Antiemetic Effects of P6 Acupuncture/Acupressure

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Topic Sentence: Does P6 acupuncture/acupressure have any effects on nausea and vomiting?

Nausea and vomiting are symptoms experienced by many people after surgery and by women in the first trimester of pregnancy. These symptoms can be very uncomfortable and distressing to patients. Unfortunately, the use of pharmacological antiemetics is contraindicated due to adverse effects and for pregnant women, possible teratogenic effects to the fetus. The goal was to find an effective non-pharmacologic antiemetic with few adverse effects. Many studies have been done using acupuncture or acupressure at a specific site on the forearm, called P6, to determine any antiemetic effects.

The research question of my review is as follows: Are there any antiemetic effects of acupuncture or acupressure? The idealized independent variable is the use of acupuncture or acupressure, and the idealized dependent variable is the presence or absence of nausea or vomiting. The idealized hypothesis is as follows: The use of acupuncture or acupressure at the P6 position will reduce the effects of nausea and or vomiting postoperatively or in pregnant women in their first trimester. The symptoms of nausea and vomiting are the variables that will be measured after the use of P6 acupuncture or acupressure to determine any antiemetic effects. It is believed that the effects of P6 stimulation will decrease nausea and vomiting.

The independent variable in each article was the presence or absence of acupuncture/acupressure. It was defined as presence being the stimulation by either piercing the skin with a needle (acupuncture) or transcutaneous pressure (acupressure) at the P6 site located on the anterior surface of the forearm between the tendons of the extensor carpi radialis and the palmaris longus approximately 2 inches from the distal wrist crease. The absence of P6 stimulation, serving as the control, was defined differently in some of the articles. For example, there was either stimulation at a different site or use of a local anesthetic to block P6 stimulation. The dependent variable, symptoms of nausea or vomiting, was measured as the presence of nausea alone (N), nausea and vomiting was noted simply as vomiting (V). One article used the Rhodes index, a 0-32 point scale, as a measure of nausea (range 0-12), emesis (range 0-12), and retching (range 0-8).

The hypothesis tested in each article can be summarized as: Acupuncture/acupressure at the P6 position will decrease symptoms of nausea and or vomiting. In all of the articles, the hypothesis was significantly supported.

All of the articles have little external validity. All of the articles were strictly only conducted on females. This was due to the fact that the surgeries used were gynecologic procedures and therefore men could not be studied. In the study by Belluomini, et al., the participants were women because it was a study on nausea and vomiting during the first trimester of pregnancy. In the studies by Harmon, et al., patients with diabetes mellitus, obesity, and had previously experienced postoperative nausea and vomiting (PONV) were excluded from participating which was also a threat to the external validity. The subjects of their studies were very specific, and therefore, the results cannot be generalized to the larger US population. Only one article by Belluomini, et al. had a weakness in the internal validity because 33 percent failed to complete the study.

All five articles were in agreement about the hypothesis. In all articles, a statistically significant reduction in nausea and vomiting in the acupuncture/acupressure group compared to the control group was demonstrated. Three studies used acupuncture/acupressure initiated before induction of anesthesia and studied the results during and after surgery. The study by Belluomini, et al. recorded the antiemetic effects of acupressure during the first trimester of pregnancy. Whereas the 1991 study by Dundee, et al. used a local anesthetic to see if the antiemetic effects of P6 acupuncture were diminished. All of the studies concluded that the group receiving the P6 acupuncture/acupressure had a decrease in nausea and vomiting.
Some of the things that reduced the external validity in all five articles include the use of only females, the exclusion of those people with diabetes mellitus, obesity, or a history of PONV. A source of error that reduced the internal validity of one article was the fact that only 60 out of 90 subjects completed the study.

REFERENCES


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<th>Author(s)</th>
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<td>The authors are D. Harmon, M. Ryan, A. Kelly, and M. Bowen.</td>
<td>The independent variable in this study was the use of P6 acupressure.</td>
<td>The dependent variable in this study was the presence or absence of postoperative nausea and vomiting. It differed from my idealized independent variable because it only recorded the occurrences of vomiting (V) including vomiting with nausea or nausea alone (N). This created a bias in that it did not record any other symptoms or evaluate the severity of the symptoms.</td>
<td>The effect of P6 acupressure will reduce nausea and vomiting during and after operations in patients undergoing Caesarean sections under spinal anesthesia.</td>
<td>There was no threat to internal validity even though 4 patients were excluded due to a BMI &gt; 35 and 2 because of previous acupressure experience. These exclusions were not due to a bad research design. The study had little external validity because it excluded women with diabetes mellitus, obesity, and those having previous history of PONV. Of course men were not included, as they would never undergo this particular surgery. These results cannot be generalized to the larger US population.</td>
<td>The results demonstrated a significant reduction in nausea and vomiting during surgery in the acupressure group compared to the control group (stimulation at a non-acupoint site) (P=0.002). Again 24 hours after the operation there was still a significant reduction in n/v in the acupressure group compared to control (P=0.003). Therefore, the hypothesis was supported.</td>
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<td>The authors are J.W. Dundee, R.G. Ghaly, K.M. Bill, W.N. Chestnutt, K.T.J. Fitzpatrick, and A.G.A. Lynas.</td>
<td>The independent variable in this study was the use of P6 acupuncture and acupressure. It differed from my idealized independent variable because it used acupuncture (electrical and manual stimulation), acupressure, acupressure at a non-acupoint site, as well as a control with no P6 stimulation whatsoever.</td>
<td>The dependent variable in this study was the presence or absence postoperative nausea and vomiting.</td>
<td>P6 stimulation will decrease the occurrence of postoperative nausea and vomiting.</td>
<td>There were no threats to internal validity because all of the patients completed the study. This study shows that a statistically significant decrease in PONV in both acupuncture and acupressure groups with control or non-acupoint site groups. All four acupuncture treatments, both invasive (electrical and manual acupuncture) and non-invasive (P6 stud placement and P6 sea band) were similar.</td>
<td>This study shows that a statistically significant decrease in PONV in both acupuncture and acupressure groups with the control or non-acupoint site groups. All four acupuncture treatments, both invasive (electrical and manual acupuncture) and non-invasive (P6 stud placement and P6 sea band) were similar in reducing PONV during the first hour after operation. However, invasive acupuncture demonstrated higher efficacy in reducing PONV in the first 6 hours following surgery than the non-invasive acupressure. This supports the hypothesis.</td>
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<td>The authors are J.W. Dundee and G. Ghaly.</td>
<td>The independent variable in this study was the use of P6 acupuncture. It differed from my idealized independent variable because all subjects received P6 acupuncture but half of them received a local anesthetic to determine if the antiemetic effects of P6 stimulation would be blocked, supporting the view that a neural mechanism could be involved.</td>
<td>The dependent variable in this study was the presence or absence of nausea and vomiting. It recorded as the presence of nausea alone (N) or vomiting (V) with or without nausea or neither. This study displayed some bias due to the fact that no other symptoms were reported, and there was no evaluation of number of occurrences or severity of symptoms.</td>
<td>After the administration of a local anesthetic to the P6 acupuncture site, the antiemetic effects on PONV will be diminished.</td>
<td>There were no threats to internal validity. All 74 participants completed study. The time allotted for the study was quite short (6 hours) but long enough to get accurate results. The study had little external validity. The study only included women of child bearing age and weighing between 50 and 75 kg. This is a very specific group and cannot be generalized to the larger US population.</td>
<td>There was a significantly higher incidence of PONV in those patients whom received the local anesthetic (P=0.0139) compared to those injected with saline prior to P6 acupuncture. The hypothesis was supported due to the increased incidence of nausea and vomiting in the group receiving the local anesthetic.</td>
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<td>The authors are J. Belluomini, R.C. Litt, K.A. Lee, and M. Katz.</td>
<td>The independent variable in this study was the use of P6 acupressure in women during the first trimester of pregnancy.</td>
<td>The dependent variable in this study was the presence or absence of nausea and vomiting associated with the first trimester of pregnancy. They were measured using the Rhodes index having a potential range of 0-32. The scales include nausea (range 0-12), emesis (range 0-12), and retching (range 0-8). The scale also measures duration of nausea, amount of vomitus, and frequency as well as distress of nausea, vomiting, and retching. They differed from my idealized dependent variable because they measured n/v of pregnant women as opposed to postoperatively.</td>
<td>Acupressure at the P6 site is effective in reducing symptoms of nausea and vomiting in pregnant women.</td>
<td>There were some threats to internal validity. 30 of the 90 subjects failed to complete the study, which took place over 7 days. The first three days were used as the control with no acupressure used. The fourth day’s results were discarded to allow for the treatment to take effect. This was is was long enough to get accurate data since; n/v is one of the earliest symptoms of pregnancy and may persist through the first 16 weeks gestation. There was little external validity in this study. The participants were only females (because the participants were pregnant) and were limited the mean gestational age of 8.5 +/- 1.4 weeks. It did not include older gestational ages, previous diagnosis of hyperemesis gravidarum, molar or ectopic pregnancies, and those currently taking antiemetic medications. The results cannot be generalized to the larger US population.</td>
<td>Both the control group (acupressure at a nonacupoint site) and the treatment group (P6 acupressure) improved significantly over days 5-7 (P&lt;0.0001). But nausea improved significantly more in the treatment group that in the control group (P=0.0021). There was no difference in the severity or frequency of emesis between the groups. Therefore, the hypothesis was partially supported.</td>
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