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Compare the effect of dry-cupping by stimulating the P6 and H7 point in controlling perioperative anxiety.

Mansour Choubsaz[1], Nasrin Amirifard[2*], Sahel Pourmatin[1]

[1]Department of Anaesthesiology, Critical Care and Pain Management, Imam Reza Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran

[2]Department of Radiology, Imam Reza Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran

Abstract

Anxiety disorders are the most common psychiatric disorders and one of the types of anxiety affects the patient during surgery. The aim of this study is to evaluate the dry-cupping effect by stimulating the point P6 and H7 in controlling perioperative anxiety. In this study 120 female participants, candidate for caesarean with spinal anaesthesia, were divided to three groups of 40 persons and finally 34 participants were chosen for each group. The first and second group intervened with dry-cupping method in P6 and H7 points and no intervention as control group. In on parity and more than on parity groups, anxiety reduced in both H7 and P6 groups and intervention H7 is more effective than intervention p6. In patients with history of spinal anaesthesia both type of intervention had a same effect in reducing anxiety. In patients with no history of spinal anaesthesia, both types of intervention are effective in reducing anxiety and H7 are more effective than P6. Cortisol level did not changed significantly in any groups. Acupuncture intervention are effective in reducing anxiety in all groups and in some groups, dry cupping in H7 point are more effective in reducing anxiety than p6 point.

Keywords: Anxiety, Acupuncture, Caesarean.

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Introduction

Anxiety disorders are the most common psychiatric disorders and one of the types of anxiety affects the patient during surgery [1]. In this type of anxiety the patient shows physical and psychological symptoms that influence the vital signs before, during and after the surgery, as well as the satisfaction of the anaesthesia process and surgery [2]. Patients who have surgery under spinal anaesthesia widely show anxious symptoms and perhaps the prevalence and severity of anxiety in these kind of surgeries are more than general anaesthesia because these patients are awake during the operation and largely aware of their surroundings [3].

Anxiety has several treatments from the perspective of psychiatric including two pharmacologic and non-pharmacologic treatments. One of non-pharmacological treatment is psychotherapy that contains subgroups such as cognitive therapy, behavioural therapy and family therapy. On the other hand drugs that used in the treatment of anxiety are include benzodiazepines, selective serotonin reuptake inhibitors, monoamine oxidase inhibitors, tricyclic agents, buspirone, beta-blockers and etc. [4-6].

Caesarean is one of the surgeries that a person has not only their own concerns, but fears and anxiety over her baby's health [7]. Control such anxiety in mothers is very important, because it can have a positive effect on the anaesthesia and surgical process [8]. Caesarean is an important issue that is high probability of passing the drug through the placenta and if the mother is under medical treatment we may face baby depression. Therefore, except in certain limited cases, the mother does not get sedated around caesarean surgery [9-11].

Acupuncture is one of the subgroups of alternative medicine that is effective in controlling anxiety during surgery. Several studies have been done on acupuncture and the results of these studies have shown that this method reduces peri-operative anxiety, reducing the need for anaesthesia, supports cardiovascular function, pain control after surgery, reduce postoperative ileus, and postoperative nausea and vomiting. Other studies have shown the effectiveness of the stimulation p6 and H7 points via acupuncture in both invasive and non-invasive way to control anxiety. P6 is located three finger breadths below the wrist on the inner forearm in between the two tendons. H7 is located at the wrist crease, on the radial side of the flexor carpi ulnaris tendon, between the ulna and the pisiform bones. In this study we have used dry cupping method as a simple, inexpensive, non-invasive and effective method and we have been evaluated the effect of stimulating the two points on anxiety rate in female during caesarean under spinal anaesthesia [12-15]. The aim of this study is to evaluate the

dry-cupping effect by stimulating the point P6 and H7 in controlling perioperative anxiety.

Materials and Methods

In this blind, randomized clinical trial we have selected 120 female participants, candidate for caesarean with spinal anaesthesia. Participants have been divided to three 40 persons groups and finally 34 participants were chosen for study in each group. The intervention was performed in the preparation phase before the surgery and the questionnaire was filled 30 minutes before surgery. The first and second group intervened with dry-cupping method in P6 and H7 points. The third group had no intervention and were considered as control group. The study performed between July to March 2013 in operation room of Emam-Reza Hospital in Kermanshah, Iran.

Patients' anxiety were evaluated based on Spielberger standard for anxiety by the person who was unaware about the patients' grouping before the intervention and also twice after the intervention, one after born the infant and six hours after surgery. Also both groups were evaluated in terms of cortisol levels before the intervention and after the baby are born.

The inclusion criteria was age between 18-35, ASA (American Society of Anaesthesiologists) class I and II, choosing the caesarean by themselves, and spinal anaesthesia. The exclusion criteria was changing the anaesthesia to general, having the history of mental illness and consumption of psychotropic drugs and sedatives. Informed consent was obtained from all patients, patients were permitted to be exit of the study at any time and no additional costs imposed to the patient.

Statistical analysis

All the data were analysed by SPSS (IBM Corp Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.) and to summarize the results one-dimensional and two-dimensional tables and numerical index as the mean ± SD is used. Levene test for quantitative data, t-test, one-way and two-way ANOVA and Kruskal-Wallis were used to data analysis. The maximum acceptable error of 0.05 was considered as significant level.

Results

We have divided the information into two groups for better understanding. The first group has been created base on parity and the second group based on history of spinal anaesthesia. The information of these groups could be seen in Table 1. The result of intervention and cortisol level introduced in each group.

Table 1. *Grouping the participant to introducing the results.*

	No. (%)
One parity	
H7	18 (52.9)
P6	24 (68.6)
Control	19 (54.3)
More than one parity	
H7	16 (47.1)
P6	11 (31.4)
Control	16 (45.7)
Having the history on spinal anaesthesia	
H7	24 (70.6)
P6	19 (54.3)
Control	32 (91.4)
No history on spinal anaesthesia	
H7	10 (29.4)
P6	16 (45.7)
Control	3 (8.6)

ANOVA results in one parity section show that before the intervention, mean scores were not significantly different in the three groups (P>0.05). But significant difference between the groups was observed after the birth, that these difference was related to average scores between H7 and control (P=0.002) and P6 and control (0.009). Six hours after the intervention a significant difference among the three groups were observed but in this step the differences was related to H7 and P6 groups and H7 and control group. In patients with more than one parity ANOVA results show that before the intervention, mean scores in the three groups were significantly different (P=0.014) that these differences were related to H7 and control group (P=0.008) and P6 and control group (0.037). Also a significant difference between the groups was observed after birth that was related to H7 and control group (0.009). But six hours after birth there were no significant differences between three groups as shown in Table 2.

Table 2. *Comparing the average anxiety scores of the three groups, before, after birth and six hours after birth.*

	H7 Group	**P6 Group**	**Control group**	**P value**
Patients with one parity				
Before intervention	28.83 ± 8.56	23.67 ± 6.73	21.84 ± 5.99	0.012
After birth	17.89 ± 8.05	19.25 ± 4.73	27.47 ± 6.94	<0.001
Six hours after birth	11. 72 ± 6.77	17.21 ± 5.93	16.47 ± 5.2	0.012
Patients with more than one parity				
Before intervention	24.38 ± 12.18	23 ± 8.75	15.19 ± 5.28	0.014
After birth	14.69 ± 9.98	19.45 ± 6.45	22 ± 4.99	0.03

Six hours after birth	17.13 ± 9.4	18.18 ± 5.86	11.81 ± 4.43	0.066
Data in table are presented as Mean ± SD				

According to ANOVA average amount of cortisol were not significantly different neither before nor after the intervention between one parity groups (P>0.05). In more than one parity group ANOVA results showed that mean cortisol levels significantly different between the three groups before the intervention (P<0.001) and these differences were related to H7 and control and P6 and control group (P=0.286) as shown in Table 3.

Table 3. *Compare the average cortisol levels between the two groups before the intervention and after the child's birth.*

	H7 group	P6 group	Control group	P value
Patients with one parity				
Before intervention	66.88 ± 22.72	173.67 ± 24.14	53.67 ± 20	0.502
After birth	242.56 ± 72.91	156.66 ± 24.0	276.89 ± 73.24	0.607
Patients with more than one parity				
Before intervention	92.92 ± 24.75	74.53 ± 21.73	136.64 ± 32.26	<0.001
After birth	97.73 ± 22.31	214.64 ± 83.6	214.37 ± 38.93	0.87
Data in table are presented as Mean ± SD				

In patients with history of spinal anaesthesia, ANOVA results show that before the intervention, mean scores were significantly different between H7 and control group (P=0.012). Also significant difference were recorded between P6 and control group (P=0.009). Six hours after intervention there was a significant difference between three groups (P=0.009) that were related to H7 and control (P=0.019) and P6 and H7 group (P=0.005). In patients with no history of spinal anaesthesia there was only significant differences between three groups that was related to H7 and control group (P=0.003) and P6 and H7 groups (P=0.023) but no significant differences after birth and six hours after birth as shown in Table 4.

Table 4. *Comparing the average anxiety scores of the three groups, before, after birth and six hours after birth.*

	H7 group	P6 group	Control group	P value
Patients with history of spinal anaesthesia				
Before intervention	25.08 ± 10.93	23.42 ± 8.08	19.19 ± 6.43	0.033
After birth	15.25 ± 9.25	19.53 ± 5.81	25.25 ± 6.64	<0.001
Six hours after birth	14.96 ± 9.45	17.79 ± 6.1	14.63 ± 5.37	0.19
Patients with no history of spinal anaesthesia				
Before intervention	30.7 ± 5.59	23.5 ± 6.51	14.67 ± 7.51	0.006
After birth	19.10 ± 8.25	19.06 ± 4.64	22 ± 7.21	0.753
Six hours after birth	12.6 ± 5.38	17.19 ± 5.71	11.33 ± 4.73	0.075
Data in table are presented as Mean ± SD				

In both group of patients with history and no history of spinal anaesthesia, cortisol level showed no significant level in any group as shown in Table 5.

Table 5. *Compare the average cortisol levels between the two groups, before and after birth.*

	H7 group	P6 group	Control group	P value
Patients with history of spinal anaesthesia				
Before intervention	80.1 ± 23.17	242.26 ± 190.64	177.62 ± 55.73	0.081
After intervention	229.96 ± 81.94	179.29 ± 24.58	249.66 ± 68.99	0.796
Patients with no history of spinal anaesthesia				
Before intervention	246.30 ± 80.45	229.97 ± 82.53	125 ± 40.15	0.081
After intervention	248.40 ± 93.54	228 ± 64.02	234 ± 50.11	0.796

Discussion

In the present study we assessed the dry-cupping effect by stimulating the point P6 and H7 in controlling perioperative anxiety. We found that Acupuncture interventions are effective in reducing anxiety in all groups and in some groups, dry cupping in H7 point are more effective in reducing anxiety than p6 point. The result of this study is consistent with previous studies which showed that acupuncture interventions in decreasing anxiety in surgery. In a study conducted in 2011 in China, the effect of magnetic-auricular-point sticking on 92 patients undergoing gynaecological surgery of the abdomen were evaluated. Mental changes and GI function, has been investigated before and 3 days after surgery and the result showed that this intervention has postoperative analgesic and sedative effects and regulatory G1 function in these patients [16].

Another study showed different result with present study. It performed in Canada on auricular-acupuncture effect on withdrawal-induced anxiety in patients with psychoactive drugs addiction. The number of subjects was 101 people and this intervention is done on them for 3 days and anxiety were evaluated before and after the intervention and no evidence were obtained that show reduce anxiety in these patients by auricular-acupuncture and auricular-acupuncture effects on reducing anxiety in these patients has been introduced controversy [17].

In China, a study compared the effect body-acupuncture and auricular-acupuncture on anxiety during surgery and 35 patients were participated in a randomized-blind study. The results of this study showed that both methods are effective in reducing anxiety during surgery and the result of this study is in a same direction with our study [13].

In a study conducted in London showed the positive effects of acupuncture-auricular on patients with generalized anxiety disorder, but a few evidence were obtained about effects of this intervention on perioperative anxiety [18]. In a study in 2010 conducted on 134 patients with 20 minutes acupuncture in Taiwan resulted in positive effects of acupuncture on symptoms of dysmenorrhea such as anxiety [19].

In a study conducted in Austria, acupuncture effect on anxiety in 100 patients with ESWL and as a result of this study, patients with intervention had lower anxiety than the control group [20]. In another study in Brazil, the effects of acupuncture on a 4 point of body including PC6 and HT7, on anxiety symptoms in women undergoing IVF where 43 patients have been tested in control and intervention groups. As a result of this study anxiety score was clearly less in intervention group in compare with control group and acupuncture considered as effective method in reducing anxiety in women undergoing IVF by reducing physiological parameters and in the current study both P6 and H7 were effective in reducing anxiety [21].

In a study conducted in Korea on effects of 5 minutes PC6 acupuncture on mice that were treated with corticosteroids for chronic tested and showed that this intervention is clearly reduced anxiety and depression and increased neuropeptide Y is hypothalamus. Also the suppression of hypothalamus-pituitary-adrenal axis resulting in chronic treatment with corticosteroids that leads to depression and anxiety were reduced by stimulating these points [22].

In a study conducted in Seoul the effects of PC6 acupuncture on memory loss induced by chronic mild stress is investigated. Stimulation of these points enhances the memory and increased the acetyl cholinesterase activity in the hippocampus. As a result, this intervention has beneficial effects on behavioural and biochemical damage, such as impaired learning and memory [23].

In this study in on parity group anxiety reducing in both groups was statistically significant and it could be said that both types of intervention are effective in reducing anxiety than the control group and intervention H7 is more effective than intervention p6. In the group with more than one parity we have resulted that both types of intervention are effective in reducing anxiety than the control group and intervention H7 is more effective than intervention p6. In both one and more than one parity groups, intervention failed to reduce cortisol levels as an index of anxiety.

In the point of cortisol level in group with one parity the cortisol level has been increased after intervention and only in the control group this increasing was significant. In patients with more than one parity the cortisol level decreased non-significant after H7 intervention and also was increased non-significant after P6 intervention and finally increased significantly in control group. So we could conclude that interventions could not decreased cortisol level significantly as an index of anxiety.

In patients with history of spinal anaesthesia both type of intervention had a same effect in reducing anxiety. In patients with no history of spinal anaesthesia, we can say that both types of intervention are effective in reducing anxiety and H7 are more effective than P6.

In patients with and without history of spinal anaesthesia we recorded a significant increase in cortisol level after the birth, but none of interventions couldn't decrease the cortisol level as a parameter for anxiety.

In conclusion according to the Spielberger standard for anxiety acupuncture intervention are effective in reducing anxiety in all groups and in some groups, dry cupping in H7 point are more effective in reducing anxiety than p6 point.

In this study, in some cases, we have observed non-significant reduction in anxiety and lower levels of cortisol; it may be helpful to consider more samples.

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Conflict of Interests

All authors declared that there is no conflict of interests related to this study.

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*Correspondence to

Nasrin Amirifard

Department of Radiology

Imam Reza Hospital

Kermanshah University of Medical Sciences

Iran