

Investigating the Effect of Pressure on the Hugo Point on the Severity of a Headache after Head Injury

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Background: A headache is the most common post-traumatic complaint in patients. Nurses can help to relieve the pain and to improve the quality of the care through non-pharmacological methods. The aim of this study was to determine the effect of pressure on Hugo point on the severity of a headache after head injury.

Methods: In this clinical trial, 60 patients were randomly divided into two intervention and control groups after accessible sampling. At first, the severity of a headache was measured by Visual Analogue Scale. In experimental group, the pressure was applied to Hugo point for 2 minutes followed by rest for 2 minutes; this procedure was repeated for 7 times. During this period, the control group received only routine care. The patients' pain scores were measured again after the intervention. Data analysis was performed using SPSS v.20 software.

Results: There was a significant difference between the scores of pain in the experimental group before and after the intervention ($P < 0.05$), however, this difference was not significant in the control group.

Conclusion: Considering the ease of performing and the safety of this method, it is suggested to be used as an effective method to reduce the headache in patients.

Keywords: Hugo point, acupressure, headache

Introduction

A headache is the most common post-traumatic complaint in patients and is the most common complaints in medicine (1). The prevalence of headache after trauma was different in different studies, depending on the time and duration of follow up. 30%-90% of patients experience a headache following the head injuries (2).

Pain is a major stressor for patients in the intensive care unit, causing changes in sleep patterns, fatigue, and restlessness, loss of awareness of time and space, and increased intracranial pressure (3).

Different methods, such as medication and psychotherapy, have been used along with the pain management for various complications to reduce the headaches (4). Medicinal treatments include complications such as increasing admission time, respiratory failure, circulatory interruption, urinary retention, defects in intestinal peristalsis and excretion, and abnormal sleep disorders (5). On the other hand, the cost of medication is not proportional to its effectiveness and it is not cost-effective, therefore, the need for a safe and effective method with lower costs and side effects is felt. Non-pharmacological pain relief measures that are widespread in some societies today are safe, affordable, low-cost, low-tolerant, easy to use and affordable. Acupressure is one of the non-pharmacological treatments. In this method, the pressure with the fingers to certain points on the body surface is used to stimulate the body's intrinsic and natural ability to regulate and to treat (6). The use of this method, which is safe and with no side effects, does not require special equipment and costs. Acupressure is, in fact, a branch of acupuncture; the traditional Chinese medicine has been used for many years to cure many illnesses, such as pain, neurological diseases, allergic diseases, and musculoskeletal disorders (7).

In the body, there are points in which the vital energy are more active or the pole and the energy flow are changed, by putting the pressure on these points, the vital energy of the body is improved, leading to a reduction in muscular tension or relief of pain. Hugo point is the most important pain-relieving

point in the body. By stimulating this point, the vital energy flow is stimulated, especially in the upper part of the body, and the damaging factors are restricted. The Hugo point is where the energy flow is closer to the skin surface, and this point is a source point and is used to relieve the pain and eye diseases. Point 4 of the large intestine meridian is used in all painful conditions. Hugo point is easily stimulated by pressure and these pressure points that are used to relieve pain are located far from the pain area. One of the methods used to determine the location of this point is to close the thumb to the index finger. In this case, the created muscle propensity will be the location of this point (8).

Salehian et al. (2009) conducted a study on the effect of pressure on Hugo point on the severity of pain and duration of delivery in primiparous women in Iranshahr. The results showed that there was a significant difference between the mean pain intensity of the first stage after the intervention in both intervention and control groups. However, with the progression of baby delivery, the severity of pain is increased, which was significantly lower in intervention group. In this group, the mean pain severity before and after the intervention was significant at 4, 6 and 8 cm cervical opening. There was a significant difference between the mean duration of the first and second stages of the delivery in the two intervention and control groups (9).

Azgoli et al. (2009) conducted a study regarding the effect of acupressure on the Hugo point of the right hand on the intensity of active phase of the labor pain in nulliparous women who were at Shaheed Akbar Abadi Hospital in Tehran. In this study, Patients' pain was gathered using a numerical grading scale. The overall result is that the pressure on the Hugo point is effective in reducing labor pain and continuing the acupressure can increase the labor pain relief (10).

Kurdi et al. (2010) studied the effect of pressure on the LI-4 point on the severity of pain in the first stage of labor in nulliparous women in Mashhad. In this clinical trial, three one side blind groups of 82 nulliparous

mothers referring to Maternity Hospital of Umm al-Binin Hospital in Mashhad, with a gestational age of 38-42 weeks, were randomly assigned to three groups: acupressure, touching (control 1) and routine care group (control 2). In the acupressure group, the pressure in a 40-minute period (20 minutes of pressure on the Hugo point of one hand and 20 minutes at the Hugo point of the other hand) was applied at the beginning of each contraction. In the touching group, the patients were treated similarly to the acupressure group, with the difference that the Hugo point was taken instead of the single-touch pressure. No intervention was performed in the usual care group; the severity of pain was compared before the intervention, immediately after the intervention, half an hour later, and then at intervals of every hour using visual analog pain measurement in three groups. The results showed that the mean score of labor pain severity immediately after intervention in the acupressure group (28.59 ± 13.75) was lower than that of the touch group (18.67 ± 33.5) and the usual care group (41.82 ± 20.5) ($p = 0.026$); the conclusion indicating that the pressure on the Hugo point reduces the pain intensity of the first stage of labor and can be used as a simple, low-cost and non-invasive method in labor to reduce the pain (11).

Khavandi Zadeh Aghdam et al. (2012) in a study to determine the effect of pressure on Hugo point on the process and outcome of labor in nulliparous women. A semi-experimental study was conducted on 100 nulliparous women. In the acupressure group, the pressure was applied to the Hugo point between the thumb and index fingers and in the control group outside the Hugo point. This intervention was performed for 20 minutes during contractions and in the opening of the cervix at 4.8 and 10 cm in length. The severity of pain was questioned using the Burford pain test. The type of delivery, the Apgar scores of the first and the fifth minutes, the maternal satisfaction from the labor experience and finally the start of lactation were determined and recorded. The results showed that the acupressure (pressure on Hugo point) reduced the length of labor, the need for oxytocin during labor, the severity of

labor pain and increased the maternal satisfaction from the labor experience and early onset of breastfeeding. Therefore, it can be used in normal labor without any complication (12).

Despite the increasing use of acupressure in the treatment of pain in patients, the research performed in this area is limited and, unfortunately, no studies have been conducted to reduce the headache of patients with head injuries in Iran. The researcher decided to study the therapeutic effects of pressure on Hugo point on the severity of a headache in patients with head trauma.

methods

This is an experimental study of a clinical trial that was carried out during the period from April to July 2014 in hospitalized patients in ICU and neurosurgery units at the Shahid Madani Hospital of Karaj, affiliated to Alborz University of Medical Sciences. According to the studies (10), the sample size was obtained according to the formula of at least 23 cases in each group, with a prediction of about 20% reduction and rounding the result, the sample size was considered 30 in each group. The patients' inclusion criteria include head trauma at the time of admission that cause a headache that had not previously been in the patient, the age of over 18, absence of any types history headache, no drug addiction experience, lack of pain in the other organs and patient's complete consciousness. The exclusion criteria include receiving tranquilizers, severe restlessness due to the pain, and the presence of diseases that cause peripheral neuropathy. The admitted patients with the inclusion criteria of the study were considered as the sample of the research after obtaining informed consent to participate in the study. Prior to taking the written consent, all participants were guaranteed concerning the confidentiality of information, the possibility of leaving the study at any time without any consequences. Following obtaining the approval from the Ethics Committee of Qazvin University of Medical Sciences, the study was issued with QUMS.REC.1394.18 and was registered at the Clinical Practice Center with IRCT2015020520963N1 code. Since there were two groups of experimental and control,

the allocation of samples was performed by Table of random numbers. Then, a questionnaire was filled out including age, sex, the level of education, marital status, the number of hospital days, specific disease history, history of drug use, history of smoking and duration of pain by a questioner in both groups. Then, the severity of a headache was measured by the visual analog scale, which is a self-reported criterion with the score of 101 and is graded between 0 and 100. The reliability and validity of this tool have been approved by Shaban et al. in Iran (13). Outside of Iran, Bijour et al., in a study to evaluate the reliability of visual acuity tools of patients referring to the Emergency unit, the correlation coefficient of 0.97 with a confidence interval of 0.96 to 0.98, were obtained which were sufficiently reliable to evaluate the pain (14). Then the Hugo point of the male patients in their left hands and the Hugo point in female patients in their right hands were determined. After determining the

location of the Hugo point for two minutes, the researcher pressed on the Hugo point and the patient rest for two minutes, and the procedure was repeated for 7 times. For each pressure step, the target point was pressed for 30 seconds and the pressure was gradually increased to a degree of severity so that the patient experiences a feeling of numbness, heaviness, and strain around the area, then the intervening was then held in the position for one minute, and then the pressure was gradually reduced so that within 30 seconds the point would be free. The researcher has trained this specialized training from an acupuncturist. There was no intervention in the control group and the patients received routine care. After completing the work, the patients' pain score was re-evaluated after 7 times. The severity of a headache was re-measured by the visual analog scale. The data analysis was performed using descriptive and inferential statistics in SPSS.20 software.

Table 1: Distribution of Absolute and Relative Frequency of Demographic Characteristics of the Units in the Test and Control Group

Variable	Experimental Group Number (percentage)	Control Group Number (percentage)	Chi-square test results P
Gender			
Male	25 (83.3)	23 (76.7)	P = 0.74
Female	5 (16.7)	7 (23.3)	
Age			
20- 29 years	9 (30)	11 (36.7)	P = 0.57
30- 39 years	7 (23.3)	9 (30)	
More than 40 years	14 (46.7)	10 (33.3)	
Final diagnosis			
Injury to the skull	13 (43.3)	11 (36.7)	P = 0.23
Epidural hematoma	6 (20)	13 (43.3)	
Subdural hematoma	7 (23.3)	4 (13.3)	
Brain hematoma	4 (13.3)	2 (6.7)	
Cause of damage			
Falling from the height	11 (36.7)	8 (23.3)	P = 0.70
Mayhem	6 (20)	7 (26.7)	
Crash	13 (43.3)	15 (50)	

Results:

In the intervention group, skull injury was 13 (43.3%) and in the control group, the epidural hematoma 13 (43.3%) were the most common ultimate diagnosis. The accident is the most common cause of injury in both groups. There were no significant statistical differences in the base characteristics between the two groups (demographic data, diagnosis, the cause of injury, history of blood pressure, smoking, and duration of hospitalization) (Table 1).

According to the paired t-test, there was a significant difference in the severity of a headache after head injury before and after the intervention in the experimental group ($p = 0.001$). Moreover, based on the paired t-test, there was no significant difference in the severity of a headache after head injury before and after intervention in the control group ($P = 0.16$) (Table 2).

Table 2. Comparing the severity of a post-traumatic headache in patients before and after intervention in experimental and control groups.

Pain Severity	Experimental		Control	
	Before the intervention	After the intervention	Beginning of the study	End of the study
	Mean \pm Sd	Mean \pm Sd	Mean \pm Sd	Mean \pm Sd
	19.53 \pm 43.33	20.96 \pm 45	14.46 \pm 19	24.73 \pm 47.67
Paired t test	p=0.001 T= 8.93		P= 0.16 T= 1.40	

Discussion

Our findings show that the mean severity of headache before the intervention was 47.67 indicating that the patients with head injuries experience a high level of pain, in spite of receiving the necessary care. This level of pain decreased to 19 after intervention, indicating a significant difference before and after the intervention ($p < 0.05$). This significant reduction can be attributed to the effect of acupressure. This issue is mentioned in various studies.

To determine and to compare the severity of the post-traumatic headache in patients, before and after intervention in the control group, the results of the pre-mentioned test showed that the pain score before the intervention in the control group was 45 that reduced to 43.33 with no intervention. The paired t-test does not show significant difference before and after the intervention.

In Bastani et al study, aimed to determine the effect of acupressure on the Hugo point on the

pain caused by the removal of a chest tube in cardiac patients, the reduced pain was observed using acupressure (15). Although in this study, the type of pain and the causative agent is different than those of our study, it can generally be argued that the correct choice of acupressure location plays a decisive role in relieving the pain types. However, the findings of the study conducted by Melzak (1980) are inconsistent with this study. The results of the Melzak's study showed that the pain score before beginning the treatment in patients with dental pain was the same for all groups in the study, and in subjects with massage at the Hugo point along with empathy and massage of the Hugo point without empathy, the pain was the same as the previous day. However, the ice massage on the Hugo point reduces the tooth pain and 60% to 90% of the patients reported that their pain decreased by more than 50 % receiving ice massage (17).

Conclusion

Based on the results of this study, the Hugo point massage has been effective in reducing post-traumatic headache and can be used as a useful and painless way to reduce the pain in these patients.

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This present study aimed to evaluate the impacts of pressure on Hugo point on the

severity of a headache after head injury in patients admitted to ICU and Neurosurgery units of Qazvin University of Medical Sciences. Hereby, the authorities of Nursing and Midwifery Faculty of Qazvin University of Medical Sciences, as well as Shahid Madani hospital personnel especially ICU staff, are thanked greatly.

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