05).

CONCLUSION: In our study, there was no statistically significant correlation between IBS subtype and BMI. We are of the opinion that our study will shed light on the future studies with larger population.

Keywords: Rome IV criteria, irritable bowel syndrome, body mass index

ÖZET

AMAÇ: İrritable bağırsak sendromu (İBS) toplumda sık görülen ve yaşam kalitesini bozan bir hastalıktır. Roma IV kriterleri İBS tanısı için kullanılan güncel tanı metodudur. Çalışmada Roma IV kriterlerine göre tanı konulan İBS'li hastaların subtipi ile vücut kitle indeksi (VKİ) arasındaki ilişkinin araştırılması amaçlanmıştır.

GEREÇ VE YÖNTEM: 1 Haziran 2017-1 Ocak 2018 tarihleri arasında Ordu Üniversitesi Eğitim ve Araştırma Hastanesi genel cerrahi polikliniğine başvurup Roma 4 kriterlerine göre İBS tanısı koyulan hastalar yaş, cinsiyet, İBS subtipi (diyare ağırlıklı, kabızlık ağırlıklı, kompleks ve sınıflandırılmayan) ile VKİ(kg/m²) retrospektif olarak analiz edildi.

BULGULAR: İBS'li 452 hastanın yaş ortalaması 35,19±10,16 (min 18-max 68) olarak saptandı. Hastaların VKİ değerleri; 8'inde (%1,8) <18,5 kg/m², 100'ünde (%22,1) 18,5-24,9 kg/m², 134'ünde (%29,6) 25-29,9 kg/m², 210'unda (%46,5) ≥30 kg/m² olarak saptandı. Hastaların 78'i (%17,3) diyare ağırlıklı, 214'ü (%47,3) kabızlık ağırlıklı, 125'i karışık ağırlıklı (%27,7) ve 35'i (%7,7) sınıflandırılmayan olarak saptandı. Çalışmada İBS subtipi ile VKİ arasında istatistiksel olarak anlamlı fark saptanmadı (p>0,05).

SONUÇ: Çalışmamızda, İBS subtipi ile VKİ arasında istatistiksel olarak anlamlı bir ilişki bulunmamıştır. Çalışmamızın gelecekte yapılacak olan daha geniş popülasyonlu çalışmalara ışık tutacağı kanaatindeyiz.

Anahtar Kelimeler: Roma IV kriterleri, irritable bağırsak sendromu, vücut kitle indeksi

INTRODUCTION

Irritable bowel syndrome (IBS) is a condition characterized by abdominal pain, bloating and changes in bowel movements (1). In the etiology, psychosocial factors, intestinal microbiota, diet, genetic and inflammatory factors have been implicated (2-4). As there is no laboratory or structural marker to make the diagnosis of IBS, it is

diagnosed by examining the symptoms well and excluding the organic factors (5). The Rome IV criteria have been defined for the diagnosis of IBS. According to the Rome IV criteria, "the onset of symptoms 6 months before the diagnosis and presence of 2 or more below-listed factors in the last 3 months along with recurrent abdominal pain once a week on average establish the diagnosis of IBS in

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the patient: a-Related to defecation (relief with defecation) b-Associated with a change in stool frequency c-Associated with a change in stool form or appearance" (6). IBS is divided into four groups as "IBS with predominant diarrhea, predominant constipation, mixed bowel habits and unclassified" (IBS-D, IBS-C, IBS-M, and IBS-U, respectively) according to the Bristol stool chart scores within the Rome IV diagnostic criteria (6).

Epidemiological studies have shown that being overweight and obesity (a body mass index (BMI) of ≥ 30 kg/m²) are increasing worldwide (7). In some studies, low weight (a BMI of < 18.5 kg/m²) and obesity have been shown to be associated with more than one gastrointestinal symptoms (8,9). In the light of these studies, studies to reveal the correlation between BMI and IBS have come up with regard to clarifying the etiology of IBS (10,11).

The aim of this study was to investigate the correlation between the subtypes of IBS patients diagnosed based on the Rome IV criteria and body mass index.

MATERIAL AND METHOD

The retrospective study included patients admitted to the general surgery outpatient clinic of Ordu University Training and Research Hospital between June 1, 2017- 1 January, 2018 and diagnosed with IBS based on the Rome IV criteria. The patients were retrospectively analyzed in terms of age, gender, IBS subtype (diarrhea-weighted, constipation-weighted, mixed bowel habits and unclassified) and BMI. Before the patients were diagnosed with IBS, laboratory examinations, imaging methods and colonoscopy were performed to exclude organic factors. Patients under 18 years of age, patients who are on drug therapy that may affect bowel movements (calcium channel blockers, antihistamines, antipsychotics), patients with diseases that may affect bowel movements (diabetes mellitus, multiple sclerosis, hypothyroidism, hyperthyroidism, Parkinson's disease, schizophrenia, inflammatory bowel disease, malignancy) were not included in the study. Our hospital's data processing system data and patients files were used for the analysis. Written informed consent was obtained from the patients for endoscopic procedure.

The patients were diagnosed with IBS based on the Rome IV criteria and divided into subtypes using the Bristol stool chart.

BMI was calculated by dividing the body weight (kg) of the patients by their height squared (m²). According to the World Health Organization (WHO) classification, they were categorized as underweight (< 18.5 kg/m²), normal weight (18.5-24.9 kg/m²), overweight (25-29.9 kg/m²), obese (≥ 30 kg/m²).

In our study, the descriptive statistics for continuous variables were expressed as mean, standard deviation, minimum and maximum values, while the categorical variables were expressed as number and percentage. The Mann-Whitney U test was performed for continuous variables. The chi-square test was used to determine the correlation between the categorical variables. In calculations, the statistical significance level was set to 5% ($p=0.05$) and the SPSS (IBM SPSS for Windows, V.24) statistical package software was used for calculations.

Ethical approval for the study was obtained from the Clinical Research Ethics Committee of Ordu University, Faculty of Medicine.

RESULTS

In the study, there was a total of 452 patients, of whom 333 (73.7%) were female and 119 (26.3%) were male. The mean age of the patients was 35.19 ± 10.16 years (min 18-max 68 years). The mean age of the females was 38.11 ± 10.07 years and the mean age of the males was 38.43 ± 10.46 years. There was no statistically significant difference in terms of gender distribution and mean age of the patients ($p>0.05$). When the IBS subtypes of the patients were evaluated, it was found that 78 (17.3%) had predominant diarrhea, 214 (47.3%) had predominant constipation, 125 (27.7%) had mixed bowel habits, and 35 (7.7%) were unclassified. The BMI of the patients were found as follows: 8 (1.8%) patients had a BMI of < 18.5 kg/m², 100 (22.1%) patients had a BMI of 18.5 -24.9 kg/m², 134 (29.6%) patients had a BMI of 25-29.9 kg/m², 210 (46.5%) patients had a BMI of ≥ 30 kg/m².

There was no significant difference in the genders and BMI values of the patients ($p=0.25$). The information on the gender and IBS subtypes of the patients is shown in **Table 1**.

The mean BMI of the patients was 28.94 ± 4.94 . The mean BMI was found as 29.09 ± 4.89 in female patients and

Table 1 Gender and IBS subtype data of the patients

Variables	IBS-D (%)	IBS-C (%)	IBS-M (%)	IBS-U (%)	n	P value
Gender						
Female	56 (71.8%)	162 (75.7%)	94 (75.2%)	21 (60%)	333	0.25*
Withinfemale	(16.8%)	(48.6%)	(28.2%)	(6.3%)		
Male	22 (28.2%)	52 (24.3%)	31 (24.8%)	14 (40%)	119	
Withinmale	(18.5%)	(43.7%)	(26.1%)	(11.8%)		
Total	78	214	125	35	452	

*The Chi-Square test was used.

Table 2 IBS subtypes and BMI information of the patients

Variables	IBS-D (%)	IBS-C (%)	IBS-M (%)	IBS-U (%)	P value
<18.5 kg/m ²	1 (12.5%)	3 (37.5%)	3 (37.5%)	1 (12.5%)	0.99*
18.5-24.9 kg/m ²	18 (18%)	47 (47%)	27 (27%)	8 (8%)	
25-29.9 kg/m ²	21 (15.7%)	66 (49.3%)	38 (28.4%)	9 (6.7%)	
≥30 kg/m ²	38 (18.1%)	98 (46.7%)	57 (27.1%)	17 (8.1%)	

*The Chi-Square test was used.

28.54±5.06 in male patients. There was no significant difference between BMI and gender (p=0.25). There was no significant difference between the IBS subtypes and BMI values of the patients (p=0.99). There was no significant difference between the BMI groups in IBS subtypes in terms of gender (p=0.22). The IBS subtypes and BMI information of the patients are shown in **Table 2**.

DISCUSSION

IBS is one of the functional gastrointestinal disorders which is common worldwide, deteriorates the quality of life and causes high health care costs. The prevalence of IBS is between 5-20% in the world (1). In the study by Drossman et al., it was shown that the prevalence of IBS is higher in women than in men and is more common under the age of 50 years (12). Our study was in line with the literature in terms of gender and age distribution.

The Rome IV criteria created for the diagnosis of IBS are more specific and sensitive than the previously used Rome criteria (13). In our study, the Rome IV criteria were used for the diagnosis of IBS.

In the study by Aasbrenn et al., the prevalence of IBS subtypes was determined as follows: IBS-M (65%), IBS-C (18%), IBS-D (12%), IBS-U (6%) (14). In our study, the rate of IBS-M was 27.7% and the highest rate was of IBS-C with 47.3%. We believe that this difference depends on geographic factors.

There are numerous studies investigating BMI and functional gastrointestinal tract diseases. In the study by Delgado-Aros et al., it was found that the complaints of diarrhea, abdominal pain, nausea and vomiting increased with increased BMI (15). In a study by Talley et al. conducted in Australia, it was found that there was a positive correlation between increased BMI and the complaints of heartburn and diarrhea (16). In these studies, the correlation between increased BMI of patients and gastrointestinal symptoms was investigated and IBS patients were not included in the studies. In our study, IBS patients were analyzed and our study was not consistent with the studies by Delgado et al. and Talley et al. We are of the opinion that this difference may be due to the pathophysiology of IBS, unlike normal cases.

There are numerous studies on the correlation between IBS subtype and BMI. In the study by Sadik et al., it was found that increased BMI was correlated with decreased

gastrointestinal transit time and higher frequency of defecation in IBS patients (17). In this study, radiological methods were used to measure gastrointestinal transit time and their results were not consistent with our study. In a 2011 study by Kubo et al., it was found that the frequency of defecation increased in IBS patients with decreased BMI (18). In our study, we found that the frequency of defecation did not change in IBS patients with the change in BMI.

Our study had some limitations. These include retrospective data collection and being a single-centered study.

In our study, there was no statistically significant correlation between IBS subtype and BMI. We are of the opinion that our study will shed light on the future studies with larger population.

11-15 Nisan 2018 tarihleri arasında 21.Ulusal Cerrahisi Kongresinde poster bildiri olarak sunulmuştur.

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