

EXAMINING THE IMPACT OF TELLINGTON MASSAGE ON PAIN SEVERITY OF PATIENTS WITH ANGINA PECTORISSadegh Mahdavi Pour¹, and Ali Akbar Vaezi*²

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ABSTRACT

Introduction: Heart pain may cause change of vital signs, increasing of the heart oxygen need and increasing of mortality of patients with heart diseases. There are many on-medicinal methods for pain control, such as massage, and massage if continues by stimulating thick fibers and local provocation of endorphins prohibits pain transfer, so this study was conducted with the aim of determining the impact of frontal chest massage by the nurse on pain severity of men hospitalized patients. **Materials and methods:** this study was semi-experimental of clinical trial kinds, which among men patients with instable angina pectoris above 40 years old who referred to Yasouj training hospital of Imam Sajad in 2016, 64 patients were selected with convenient sampling method and with random designation, were assigned to two groups of test and control (each group 32 patients). For measuring pain severity in two groups VAS visual criterion was used, while the control group received routine procedures for pain control and in test group, besides that, simultaneously chest massage of frontal chest was performed with Tellington method and then chest pain severity was measured and recorded. After collecting data, paired T-test and bilateral variance analysis were used and data was analyzed using SPSS 21 software. **Findings:** In test group, the average score of pain severity after massage therapy was 3 and in control group this score was 6 and the least score of pain severity in test and control group was 2 and 6 respectively and the highest score of pain severity in test group was 3 and in control group 7. The difference of pain severity average score was analyzed using SPSS 21 software based on coupled t-test and bilateral variance analysis and the statistical difference was significant ($P < 0.05$). **Conclusion:** chest massage with Tellington method in men patients with heart disease in CCU causes chest pain reduction in patients with unstable angina pectoris. Therefore, using this simple and cheap method which is along with the patient attention is recommended.

KEYWORDS: Tellington massage, pain severity, angina pectoris.

INTRODUCTION

All over the world, heart ischemic diseases cause death and inability more than any other disease and impose great economic costs on the society. The clinical signs of these diseases range from an unsigned ischemia to chronic stable angina, instable angina, myocardial acute infarction, ischemic cardiomyopathy and heart sudden death. In United States, among 12 million persons with IHD, about 6 million people suffer angina pectoris. In Iran, heart diseases are the most prevalent reason of mortality and designate about 46% of mortality, so that about 3.6 million people are just hospitalized in hospitals affiliated to Ministry of Health, Treatment and Medical Training due to these diseases. Angina pectoris is predicated to heart frontal pain due to myocardium ischemia which should have at least one chest pain attack with ischemic appropriate changes in

electrocardiogram. The most important clinical sign of angina pectoris is chest pain so that it is felt in the region under sternum or sometimes in epigastria region and is prevalently propagated to neck, left shoulder and left arm. Removing chest pain due to angina pectoris is vital since this pain may cause activation of sympathetic system and as a result increasing of systemic arteries resistance, increasing of heart beat speed and myocardium contraction power. Increasing of these parameters leads to rising of myocardium oxygen consumption and consequently extension of myocardium ischemia and even death.

Besides pain, instable angina pectoris has some signs like weakness or insentience in arms, wrists and hands and also asthma, paleness, perspire, distraction or feeling of head lightness, nausea and vomiting. Patients with

instable angina should be rapidly treated. Medicinal treatment of angina pectoris includes using nitrates, beta blockers, calcium channel blockers, medicines of placket anti-aggregation, anticoagulants and glycoprotein factors. The primary aim of medicinal treatment of angina pectoris is to create balance between oxygen supply and demand of heart muscle through change in various elements of the process as increasing of oxygen supply to the muscle or reduction of the heart muscle need to oxygen that these aims will be achieved to a great extent through using the above drugs and performing appropriate nursing interventions.

Besides treatment actions, nursing interventions in the patient with angina pectoris has a special significance. Since the nurse in encountering with the patient with chest pain should evaluate intensity, quality and duration of pain, she is required to have sufficient knowledge about this phenomenon.

Besides experimental studies performed by nurses, valve control theory also emphasizes the necessity of performing some nursing interventions for reducing pain mental impacts on heart ischemia patients.

Massage and all techniques used with hand for relieving pain such as touching, could be useful for patients and change their view towards these techniques. Massage is referred to as utilizing touch and pressure for soft tissues usually muscles, tendons and or ligaments without moving them or changing their position. Each massage method is formed in the mind as a special goal. Examining texts indicate that 80 to 90% of patients tend to use non-medicinal treatment methods for treating headache and relieving spinal cord. Whereas, many impacts of massage are spontaneous, there is this possibility that it raises the pain threshold.

Massage impacts are not merely psychological but naturally it also has mechanical, physiologic and reflex impacts. With massage, the skin external receptors and deep seated receptors of its beneath tissues are simulated. Massage mechanically helps coronary blood flow, accelerates lymph flow, reduce various special types of edema and also creates a soft tension on the tissue and recover hypoderm tissue scar. Deep massage causes recovery of coronary flow in many people. As a result, reduction of venous pressure causes increasing of arterial blood circulation. When the capillary pressure is reduced, the rate of secretion to extracellular space reduces, then the pressure on lymphatic is reduced and fibrosis possibility is alleviated.

Performing Tellington massage in the first seconds is called awakening or energy start and when massage begins, relaxing the patients' muscles is performed gently. Other important elements of massage are emphasizing the patients' consciousness and patients' deep breathing during massage that of course these two cases are not mandatory.

In this study, a type of massage with Tellington method has been used called shelly contact, in this type, massage operation is done using fingers and palm rotation clockwise. Pressure rate in this method was between numbers 1-2. Shelly method is a very gentle method that is often used in very anxious people and those who are under the pressure. As the shale sticks the palm in ocean bottom, the palm should completely stick the patient's body during massage. Shelly method has many usages for people who are sensitive to contact with just one or two fingers. Especially, children like shelly method very much, so that this method is used for making them relaxed or for helping them to fall asleep. In adults, this method is also used for getting them to fall asleep. Usually, after 9 to 10 times of rotation gradual feeling of relaxation is obtained. Tellington massage shelly model has many utilizations such as relaxing the patient, relieving anxiety, reducing mental pressure, reducing pain, helping to deep breathing, sleep recovery, improving muscles laxity, helping children sleep. Edema or tissue damage are among cases in which Tellington massage could be used and is useful. Tellington massage could have many applications in special cases like painful experiences, anxious people and other signs among people caring patients. Also there is this assumption that Tellington massage could be used in cases like caring patient at home, caring patients under mechanical ventilation, trauma, tooth pain, emotional recovery, child delivery and dying people. Despite that in Tellington method, an incorporation of various elements such as rotating contact, long strokes and gentle tensional pressures should be used together, learning this method is relatively easy.

So this study has been conducted with the aim of determining chest frontal massage by the nurse on pain severity of men patients with angina pectoris.

RESEARCH METHOD

This study was semi-experimental of clinical trial which was conducted in 2016. In this study, among all men patients with instable angina pectoris referring to Yasouj training hospital of Imam Sajad, from above 40 years old people, 64 patients were selected with convenient sampling method and were designated to two groups of test and control with random designation (drawing). For achieving sufficient sample content, a preliminary study was performed on 20 patients with instable angina pectoris that for 10 patients (test group) massage was performed and for 10 other patients routine treatments was done (control). Then, mean and standard deviation of pain severity reduction in both groups was calculated that in test group, mean and standard deviation of pain severity reduction was +1.94 and -2.15 and in control group +1.4 and -1.03. in this study, inclusion criteria includes: age above 40 years old, having complete consciousness, the ability to communicate with others, lack of harm or trauma history (due to surgery or other factors) in chest region and non-receiving arterial nitroglycerin during study. Patients with dangerous

arrhythmia, neuropathy (diabetes.), addiction to drugs and patients who had received sedative drugs in the last one hour was excluded from the study. In control group, after expressing chest pain by the patient, at first pain severity was measured using VAS criterion and then nitroglycerin was infused for 5 mic/min and after 8 minutes, again chest pain severity was measured and recorded. In test group, like control group after expressing chest pain by the patient, at first chest pain was measured, then nitroglycerin was infused for 5 mic/min and simultaneously chest frontal massage was performed with Tellington method and after 8 minutes again chest pain severity was measured and recorded. For making homogenous in respect of drug orders, one of requirements of samples acceptance was similarity of received drugs effective on pain (ataraxic and anti-anxiety) in respect of hour and dosage in both test and control group. For both groups of test and control, before accession of pain chest, aim and method of performing the study and way of determining pain rate using VAS criterion was explained by the researcher or cooperative therapist. Determining chest pain rate was performed in each group by the researcher so that prejudice due to the patient judgment is minimized. During massage in two groups, the patient was made to semi-sitting state with 30-degree angle and both were given the same rate (2 liters) of oxygen through nose and it was explained for the patients in both groups that during massage or routine

treatment procedure avoids any question or speaking about a specific issue and at the end of work the patients questions are answered. For performing Tellington massage with shelling method, the researcher or his colleague started from left frontal section of chest and from beginning point in the heart top region rotationally and clockwise one round and one fourth so that using hand fingers that palm is not completely in touch with the body surface, massage was done for 8 minutes. The rate of pressure entered to chest was calculated by the researcher or therapist using thumb on chin and point finger on his eye so that he feel a little pressure and causes skin drag and to have minimum friction. Data collecting tool in this study was questionnaire of demographic information and checklist of recording information including systolic and diastolic blood pressure and the number of pulse and breath and VAS instrument for measuring pain severity. Data was analyzed using coupled T-test and bilateral variance analysis by SPSS 21 software. For observing ethical considerations after the plan approval in complementary studies council, the certificate of the university ethical committee was obtained and for implementing the plan required coordination was done with the hospital managers and by declaring voluntary presence of patients in the research, letter of consent was obtained from the patient and massage was done by trained people of the same gender regarding the patient privacy.

FINDINGS

Table 1: average of vital sings of studied units before and after massage therapy in test and control group.

p.v	Control Group			Test Group			Parameter
	Pv	Mean		Pv	Mean		
		After	Before		After	Before	
0.339	0.454	127.78	122.5	0.049	123.65	134.47	Systolic blood pressure
0.435	0.267	87.75	85	0.349	86.09	89.93	Diastolic blood pressure
0.001	0.405	86.94	82.50	0.945	89.65	96.22	Pulse
0.338	0.017	20.50	18.12	0.004	17.97	20.06	Breath

The above table shows that in the test group, the average of systolic blood pressure before massage therapy was 134 and in the control group, this rate was 122 and average of systolic blood pressure after massage in test group is 123 and in the control group is 127. Also, table 2 indicates that systolic blood pressure in test group has significantly reduced comparing control group after intervention ($p < 0.049$), while there was no significant difference between systolic blood pressure in both groups before intervention ($p > 0.454$).

The above table indicates that in test group, the average of diastolic blood pressure before massage therapy was 89 and in the control group, this rate was 85 and the average of diastolic blood pressure after massage in test group was 86 and in the control group was 87. Table 2 shows that diastolic blood pressure in test group has significantly reduced comparing control group after intervention ($p < 0.00$), while there is no significant

difference between diastolic blood pressure in both groups before intervention ($p > 0.267$).

The above table indicates that in test group, the average of pulse before massage therapy is 96 and in the control group this rate has been 82 and the average of pulse after massage on test group is 89 and in control group 86. This table indicates that pulse in test group has significantly reduced comparing control group after intervention ($p < 0.00$), while pulse in both groups before intervention doesn't have any significant difference ($p > 0.405$).

Table 2 shows that in test group, the average of breath number before massage therapy was 20 and in control group 18 and the average of breath number after massage in test group is 17 and in control group, it is 20. This table indicates that the number of breaths in test group has significantly reduced comparing control group after intervention ($p < 0.00$), while there was no significant difference between the number of breaths in both groups before intervention ($p > 0.17$).

Table 2: the average of pain severity of studied units before and after massage therapy in test and control groups.

Pv	Test group		Control group		Time	Variable
	Standard deviation	Mean	Standard deviation	Mean		
0.339	1.24	3.37	2	6.75	Before	Pain severity
0.001	1.70	6.71	2.172	4.84	After	
-	-	0.000	-	0.001	-	PV

In the test group, the average of pain severity score after massage therapy was 6.71 and in the control group this score was 4.84 and the average of pain severity after massage in the test group was 3.37 and in the control group, it was 6.75.

The above table indicates that pain severity in the test group has significantly reduced comparing control group after intervention ($p < 0.001$), while there was no significant difference in pain severity in both groups before intervention ($p > 0.339$).

DISCUSSION

In the present study, the impact of chest frontal massage with Tellington method on pain severity of patients with instable angina pectoris in CCU of Imam Sajad hospital of Yasouj City has been examined.

Comparing pain severity in the control group before and after study showed that there is a significant difference in the control group before and after intervention, so that the average of pain severity in the control group after intervention has significantly increased comparing before intervention. As table 2 and 3 shows, pain severity from 4 degrees before intervention has reached 6 degrees at the end of study. It seems that these differences may be due to repeated hospitalizations of most patients participating in the study who have been hospitalized more than two times in CCU.

The next possible reason is repeated use of nitroglycerin during treatment period. Resistance creation against pain due to permanent use of nitrate drugs could create this assumption in heart patients.

Alkyam (1987) in a study under the title of early accession of tolerance to effects of nitroglycerin in patients with cardiovascular diseases and heart failure has studied tolerance creation to this drug and reduction of treatment impacts in those who use nitroglycerin which leads to tolerance to nitroglycerin and reduction of its treatment impacts. The study of Stewart and Houlitz (1987) on the long-term impact of nitroglycerin and its impact on widening great coronary artery which was performed on a dog in consciousness showed that continuous use of nitroglycerin 4 hours daily for 5 days may reduce anti-angina impacts of nitroglycerin like widening coronary arteries and potentially increase factors increasing oxygen consumption of myocardium like tachycardia. As a result, the mechanism of widening coronary arteries by nitroglycerin is performed through

stimulating water soluble guanylate cyclase and increasing of annular GMP, that sue to continuous and long use of nitroglycerin, annular GMP rate in smooth muscles is reduced. So, vanishing of the vessels widening impact by nitroglycerin is called tolerance status to nitroglycerin impact that could be the justifying factor of this status accession in changes of chest pain severity in patients who use this drug continuously.

Klemenska (2009) in his review study has introduced the main factor for limitation of continuous use of nitroglycerin as creating tolerance to this drug impacts as reducing the impact of vessels widening and necessity of using higher dosages due to high use of nitroglycerin.

On this basis, maybe using joint treatment methods like massage with Tellington method which doesn't have these complications should be considered by groups treating heart patients.

Findings of the present study in the test group showed that pain severity after massage with Tellington method comparing before massage has significantly reduced. Maybe chest pain reduction is due to massage impact through pain control with mechanism of valve control theory or the impact of this type of massage on anxiety reduction due to researcher physical presence and also hope of recovery and relaxation sue to this hope that has had a positive impact on pain severity reduction and increasing of pain tolerance.

Wandler (2003) in a study measured pain rate due to intravenous cannula before and after massage with Tellington method. Findings showed that there was no significant difference between pain severity before and after massage, that is, pain severity hadn't reduced. It seems that the discrepancy of results of this study and the study performed by Wandler is due to method of collecting data relating to pain severity since in this study, participants before massage really suffer from pain and after intervention still different degrees of pain existed but in the Wandler, before intervention, in both groups of test and control, pain severity was measured based on people mental prediction from rate or severity of pain, that is, people were asked if cannula is injected to your hand, do you think how much your pain will be that using VAT criterion, participants imaginary pain severity was measured and on the other hand after injecting cannula in both test and control groups, measured pain severity was real that this could cause discrepancy of results in two studies. In fact, the

difference of intrinsic and real pain in two studies leads to different findings in two studies.

Though in the present study, the average of chest pain severity before intervention in the test and control group has shown a significant difference, also there was a significant difference after intervention the average of pain severity between test and control group, that is massage with Tellington method has had a positive impact on chest pain reduction in patients with instable angina pectoris and their pain has reduced after 8 minutes of massage. In fact, massage therapy intervention has significantly reduced chest pain in heart patients.

Aghaei (1987), in a study showed that massage therapy in patients with angina pectoris comparing under tongue nitroglycerin more causes pain reduction. That is, pain severity of patients who were in test group and received 5 minutes massage considerably reduced comparing pain severity of patients in the control group who just received under tongue nitroglycerin. It means that massage therapy has been effective for reducing pain in patients with angina pectoris. So, the results of this study are consistent with the results of the present study and emphasize the effectiveness of this massage therapy method in pain reduction. In a study which was conducted by Piotroski et al (2003), the back massage impact for 10 minutes from first to seventh day after surgery twice a day was examined on pain rate and consuming opiate sedative drugs that the results showed that patients pain in all groups reduced from the first to seventh day, but pain reduction speed in massage group was faster. Also pain severity in the massage group was more rapidly reduced comparing control group, but this difference between two groups was not significant. Anderson (2007) in examining intervention of mitigating factors in patients after heart surgery showed that patients' pain severity under treatment with massage has reduced comparing patients without massage. This finding is consistent with findings of the present study.

CONCLUSION

The results obtained from this study showed that chest massage with Tellington method in men with heart disease in CCU causes reduction of chest pain severity and consequently reduction of systolic and diastolic blood pressure and the number of pulse and also breathing in patients with instable angina pectoris and this method could be used as a simple non-medicinal method in CCU for pain reduction and adjusting some vital signs.

The findings of this study could be used in domains of clinical nursing and nursing training. Regarding the findings of this study, nurses working in CCU will be able to utilize a simple and cheap method like massage with Tellington method in patients' chest at the time of pain accession and reduce pain severity in patients. Also, hospital managers could find plans for training and using

massage with Tellington method in CCUs and even other wards for reducing patients' pain. Moreover, the information obtained from this study could be effective in CCU nursing training, especially in students' practical training on correct evaluation of pain in heart patients and using non-medicinal approaches in reducing pain.

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