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Original Article

The effect of health anxiety on postoperative analgesia requirement and anesthesia recovery in patients undergoing laparoscopic cholecystectomy

Laparoskopik kolesistektomi hastalarında sağlık anksiyetesinin postoperatif ağrı algısı ve analjezik ihtiyacına etkisi

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ABSTRACT

Introduction: Health anxiety is the excessively negative interpretation of normal physical signs in an individual with no physical disease. Having knowledge information about the health anxiety levels of patients is one of the criteria that will affect the treatment of the patients' pain. The aim of this study was to evaluate the preoperative health anxiety of laparoscopic cholecystectomy patients together with the perception of postoperative pain and the requirement for analgesia.

Methods: The study included 41 patients of American Society of Anesthesiologists(ASA) grade I-II, aged 18-65 years who were to undergo a laparoscopic cholecystectomy operation and a control group of 40 healthy individuals. The Health Anxiety Inventory was applied to the patients preoperatively and to the control group. In the postoperative period, the patients were followed up for 24 hours with a patient-controlled analgesia device prepared with tramadol. Visuel Analog Scale(VAS) values of patients were below 4 due to the use of patient controlled analgesia device. Total analgesic consumption was recorded. The results were compared statistically.

Results: No significant difference was determined between the patient and control groups in respect of age, gender and body mass index ($p>0.05$). The VAS score of all the patients was less than four. The mean total tramadol consumption of the patients in the first 24 hours postoperatively was 221.58±73.06 mg. The analgesia consumption of female patients was significantly higher than that of males ($p=0.013$). The health anxiety levels of the patient group were found to be significantly higher than the control group ($p<0.001$). A positive correlation was determined in the patient group between health anxiety and the total analgesia requirement ($r=0.813$, $p<0.01$).

Conclusions: In conclusion, high level of analgesia consumption was determined in those with high health anxiety and in female patients. When planning postoperative pain treatment, consideration of the gender of the patient and the level of health anxiety will make a positive contribution to the treatment.

Keywords: Health anxiety, pain, laparoscopic cholecystectomy, analgesia

ÖZ

Giriş: Sağlık anksiyetesi, herhangi bir bedensel hastalık bulunmadığı halde kişide normal bedensel belirtilerin olumsuz yönde aşırı yorumlanmasıdır. Hastaların sağlık anksiyete düzeyleri ile ilgili bilgi sahibi olmak hastaların ağrı tedavisini etkileyecek kriterlerden bir tanesidir. Bu çalışmada laparoskopik kolesistektomi hastalarında preoperatif sağlık anksiyetesi ile postoperatif ağrı algısı ve analjezik ihtiyacının değerlendirilmesi amaçlanmıştır.

Yöntem: Çalışmaya American Society of Anaesthesiologists (ASA) I-2 grubu 18-65 yaş arasında ve laparoskopik kolesistektomi operasyonu geçirecek 41 hasta ve 40 sağlıklı kontrol alındı. Sağlıklı kontrollere ve operasyon planlanan hastalara preoperatif dönemde Sağlık Anksiyetesi Envanteri uygulandı. Opere olan hastalara postoperatif dönemde tramadol ile hazırlanmış hasta kontrollü analjezi cihazları takılarak 24 saat takip edildi. Hasta kontrollü analjezi cihazı kullanıldığı için hastların Vizüel Analog Skala (VAS) değerleri 4'ün altındaydı. Total analjezik tüketim miktarı kaydedildi. Sonuçlar istatistiksel olarak karşılaştırıldı.

Bulgular: Hasta ve kontrol grubu arasında yaş, cinsiyet ve beden kitle indeksi açısından anlamlı fark yoktu ($p>0,05$). Bütün hastalarda VAS skoru 4'ün altındaydı. Hastaların 24 saat sonundaki total tramadol tüketimi 221,58±73,06 mg idi. Kadın hastalarda analjezik tüketim miktarı erkek hastalardan anlamlı derecede yüksekti ($p=0,013$). Sağlık anksiyetesi düzeyleri hasta grubunda kontrol grubuna göre anlamlı derecede yüksek bulundu ($p<0,001$). Hasta grubunda sağlık anksiyetesi ile total analjezik ihtiyacı arasında pozitif yönde korelasyon tespit edildi ($r=0,813$, $p<0,01$).

Sonuç: Sonuç olarak sağlık anksiyetesi yüksek olanlarda ve kadın hastalarda analjezik tüketiminin anlamlı derecede yüksek olduğu tespit edilmiştir. Hastalarda postoperatif ağrı tedavisi planlanırken cinsiyet ve sağlık anksiyete düzeyinin de göz önünde bulundurulması tedaviye olumlu katkı sağlayacaktır.

Anahtar kelimeler: Sağlık anksiyetesi, ağrı, laparoskopik kolesistektomi, analjezi

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Introduction

Health anxiety is the negative interpretation of normal physical signs in an individual with no physical disease [1]. Although seen more in patients with Disease Anxiety Disorder, health anxiety may be seen in several psychosomatic diseases and medical diseases. The physical symptoms of health anxiety are a feeling of burning and pain in various areas of the body, sweating, shaking, headache, numbness, chest pain and tingling sensations. The person thinks that these symptoms are a warning of a physical disease and starts to perceive these symptoms as a great threat. This perception of a threat causes great anxiety, and the intense anxiety experienced manifests as palpitations, sweating, shaking and disorders of the stomach and intestinal system [2]. This lowers the tolerance of existing pain and causes the pain to be perceived as more severe than it actually is.

Previous studies have shown that 30%-75% of patients have complaints of moderate or severe pain after a surgical operation [3]. Postoperative pain treatment applied at a sufficient level contributes to an acceleration in postoperative recovery and healing, a shorter length of stay in hospital and a reduction in treatment costs [4, 5].

Although treatments applied for postoperative pain vary according to the nature of the surgery, differences may be seen between patients applied with the same surgical procedure in respect of the severity of pain and analgesia treatment [6]. The patient group selected for this study was patients who were to undergo laparoscopic cholecystectomy. The pain associated with the surgical procedure is the most common complaint after laparoscopic cholecystectomy.

[7].

Having knowledge information about the health anxiety levels of patients is one of the criteria that will affect the treatment of the patients' pain. In this study, we aimed to compare the preoperative health anxiety level of laparoscopic cholecystectomy patients with healthy controls and to evaluate the effect of this anxiety level on postoperative pain perception and analgesic requirement.

Methods

The study included 41 patients of American Society of Anesthesiologists (ASA) grade I-II, aged 18-65 years, who were to undergo a laparoscopic cholecystectomy operation at Bozok University Medical Faculty Hospital between April 2018 and May 2018. A control group was formed of 40 age and gender-matched, healthy individuals. Patients were excluded if they were allergic to local anesthetics or opioids, if they had a neurological or psychiatric disease, if they were uncooperative, pregnant or addicted to alcohol or other substances. In cases where the operation was started laparoscopically and was changed to open surgery because of a complication, a drain was applied to the surgical site and the patient was withdrawn from the study.

The Health Anxiety Inventory (short form) (HAI-SF) was applied to the patients preoperatively and to the control group. On the evening before the operation, the patients were instructed how to use the Patient-Controlled Analgesia (PCA) device and information was given about the Visual Analog Scale (VAS), where the severity of pain is scored on a scale of 0-10, with 0 indicating no pain and 10, intolerable pain. In the postoperative period, the patients were followed up for 24 hours with a patient-controlled analgesia device prepared with tramadol. Visuel Analog Scale (VAS) values of patients were below 4 due to the use of patient controlled analgesia device. Total analgesic consumption was recorded.

This study was approved by the Bozok University Ethics Committee (2018-KAEK-189-2018.03.21-11), and written informed consent was obtained from all participants. All the study participants were informed in accordance with the Helsinki Declaration and written informed consent was provided by all.

The Health Anxiety Inventory – Short Form (HAI-SF)

This self-reporting scale consisting of 18 items was developed by Salkovskis et al [8]. The first 14 items question the mental status of the patient and the last 4 items ask about the mental status assuming that the patient could have a serious disease. The responses are of a 4-point Likert type, with scores of 0-3 for each item, and high points indicating a high level of anxiety. There is no cut-off value for the scale. Validity and reliability studies of the scale for the Turkish population were made by Aydemir et al. In addition to the usefulness of this scale in respect of identifying health anxiety in all disease groups, it also contributes to the evaluation of health anxiety in patients presenting at clinics other than Psychiatry [1].

Statistical Analysis

The data were analyzed with SPSS v18 software (SPSS Inc., Chicago, IL, USA). Kolmogorov-Smirnov test was employed to check the compliance of the continuous variables to a normal distribution. Student's t-test was applied because distribution of age, BMI and analgesia consumption variables to a normal distribution. Mann Whitney U test was used for health anxiety variables with non-normal distribution. Pearson and Spearman correlation analysis were used to evaluating the relationships between quantitative variables. Statistical significance was accepted as $p<0.05$.

Results

The patient group comprised 28 females and 13 males with a mean age of 45.93±9.84 years and the control group comprised 28 females and 12 males with a mean age of 44.45±8.11 years. No difference was determined between the groups in respect of age, gender and BMI (Table 1).

Table 1. The sociodemographic data, health anxiety scores and amounts of analgesia consumed in the patient and control groups.

	Patient group n=41	Control group n=40		p value
Female/male	28/13	28/12		0.868
Age (years) (mean±SD)	45.93±9.84	44.45± 8.11		0.464
BMI (mean±SD)	25.29± 3.2	24.35 ± 2.1		0.129
HAI_SF score	Median=15 (min=5, max=41)	Median=7 (min=3, max=17)	U=241*	p<0.001*
Analgesia consumption (mean±SD)	221.58±73.06			

BMI: Body Mass Index, SD: Standard deviation, HAI-SF: Health Anxiety Inventory- short form, *Mann Whitney U Test

No significant difference was determined between the genders in the patient and the control group in respect of the health anxiety scores. The health anxiety scores of the patient group were found to be statistically significantly higher than those of the control group (p<0.001). The analgesia consumption of female patients was statistically significantly higher than that of males (p=0.013) (Table 2).

A positive correlation was determined in the patient group between health anxiety and the total analgesia consumed (r=0.81, p<0.001).

Table 2. The mean health anxiety scores and amounts of analgesia consumed of the female and male patients.

	Female patients (n=28) mean±SD	Male patients (n=13) mean±SD	p value
HAI-SF score	18.89±8.54	14.38±9.36	0.135
Analgesia consumption	240.50±67.81	180.84±69.36	0.013

HAI-SF: Health Anxiety Inventory- short form

Discussion

The results of this study showed that the amount of analgesia consumed by female patients was significantly higher than that of male patients (p=0.013). The health anxiety scores of the patient group were found to be significantly higher than those of the control group (p<0.001). A positive correlation was determined in the patient group between health anxiety and the total analgesia requirement.

Postoperative pain affects the physical and psychological characteristics of an individual and may show vary by signi [9, 10]. Some previous studies have shown that females feel more pain in the postoperative period and have a greater need of analgesia [11-13]. However, in contrast, another study has reported that females feel less pain [14]. In the current study, the analgesia consumption of female patients was determined to be significantly higher than that of male patients.

According to a previous study related to health anxiety, significant consistency was found between health anxiety scores and general anxiety scores [15]. Although several studies have evaluated preoperative anxiety, the current study evaluated the effect of health anxiety and the characteristics of hypochondria in particular on the perception of pain [16, 17]. The health anxiety results of the patient group in the current study were found to be statistically significantly higher than those of the control group. A positive correlation was determined in the patient group between health anxiety and the total analgesia requirement. In a study in which patients in the preoperative period were evaluated, they were divided into two groups as low anxiety and high anxiety according to the level of anxiety. Tramadol consumption and VAS scores were higher in the high anxiety group. In addition, a positive correlation was found between preoperative anxiety level and length of hospital stay [18]. Mimic et al. reported that psychological variables such as depression and anxiety levels were effective in determining the severity of pain in a study [19].

There could be greater analgesia use in those with high levels of health anxiety as anxiety reduces the pain threshold of an individual or because of the focus on the negative results that pain could cause. Therefore, detailed information on the subject of pain given preoperatively to patients with high levels of health anxiety may reduce the dose of analgesia that is felt to be required.

The reason for the great difference in the numbers of male and female patients included in the current study is that surgery for gall bladder disease is applied more often to females.

Limitations

The main limitation of this study was that operation and anesthesia durations were not recorded in the patients, and the structured psychiatric evaluation wasn't performed. Because these factors may have an effect on anxiety and pain perception. Other limitations of this study was that the pain sensation is subjective and the anxiety scale is a self-reported scale.

Conclusion

As a result of this study, preoperative level of anxiety may be an important predictor in determining postoperative analgesic requirement. More careful assessment and treatment planning of post-operative pain management should be done in patients with high anxiety level. In conclusion, when planning postoperative pain treatment, the consideration of the health anxiety level will make a positive contribution to the treatment.

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