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Comparison of VAS scores recorded by nurse vs surgeon: A case-control study

Hemşire ve cerrah tarafından kaydedilen VAS ağrı skorlarının karşılaştırılması: Vaka-kontrol çalışması

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Abstract

Aim: VAS (Visual Analogue Scale) is a scale that is frequently used, easily understood and applied especially in the assessment of postoperative pain. Many parameters are performed mainly by the nurses in the follow-up of the patient in the post-operative period, and follow-up of the pain from the major complaints is also performed by the nurses. The purpose of the study is to exhibit whether the identity of the questioner, i.e., the nurse in charge or surgeon in charge, causes a change in the VAS scale in questioning VAS pain scoring.

Methods: 120 patients who underwent elective laparoscopic cholecystectomy were included the study and the postoperative pain scores of the patients were evaluated with VAS (Visual Analogue Scale) at 1st, 6th and 24th hours. The pain questioning was first performed by the nurse in charge and also 15 minutes later by the physician in charge. No analgesic administration was performed to the patients between the two questioners. The difference between the pain scores was assessed statistically whether it had changed with the identity of the questioners.

Results: It was detected that VAS 1, VAS 6 and VAS 24 score averages were significantly different according to physicians and nurses ($p<0.05$). VAS average of the nurse in the 1st hour was 2.39±1.42 and VAS average of the physician was 1.19±0.79, VAS average of the nurse in the 6th hour was 2.15±1.73 and VAS average of the physician was 1.35± 1.25, VAS average of the nurse in the 24th hour was 1.23±0.96 and VAS average of the physician was 0.68±0.75. For each VAS score; it was detected that VAS scores given by the nurses were significantly higher than the VAS score averages given by the physician ($p<0.05$).

Conclusion: We think that the identity of the questioner is also influential on the pain score expressed by the patient in the assessment of the postoperative pain made by using the VAS pain score, who questions the pain in the pain palliation made by using this scale should also be evaluated.

Keywords: Postoperative pain, VAS, Pain follow-up

Öz

Amaç: VAS (Vısual Analog Scale); özellikle postop ağrının değerlendirilmesinde sık kullanılan, kolay anlaşılan ve uygulanan bir ölçektir. Hastanın ameliyat sonrası dönemde takibinde birçok parametre esas olarak hemşire tarafından gerçekleştirilmekte yine önemli şikayetlerden olan ağrının izlemi de yine hemşireler tarafından yapılmaktadır. Çalışmanın amacı VAS ağrı skorlamasının sorgulanmasında; sorgulayıcının kimliğinin yani sorumlu hemşire ya da cerrahı tarafından yapılmasının VAS ölçeğinde değişime neden olup olmadığını ortaya koymaktır.

Yöntemler: Elektif laparoskopik kolesistektomi yapılan 120 hastanın postoperatif ağrı skorları 1.,6. Ve 24. saatlerde VAS (Visual Analog Scale) ile değerlendirildi. Ağrı sorgulaması önce sorumlu hemşire tarafından, 15 dakika sonra da cerrahı tarafından gerçekleştirildi. Her iki sorgulayıcı arasında hastalara herhangi analjezik uygulaması yapılmadı. Ağrı skorları arasındaki farkın, sorgulayıcının kimliği ile değişip değişmediği istatistiksel olarak değerlendirildi.

Bulgular: VAS 1, VAS 6 ve VAS 24 skor ortalamalarının cerrah ve hemşirelere göre anlamlı düzeyde farklılık gösterdiği tespit edildi ($p<0,05$). 1.saatte hemşire için VAS ortalaması; 2,39±1,42, cerrah için VAS ortalaması; 1,19±0,79, 6.saatte hemşire VAS ortalaması; 2,15±1,73, cerrah VAS ortalaması; 1,35±1,25, 24.saat hemşire VAS ortalaması; 1,23±0,96, cerrah VAS ortalaması; 0,68±0,75 olarak bulundu. Her bir VAS skoru için hemşirelerin verdikleri VAS skorları, cerrahların verdiği VAS skoru ortalamalarından anlamlı derecede daha büyük olduğu tespit edildi ($p<0,05$).

Sonuç: VAS ağrı skoru kullanarak yapılan postoperatif ağrının değerlendirilmesinde sorgulayıcının kimliğinin de hasta tarafından ifade edilen ağrı skorunda etkili olduğu, bu skala kullanılarak yapılacak ağrı palyasyonunda ağrının kimin tarafından sorgulandığının da değerlendirilmesi gerektiğini düşünmekteyiz.

Anahtar kelimeler: Postoperative ağrı, VAS, Ağrı takibi

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Introduction

Pain is a multidimensional subjective experience that the human beings try to describe for centuries [1-3]. According to International Association for the Study of Pain (IASP, 1979) pain is defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" and "a protection mechanism" [3,4].

Pain is actually a subjective concept, which means that it shows large differences from person to person, because many factors (such as gender, religion, language, race, socio-cultural environment) determine pain threshold and consequently response to the painful stimulant [5]. Therefore, both physical and non-physical components should be considered together when evaluating pain.

Pain measurements can be performed by "Direct Measurement" and "Indirect Measurement". Direct measurements are aimed at revealing the nature of the pain. Indirect measurements measure the effect of pain on the quality of life [6].

Another classification for pain measurements is classification as "Unidimensional Measurement" and "Multidimensional Measurement". LANSS (Leeds Assessment of Neuropathic Symptoms and Signs) Scale, Visual Analogue Scale (VAS), Numerical Rating Scale (NRS) and Verbal Rating Scale (VRS) are examples of unidimensional scales. Examples of multidimensional scales are the McGill Pain Questionnaire (MPQ), the Quality of Life Assessment and the Patient Diary [6].

Use of scale in pain assessment, transforms the severity and characteristic of pain into objective state and eliminates the difference between nurse and physician [7].

Visual Analogue Scale (VAS) is a reliable and valid pain measurement method for evaluating the severity of acute and chronic pain [8-10]. The scale consists of a horizontal line with a length of 10 cm. For pain severity according to VAS, “no pain” is generally rated as 0 points and “the worst imaginable pain” is rated as 10 points (10 cm scale) [11]. The patient is told to mark a point on the line that will reflect his pain correctly. The distance of the patient's mark to the left end is measured. This distance, which is usually measured in millimeters, is reported as "points".

Intervals for pain severity are specified as <3 mild pain, 3-6 moderate severe pain, >6 severe pain [11,12].

VAS is a valid and reliable measure used not only for acute pain but also for measurement of chronic pain severity, but it measures the severity of the pain in one dimension [8,9].

Despite all the improvements in pain management and treatment, postoperative pain is still an important clinical condition. Pain is tried to be minimized by a teamwork done by a team composed of physicians, nurses and other relevant health personnel. Pain palliation is one of the most important problems that can disturb patient comfort especially after surgery and sometimes cause prolongation of hospitalization. The aim of an effective pain management is not only to reduce physical discomfort, but also to provide early recovery and return to work, staying in the clinic shorter and minimizing health care costs. For many patients, pain palliation is not successful enough. One of the reasons for this is the fact that although pain is an old concept, pain science is a newly emerging science discipline and the other important reason is that physicians and nurses have inadequate knowledge about pain diagnosis and management [13,14]. Correct postoperative pain assessment is an important point for effective pain management [13,15]. Pain is a dynamic process and it is the responsibility of the nurse to understand it [15]. Nurses are ethically responsible for pain management and pain relief. Since the nurses spend the longest time with the painful patient, they have the opportunity to observe and evaluate the patient well. Therefore, the role of the nurse in approaching the painful patient is important and privileged [16,17]. Effective assessment of pain is a prerequisite for pain control and is one of the main components of nursing care.

There is a clinical study in the literature regarding the comparison of pain scores given by the relatives of the patient and nurses [18]. However, there are very few studies comparing the pain scores obtained by the nurse in charge and physician in charge. Our clinical observations tend in a direction that the patients express different scores to the nurse in charge and surgeon in charge, when they are questioned regarding their post-operative pain. Our aim in this study is to assess whether the patients express different pain scores to nurses and surgeons, when early postoperative pain assessment is performed in patients that underwent laparoscopic cholecystectomy, and whether this is significant or not.

Materials and methods

This was a case-control study and approval was granted by the Research Ethical Committee. 120 patients above the age of 18 who give written and oral approval, that are planned elective laparoscopic cholecystectomy, ASA I or II, that are operated between 2016 June and 2017 June.

In pre-operative meeting to the patients regarding VAS (Visual Analogue Scale) detailed information has been given. On the scale; it has been detailed explained to the patients and expected to be evaluated that 0 indicates the case without any pain, and 10 represents the highest rate of pain. Post-operative pain; is questioned by the responsible nurse and after 15 minutes by the responsible surgeon. Interrogators; were not informed regarding intra operative local anesthetic applications and insufflation pressure. To the nurses regarding VAS pain score interrogation and analgesic requirement application training has been given. In patients with the VAS pain score equals to or more than 4; Dexketoprofen (Arveles® 50 mg) has been applied. In case of requirement of analgesic intravenous dexketoprofen has been applied. Before the surgery following type of patients have been excluded from the study such as the ones to use psychotropic and opioid medication, ones to define psychiatric diseases stories, pregnants, the ones with alcohol addiction, the ones who define chronic pain not related to gall bladder stone, ones to use steroids, the ones who are sensitive to local anaesthetics, the ones to go under operations because of acute cholecystisis, because of the suspect of bleeding or surgery related suspects put drain. To none of the patients preemtive analgesic application has been done.

The postoperative pain scores of the patients were evaluated with VAS (Visual Analogue Scale) at 1st, 6th and 24th

hours. The pain questioning was first performed by the nurse in charge and also 15 minutes later by the physician in charge. No analgesic administration was performed to the patients between the two questioners. The difference between the pain scores was assessed statistically whether it had changed with the identity of the questioners.

Statistical Analysis

Kolmogorov-Smirnov and Shapiro Wilks test were used to determine whether VAS 1, VAS 6 and VAS 24 measurements obtained from the patients are appropriate to the normal distribution and it was observed that the data showed conformity to normal distribution. The t-test is used in independent groups to determine whether VAS 1, VAS 6 and VAS 24 measurements differed significantly between the nurses and the physicians; while the VAS values measured by the nurses and the physicians separately at different times were examined in dependent with the t-test. Analyzes were made at 95% confidence level in SPSS 20.0 software.

Results

The comparison of the VAS scores told by the patients to the physicians and the nurses is given in Table 1. According to this, the VAS 1, VAS 6 and VAS 24 score averages are significantly different according to the physicians and the nurses ($p<0.05$), and the VAS scores given by the nurses for each VAS score are significantly higher than the VAS score averages given by the physicians ($p>0.05$).

Table 1: VAS score comparison for surgeon vs. nurses

		n	Mean	Standard deviation	p
VAS 1	Nurse	120	2.39	1.42	<0.001*
	Surgeon	120	1.19	0.79	
VAS 6	Nurse	120	2.15	1.73	<0.001*
	Surgeon	120	1.35	1.25	
VAS 24	Nurse	120	1.23	0.96	<0.001*
	Surgeon	120	0.68	0.75	

* p<0,05

The comparison of the VAS scores that the patients told the nurses is given in Table 2. According to this, although there is no significant difference between VAS 1-VAS 6 score averages ($p>0.05$), there is a significant difference between VAS 1-VAS 24 and VAS 6 - VAS 24 score averages ($p<0.05$). VAS 1 score is significantly higher than VAS 24 score, and VAS 6 score is significantly higher than VAS 24 score.

Table 2: VAS scores for nurses

		n	Mean	Standard deviation	p
1	VAS 1	120	2.39	1.42	0.245
	VAS 6	120	2.15	1.73	
2	VAS 1	120	2.39	1.42	<0.001*
	VAS 24	120	1.23	0.96	
3	VAS 6	120	2.15	1.73	<0.001*
	VAS 24	120	1.23	0.96	

* p<0.05

The comparison of the VAS scores that the patients told the surgeons is given in Table 3. According to this, although there is no significant difference between VAS 1-VAS 6 score averages ($p>0.05$), there is a significant difference between VAS 1-VAS 24 and VAS 6 -VAS 24 score averages ($p<0.05$). VAS 1 score is significantly higher than VAS 24 score, and VAS 6 score is significantly higher than VAS 24 score.

Table 3: VAS scores for surgeons

		n	Mean	Standard deviation	p
1	VAS 1	120	1.19	0.79	0.265
	VAS 6	120	1.35	1.25	
2	VAS 1	120	1.19	0.79	<0.001*
	VAS 24	120	0.68	0.75	
3	VAS 6	120	1.35	1.25	<0.001*
	VAS 24	120	0.68	0.75	

* p<0.05

Discussion

The trauma occurred as a result of the surgical intervention causes direct damage to the neural structures and the stimulation of nociceptors. Pain arises as a result of this stimulation. Not only psychological, but also a number of pathophysiological changes occur as a result of pain [19].

The pain experience is dynamic and it is the responsibility of the nurse to understand it [15]. Nurses are the health care professionals, who spent most of time with the patients and their role in pain management is essential [17]. Sloman et al. found in their studies that nurses working in surgical departments underestimate the pain sensation of the patient and pain [13]. Most of the studies comparing the pain assessments of the patients by the nurses report that the nurses predict the pain scores lower [17,20-25].

Although the assessment of the patient's pain and the determination of the appropriate conditions for pain palliation are mainly the responsibility of the nurse performing follow-up during the period of hospitalization, physician in charge also questions pain, which is one of the most important complaints of the patient after surgery. However, follows the course of the pain scores during this time mostly from the nurse visits. The surgeon may detect different pain scores from the scores he or she receives from the nurse in the face-to-face interviews with the operated patient.

Although there are publications regarding the use of scale in the pain assessment eliminate the difference between the nurse and the physician by converting the severity and characteristic of the pain to an objective status [7], different scores appeared in the pain assessment using VAS between the nurse and the surgeon in our study. The pain scores recorded by the nurses are often low and this is associated with poor identification or ignorance of the pain [13]. However; pain scores given by nurses in our study in all of the 1st, 6th and 24th hours were significantly higher when compared with the surgeons. This finding was in contrary to the literature on nurse observation. Özer et al. [26] thought that the nurses had moderate knowledge and behavioral scoring related to pain and do not have sufficient knowledge about the pain physiology and pharmacological management of pain. In a study comparing the nurse and physician in terms of VAS score made by Martin et al. [27]; VAS scores expressed to the surgeons by the patients were found to be significantly higher compared to the nurses. We have obtained a finding on the contrary, meaning that the scores of the surgeons are significantly lower. We think that the fact that the scores of the physicians are much lower, when the surgeon and the nurse is compared, is based on making a more accurate assessment because they have much more knowledge about pain physiology and the patients express their pain scores to their surgeons more realistic because they have a higher level of

confidence. Therefore, we think that who performs the questioning is important in the treatment of pain that will be started by questioning VAS pain score.

Main limitation of this study was; the pain can vary between the two assessments in 15 minutes and the evaluation was not made by the doctor first and then by the nurse.

In conclusion, we think that the identity of the questioner is also influential on the pain score expressed by the patient in the assessment of the postoperative pain made by using the VAS pain score, who questions the pain in the pain palliation made by using this scale should also be evaluated.

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