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RESEARCH ARTICLE

Evaluation of Constipation Risk among Inpatients in Surgery and Internal Medicine Wards

Cerrahi ve Dahili Kliniklerde Yatan Hastalarda Konstipasyon Riskinin Değerlendirilmesi

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ABSTRACT

Aim: This study was conducted to evaluate the risk of constipation among inpatients in the surgery and internal medicine wards.

Method: This descriptive study included 251 inpatients being treated in the Ağrı State Hospital between April 2018 and June 2018 who consented to participate. Data were collected using a personal information form and the constipation risk assessment scale (CRAS).

Results: The mean age of the participants was 49.74±19.50 years. Analysis of the patients' distributions according to mean CRAS score and socio-demographic characteristics showed that gender, marital status, education level, and occupation were statistically significant ($p<0.05$, $p<0.01$). In addition, when the distribution of the patients according to mean CRAS total score and health status/lifestyle characteristics was examined, statistically significant differences were observed in terms of hospital ward, presence of chronic disease, regular medication use, predominant food group, skipping meals, regular exercise, constipation problem, and constipation risk ($p<0.05$, $p<0.01$). There was a statistically significant positive correlation between total CRAS score and age ($p<0.01$).

Conclusion: Older age was associated with more problems with constipation in our study group. Therefore, it is recommended to prevent or solve the problem through constipation risk assessment for inpatients, early diagnosis of constipation, appropriate nursing interventions, and team collaboration.

Keywords: Constipation, constipation risk assessment, constipation care

ÖZ

Amaç: Bu araştırma, cerrahi ve dahili kliniklerde yatan hastalarda konstipasyon riskinin değerlendirilmesi amacıyla yapıldı.

Yöntem: Tanımlayıcı tipteki çalışma, Ağrı Devlet Hastanesi'nde Nisan 2018-Haziran 2018 tarihleri arasında servislerde yatan ve çalışmayı kabul eden 251 hastanın katılımıyla yapıldı. Veriler kişisel bilgi formu ve konstipasyon risk değerlendirme ölçeği (KRDÖ) kullanılarak toplandı.

Bulgular: Araştırmaya katılanların yaş ortalaması 49,74±19,50 idi. Araştırmaya katılan hastaların KRDÖ toplam puan ortalamaları ile sosyo-demografik özelliklerine göre dağılımları incelendiğinde; cinsiyet, medeni durum, eğitim durumu ve meslek özellikleri arasında istatistiksel olarak anlamlı fark olduğu bulundu ($p<0,05$, $p<0,01$). Ayrıca, hastaların KRDÖ toplam puan ortalamaları ile sağlık durumu ve yaşam tarzı özelliklerine göre dağılımları incelendiğinde; hastanın yattığı servis, kronik hastalık durumu, düzenli ilaç kullanımı, en çok tüketilen besin grubu, öğüt atlama durumu, düzenli egzersiz yapma, kabızlık sorunu ve konstipasyon riski özellikleri açısından istatistiksel olarak anlamlı fark olduğu belirlendi ($p<0,05$, $p<0,01$). KRDÖ toplam puanı ile yaş arasında pozitif yönde istatistiksel açıdan anlamlı bir ilişki olduğu bulundu ($p<0,01$).

Sonuç: Çalışmaya katılan hastaların yaşları arttıkça, konstipasyon sorununu daha fazla yaşadıkları belirlendi. Bu nedenle özellikle yatan hastaların konstipasyon risk değerlendirilmesinin yapılması, konstipasyon sorununun erken dönemde tanılanması, uygun hemşirelik girişimleri ve ekip iş birliği ile sorunun önlenmesi ya da çözülmesi önerilmektedir.

Anahtar Kelimeler: Konstipasyon, konstipasyon risk değerlendirmesi, konstipasyonda bakım

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Introduction

Constipation is a clinical entity of variable etiology that can cause complaints such as abdominal pain, bloating, cramps, nausea, vomiting, and malnutrition.[1,2,3] It is also described as a condition that affects both body and mind, causing feelings of panic and helplessness. Due to the nature of this problem, patients find it difficult to discuss and often feel that medical personnel do not give it sufficient consideration.[4] Constipation also increases the risk of megacolon, volvulus, colorectal cancer, and psychological conditions such as depression and mood disorders.[5,6]

Several risk factors and etiologies have been reported in relation to the development of constipation. A review of factors associated with constipation reported pelvic floor dysfunction (hernia, prolapse), colorectal disorders (irritable bowel syndrome, tumors), neuromuscular disorders (Parkinson's disease, stroke) and metabolic disorders (diabetes, hypokalemia) among its causes.[7] It has also been reported that psychological disorders like depression are associated with constipation, and the prevalence of constipation was found to be significantly higher among individuals with dementia compared to a control group.[8] In addition, certain medications, such as opioid analgesics and drugs with anticholinergic properties, are known to provoke constipation.[7,9] Associations between constipation and low mobility, dehydration, addiction, and nutritional problems have also been reported.[10,11]

Constipation is a common health problem in the general population, with an incidence of 2-28% reported in the literature.[12,13] According to the results of population-based studies conducted in Turkey, the incidence of constipation varies between 22-40% in our country.[14] Various studies have shown that constipation is more common in females than males, in blacks versus whites, and in children and the elderly compared to adults.[15] In particular, the bowel habits of hospital inpatients change due to immobility during treatment, the effects of some drugs, and staying in the hospital, which can cause constipation. In patients undergoing surgery, constipation risk increases in the early postoperative period due to being bedbound, taking opioid/non-opioid analgesic drugs, and having to defecate while in bed using a bedpan. Postoperative constipation prolongs hospital stays, causes comorbidity in addition to the existing disorders, and adversely affects patients' quality of life.[12,16] The aim of the current study was to assess constipation risk among patients hospitalized in the internal medicine and general surgery departments for any reason.

Materials and Methods

Research Design

This is a descriptive study.

Population and sample: The study population consisted of patients admitted to various units of Ağrı State Hospital between April 2018 and June 2018. The study sample included patients hospitalized in the internal medicine and surgery departments of Ağrı State Hospital who volunteered to participate in the study, were over 18 years of age, and had no communication problems.

Data Collection Tools

Personal data form: Consisted of 16 questions prepared by the researchers to gather descriptive data about the patients.

Constipation risk assessment scale: Developed in 2005 by Richmond and Wright.[17] Validity and reliability studies for the Turkish version of the constipation risk assessment scale (CRAS) were conducted by Kutlu et al.[18] in 2010. The scale consists of four sections including lifestyle, hospital-related factors, physiological and psychological conditions, and drugs that increase constipation risk. The lifestyle section has five subheadings: gender, mobility, fiber intake, fluid intake, and personal beliefs. There are a total of 16 questions under these five subheadings. The hospital-related section has two subcategories, one for ward patients only and one for patients who require a bedpan. There are a total of two questions under these two subheadings. The physiological and psychological conditions section has seven subheadings: metabolic disorders, pelvic conditions, neuromuscular disorders, endocrine disorders, colorectal/abdominal disorders, psychiatric illnesses, and learning disabilities/dementia. There are six subheadings in the section regarding drugs that increase constipation risk: antiemetics, calcium channel blockers, iron supplements, anticholinergic-containing drugs, analgesics, and cytotoxic chemotherapy. Subscores are written at the end of each section and the total score is used to determine the patient's constipation risk group. A subtotal of 1-11 points can be obtained in the lifestyle section, 0-4 for hospital-related factors, 0-18 for physiological and psychological conditions, and 0-30 points in the section about drugs that increase constipation risk. Therefore, the total score obtained from the CRAS is between 1 and 63. A score of 1-10 is considered low risk, 11-15 as moderate risk, and 16 or more as high risk.[17,18]

Data collection: The study data were collected in face-to-face interviews with inpatients in the internal medicine and surgery units between April 2018 and June 2018. Completing the data collection forms took about 10 minutes.

Data analysis: Data analysis was done using SPSS statistics software. Data were analyzed using numbers, percents, mean, Kolmogorov-Smirnov test, Kruskal-Wallis test, Mann-Whitney U test, and Spearman correlation analysis.

Table 1. Distribution of the patients' mean total constipation risk assessment scale scores according to socio-demographic characteristics (n=251)

Variable	n (%)	X ± SD	U/KW
Gender			
Male	155 (61.8)	49.20±21.07	U=5269
Female	96 (38.2)	50.60±16.73	p=0.000**
Marital status			
Married	190 (75.7)	9.26±4.40	KW=13.985
Single	43 (17.1)	6.79±3.61	p=0.001*
Widowed	18 (7.2)	8.06±4.36	
Education level			
Illiterate	92 (36.7)	10.32±4.68	
Elementary school	109 (43.4)	7.86±4.10	KW=21.149
High school	43 (17.1)	8.14±3.57	p=0.000**
University	7 (2.8)	5.71±1.79	
Occupation			
Employed	56 (22.3)	7.32±3.41	KW=6.528
Unemployed	175 (69.7)	9.11±4.55	p=0.038*
Retired	20 (8.0)	9.55±4.37	
Income level			
Income less than expenses	90 (35.9)	8.47±4.68	KW=1.375
Income equal to expenses	148 (59)	8.87±4.09	p=0.503
Income greater than expenses	13 (5.2)	9.31±5.25	
Age, years			
49.74±19.50			
(min. 18, max. 88)			

KW: Kruskal-Wallis, SD: Standard deviation, Min: Minimum, Max: Maximum, X: Mean
*p<0.05, **p<0.01

Study limitations: Being conducted in a single center in a single province of Turkey is a limitation of this study.

Results

Of the 251 participants, 61.8% were males, 75.7% were married, 43.4% were primary school graduates, 69.7% were unemployed, and 59% had income equal to their expenses. The mean age of the participants was 49.74±19.50 years (Table 1). Analysis of mean CRAS total scores according to socio-demographic characteristics revealed statistically significant differences in CRAS scores based on gender, marital status, education level, and occupation (p<0.05, p<0.01, Table 1), but there was no statistically significant difference in terms of income status (p>0.05; Table 1).

It was found that 20.3% of the study participants were in the internal medicine ward, 65.7% had no chronic diseases, 94.4% did not have hemorrhoids, 59% were not on a regular medication, 53.8% consumed meat and dairy products, 53.8% did not skip meals, 60.6% drank 2 liters of water a day, 86.9% did not exercise regularly, 82.5% did not have a problem with constipation, 92.8% had not used laxatives, and 69.7% had low constipation risk (Table 2).

Analysis of mean CRAS total score distribution according to health status and lifestyle parameters revealed statistically significant differences in CRAS scores based on the patient's ward, chronic diseases, regular medication, predominant food group, skipping meals, regular exercise, constipation problem, and constipation risk factors (p<0.05, p<0.01; Table 2), but no significant differences were observed in terms of daily fluid intake, presence of hemorrhoids, or use of laxatives (p>0.05; Table 2).

There was a statistically significant positive correlation between mean CRAS total score and age (p<0.01; Table 3).

Discussion

Constipation is a serious problem that may result in fatal intestinal obstruction due to clinical symptoms being overlooked.[19,20] In population-based studies with large

Table 2. Distribution of the patients' mean total constipation risk assessment scale scores according to health status and lifestyle characteristics (n=251)

Variable	n (%)	X ± SD	U/KW
Ward			
General surgery	35 (13.9)	7.57±3.09	
Internal medicine	51 (20.3)	10.49±4.07	
ENT	47 (18.7)	8.17±5.10	KW=17.097
Urology	26 (10.4)	8.85±4.73	p=0.009**
Orthopedics	40 (15.9)	7.75±4.18	
Plastic surgery	6 (2.4)	9.17±3.86	
Cardiology/pulmonology	46 (18.3)	9.07±4.27	
Chronic disease			
Yes	86 (34.3)	11.05±4.39	U=3720
No	165 (65.7)	7.55±3.84	p=0.000**
Hemorrhoids			
Yes	14 (5.6)	8.64±4.12	U=1653
No	237 (94.4)	8.76±4.38	p=0.982
Regular medication use			
Yes	103 (41)	10.79±4.79	U=4283
No	148 (59)	7.33±3.38	p=0.000**
Predominant food group			
Grains	83 (33.1)	9.22±4.86	
Meat and dairy	135 (53.8)	8.01±3.71	KW=8.523
Fruit and vegetables	33 (13.1)	10.61±4.87	p=0.014*
Skips meals?			
Yes	116 (46.2)	9.60±4.75	U=6397.5
No	135 (53.8)	8.01±3.86	p=0.012*
Daily fluid intake			
Less than 1 L	56 (22.3)	10.32±5.65	KW=5.639
2 L	152 (60.6)	8.24±3.70	p=0.060
2-3 L	43 (17.1)	8.49±4.22	
Regular exercise			
Yes	33 (13.1)	7.09±3.36	U=2709.5
No	218 (86.9)	9.00±4.44	p=0.022*
Constipation problem			
Yes	44 (17.5)	10.98±4.89	U=3017
No	207 (82.5)	8.28±4.10	p=0.000**
Laxative use			
Yes	18 (7.2)	10.06±4.19	U=1665.5
No	233 (92.8)	8.65±4.36	p=0.145
Constipation risk			
Low, ≤10 points	175 (69.7)	6.43±2.43	KW=161.575
Moderate, 11-15 points	56 (22.3)	12.70±1.36	p=0.000**
High, ≥16 points	20 (8)	17.95±2.52	

ENT: Otorhinolaryngology, KW: Kruskal-Wallis, SD: Standard deviation, X: Mean
*p<0.05, **p<0.01

Table 3. Correlation between constipation risk assessment scale total score and age

		Constipation risk assessment scale total score
Age	r	0.342*
	p	0.000

*p<0.01

samples, constipation was reported to be twice as common in females than in males.[15,21,22] Bilgiç et al.[23] also found that women experienced constipation more often than men. Similarly, the female participants had a higher mean constipation risk score. It has been shown in the literature that low education level is associated with higher prevalence of constipation.[15,24] Our finding of higher mean constipation risk score among the illiterate participants in this study supports the literature. This suggests a possible link between education level and diet.

Constipation is one of the most common postoperative complications. The prevalence of constipation among inpatients has been reported as 79%.[25] According to a study by Celik et al.,[26] 25-40% of patients hospitalized for abdominal surgery had evacuation difficulty. In the current study, patients in the internal medicine ward were found to have higher mean constipation risk score. This may be because patients being treated in internal medicine are those with extended hospital stays, restricted movement, and regular medications due to chronic diseases.

Studies have indicated a negative correlation between constipation and physical activity.[27,28] Uysal et al.[29] determined that constipation was more common in people who did not exercise and had a sedentary lifestyle. In the literature, sedentary lifestyle is a well documented risk factor for constipation.[12,16,26,30] In a study conducted in women having constipation, 74.3% were found to have a sedentary lifestyle.[31] Consistent with the literature, the group of participants in our study who reported not exercising regularly had a higher mean constipation risk score.

The results of a study by Sendir et al.[16] indicated that the patients were in the moderate risk group with a mean CRAS score of 12.73±4.75. On the other hand, the mean CRAS scores obtained in our study showed that most of the participants were in the low-risk group. Most studies have shown that the prevalence of constipation increases with older age. Evidence suggests that constipation incidence increases with age, with 40% of those aged 65 and older having problems with constipation.[21,22] It is one of the common complaints of geriatric patients and can result in morbidity among elderly nursing homes residents.[32,33] Constipation has been described as a distressing, chronic, and recurrent problem that affects approximately 50-73% of elderly nursing home residents.[34] Bailes and Reeve[35] determined that 28% of males aged 84 and over experienced constipation. In accordance with literature data, the present study revealed a significant positive correlation between patient age and constipation risk.

In conclusion, this study elucidated risk factors affecting constipation and relationships among them. It is clear that older age in particular is a significant and nonmodifiable risk factor. However, constipation can be prevented or resolved by managing the other risk factors based on the patient's current condition. We recommend that nurses, as one of the members of the medical team who have the most contact with patients, conduct constipation risk assessment for inpatients, work in cooperation with the medical staff, and prepare guidelines regarding this issue.

Ethics

Ethics Committee Approval: The study was approved by the Ağrı İbrahim Çeçen University Local Ethics Committee (approval number: 95531838-900).

Informed Consent: Consent form was filled out by all participants.

Peer-review: External and internal peer-reviewed.

Authorship Contributions

Concept: Ş.K.A., Design: Ş.K.A., Data Collection or Processing: Ş.K.A., Analysis or Interpretation: Ş.K.A., Literature Search: Ş.K.A., Writing: Ş.K.A.

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