

Effects of Nei-Guan Acupressure on Nausea, Vomiting and Level of Satisfaction for Gynecological Surgery Patients Who Are Using a Patient-Controlled Analgesia

Kim, Nam Cho¹ · Yoo, Je Bog² · Cho, Myung Sook³ · Shin, Eun Ju⁴ · Hahm, Tae Soo⁵

¹Professor, College of Nursing, The Catholic University of Korea

²Nurse Manager, PACU, Sam Sung Medical Center

³Chief Nursing Officer, Sam Sung Medical Center, Seoul

⁴Assistant Professor, Kun San College of Nursing, Gunsan

3 PCA (Eberhart et al., 2004). Choi, Ko, Ahn Kim (2005), 1, 5 (Hwang, Shim, Lee, & Kim, 2004). (Patient Controlled Analgesia, PCA) (Shin, 2002), (Lee, 2002), (Shin & Song, 2005) (Kim, Choi, Park, Na, & Hong, 2007; Lee & Min, 2008) PCA (Park, Choi, Cho, & Kim, 2004). Ondansetron Ondansetron 5-HT₃ (Kim et al., 2007). (Lee & Min, 2008). (acupressure), PCA (finger acupressure) (relief band) (Alkaissi, Evertsson, Johnsson, Ofenbarl, & Kalman, 2002; Kim, Kim, Shin, & Kim, 1995; Kim, Kwak & Yoon, 2002). 3

2. 연구 목적

(P6) (flexor carpi radialis muscle) (palmaris longus muscle) 2 (Kim, 2003).

3. 연구 가설

1. , .
2. , .
3. , .

	Before	P	Treatment	Post
Control group	O ₁	P		O ₂ -O ₆
Exp. 1 group	O ₁	P	TXa ₁ -TXa ₆	O ₂ -O ₆
Exp. 2 group	O ₁	P	TXb ₁ -TXb ₆	O ₂ -O ₆

P=Patient controlled analgesics; Exp. 1=experimental group (finger acupressure); TXa₁-TXa₆=Apply finger acupressure; Exp.2=experimental group (relief band); TXb₁-TXb₆=Apply relief band; O₁-O₆=Measure dependent variables.

Figure 1. Research design.

4. 용어 정의

(Figure 1).

1) 내관 혈 지압(Acupressure)

2

2. 연구 대상자 및 자료 수집 기간

2009 3 6 1
PCA

. Lee (2002) Machin, Campbell, Fayers

Pinol (1997)

1, 2 (α) .05,

.80, f=.50 17

51

17 17

17

2) 자가 통증 조절기

Fentanyl 1,500
μg, Ketolorac 180 mg, 64 mL

dical Auto Fuser, Ilsan, Korea, 2004)

(ACE Me-

1) 선정기준

, 19 55

3) 환자만족도

1, 2

1

연구 방법

1. 연구 설계

1

PCA

24

PCA

2) 제외기준

24

3. 연구 도구

1) 오심과 구토 정도

6, 12, 18, 24
10 cm 10
(numeric rating scale, NRS) 10

2) 환자 만족도 정도

10 cm 10 (NRS)

10

4. 실험 처치

1) 손 지압

Kim (2003)

20 cm 10

()

2

(Figure 2).

()

2

4

, 2

8

()

2

PCA

1

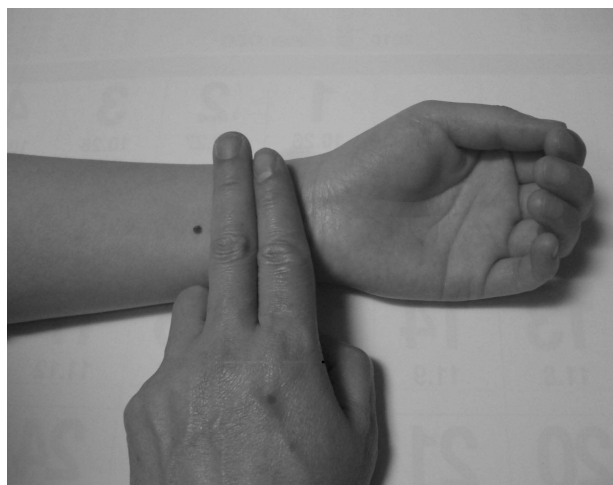


Figure 2. Nei-Guan (P6) acupressure point.

10 24 6
6
10 60
6 60 (Ming et
al., 2002) 1 20
3

2) 릴리프 밴드 지압

(Relief Band: Neurowave, Chicago, IL, USA, 2008)

PCA

2

1

24

6

(tendons)

()

연구 결과

1. 대상자 특성에 따른 동질성 검정

2. 연구변수에 대한 동질성 검정

3. 가설 검정

1) 제1가설: 내관 혈 지압을 실시한 손 지압군, 릴리프 밴드군과 대조군은 시간에 따라 오심 정도의 차이가 있을 것이다.

2) 제2가설: 내관 혈 지압을 실시한 손 지압군, 릴리프 밴드군과 대조군은 시간에 따라 구토 정도의 차이가 있을 것이다.

Table 1. Homogeneity for Characteristics of Participants

Characteristics/group	Exp. 1 (n=17)	Exp. 2 (n=17)	Cont. (n=17)	χ^2/t	<i>p</i>
	Mean \pm SD/n (%)	Mean \pm SD/n (%)	Mean \pm SD/n (%)		
Age in years					
21-30	0 (0.0)	1 (5.9)	1 (5.9)		.347*
31-40	4 (23.5)	2 (11.8)	7 (41.2)		
41-50	9 (53.0)	11 (64.7)	8 (47.1)		
Over 51	4 (23.5)	3 (17.6)	1 (5.9)		
Body weight (kg)	58.4 \pm 6.8	56.5 \pm 6.2	59.7 \pm 8.6	0.82	.445
Height (cm)	160.0 \pm 5.2	159.0 \pm 4.2	158.4 \pm 5.0	0.45	.640
Operation					
Laparoscopic assist myomectomy	2 (11.8)	0 (0.0)	1 (5.9)		.198*
Laparoscopic assist vagina hysterectomy	8 (47.1)	8 (47.1)	6 (35.3)		
Laparoscopic myomectomy	3 (17.6)	0 (0.0)	2 (11.8)		
Myomectomy	1 (5.9)	5 (29.4)	5 (29.4)		
Single port assist hysterectomy	1 (5.9)	1 (5.9)	3 (17.6)		
Total abdominal hysterectomy	2 (11.8)	3 (17.6)	0 (0.0)		
History of surgery					
Yes	4 (23.5)	10 (58.8)	6 (35.3)	4.61	.134
No	13 (76.5)	7 (41.2)	11 (64.7)		
Duration of operation					
1-2 hr	0 (0.0)	4 (23.5)	2 (11.8)		.385*
3-4 hr	12 (70.6)	9 (53.0)	10 (58.8)		
Over 4 hr	5 (29.4)	4 (23.5)	5 (29.4)		
Motion sickness					
Yes	2 (11.8)	6 (35.3)	4 (23.5)	2.72	.257
No	15 (88.2)	11 (64.7)	13 (76.5)		
Anesthetics					
Isoflurane	0 (0.0)	0 (0.0)	1 (5.9)	6.21	.143
Sevoflurane	4 (23.5)	9 (52.9)	4 (23.5)		
Desflurane	13 (76.5)	8 (47.1)	12 (70.6)		
Post Op. Dizziness					
Yes	0 (0.0)	4 (23.5)	1 (5.9)		.111*
No	17 (100.0)	13 (76.5)	16 (94.1)		
Post Op. Hypotension					
Yes	1 (5.9)	0 (0.0)	0 (0.0)		1.000*
No	16 (94.1)	17 (100.0)	17 (100.0)		

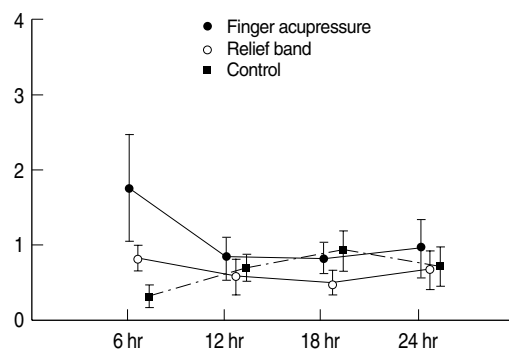
*Fisher's exact test.

Exp. 1=experimental group 1 (finger acupressure); Exp. 2=experimental group 2 (relief band); Cont.=control group; Op.= operation.

Table 2. Homogeneity test for variables on leaving PACU

	Exp. 1 (n=17)	Exp. 2 (n=17)	Cont. (n=17)	<i>F</i>	<i>p</i> - value [†]
	Mean \pm SD	Mean \pm SD	Mean \pm SD		
Nausea on leaving PACU	0.25 \pm 0.58	1.06 \pm 1.57	0.41 \pm 0.62	2.85	.068
Vomiting on leaving PACU	0.00 \pm 0.00	0.13 \pm 0.34	0.00 \pm 0.00	4.21	.122
Satisfaction on leaving PACU	6.56 \pm 1.46	5.63 \pm 2.50	6.06 \pm 2.66	0.68	.512

Exp. 1=experimental group (finger acupressure); Exp. 2=experimental group (relief band); Cont.=control group; PACU=post anesthetic care unit.

Figure 3. Comparisons of Nausea between three groups. Group *p*-value=0.708; Time*Group *p*=0.019.

*Repeated measures ANCOVA adjusted on leaving Post Anesthetic Care Unit.

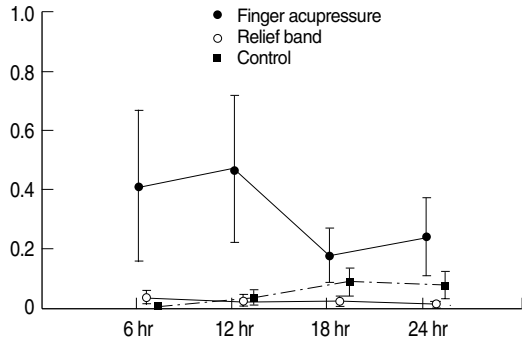


Figure 4. Comparisons of Vomiting between three groups.
Group p -value=5.552; Time*Group p =0.169.
*Repeated measures ANCOVA adjusted on leaving Post Anesthetic Care Unit.

(Figure 4).

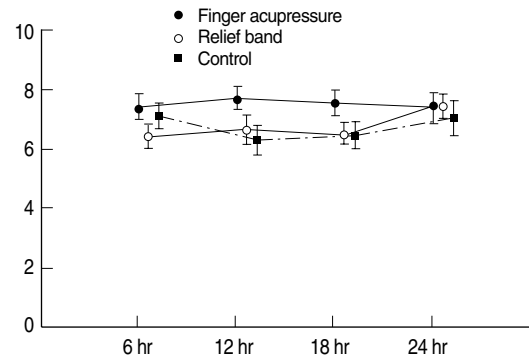


Figure 5. Comparisons of Patients' Satisfaction between three groups.
Group p -value=0.192; Time*Group p =0.418.
*Repeated measured ANCOVA adjusted on leaving Post Anesthetic Care Unit.

3) 제3가설: 내관 혈 지압을 실시한 손 지압군, 릴리프 밴드군과 대조군은 시간에 따라 환자 만족도의 차이가 있을 것이다.

(Figure 5).

논 의

PCA

(TENS)

(Choi et al., 2005), 1

24

6, 2

(Dundee & Yang, 1990)

1, 24

6, 18

2, 6 (Andrews, 1992), 6

24 (Kim, Yoo, Park, Ok, & Kim, 2004)

PCA

6

PCA

48, 24, 48 (Baek, Ok, Kim, Kim, & Lee, 2007)

6

Fentanyl

- 18
- 2 3
- Ming (2002)
- (Jang, Kim, Hong, Ok, & Kim, 2003), (Kim et al., 2002).
- (Kim et al., 2004), Fentanyl 15 3 Hz, Lee, Park, (Kim et al., 2001), (Kim et al., 2003) Kim (1995)
- () 2 Kim (2004)
- 10 24 PCA
- 2 1
- 6 2 24 (Dundee & Yang, 1990), TENS 35-40 6 (Fassoulaki, Papilas, Sarantopoulos, & Zotou, 1993). TENS Kim (2002)
- (Kim et al., 2004), Ondansetron (Hwang et al., 2004), Ondansetron Dolasetron (Kim et al., 2007), (Lee & Min, 2008)
- 10-35 mA 4 Dundee Ghaly (1989)

RCT

PCA

PCA

결론

PCA

51

PCA

24

6

PCA

PCA

REFERENCES

- Alkaissi, A., Evertsson, K., Johnsson, V., Ofenbartl L., & Kalman, S. (2002). P6 acupressure may relieve nausea and vomiting after gynecological surgery: An effectiveness study in 410 women. *Canadian Journal of Anesthesia*, 49, 1034-1039.
- Andrews, P. L. (1992). Physiology of nausea and vomiting. *British*

- Journal of Anesthesia*, 69 (7 Suppl 1), 2S-19S.
- Baek, Y. H., Ok, S. Y., Kim, S. I., Kim, S. C., & Lee, M. H. (2007). Effects of continuous epidural infusion after thoracic epidural anesthesia for mastectomy on postoperative pain, nausea and vomiting. *Korean Journal of Anesthesiology*, 52, 396-402.
- Choi, D. H., Ko, J. S., Ahn, H. J., & Kim, J. A. (2005). A Korean predictive model for postoperative nausea and vomiting. *Journal of Korean Medical Science*, 20, 811-815.
- Dundee, J. W., & Ghaly, R. G. (1989). Does the timing of P6 acupuncture influence its efficacy as a postoperative anti-emetic? *British Journal of Anaesthesia*, 63, 630.
- Dundee, J. W., & Yang, J. (1990). Prolongation of the antiemetic action of p6 acupuncture by acupressure in patients having cancer chemotherapy. *Journal of the Royal Society Medicine*, 83, 360-362.
- Eberhart, L. H., Geldner, G., Kranke, P., Morin, A. M., Schauffelen, A., Treiber, M., et al. (2004). The development and validation of a risk score to predict the probability of postoperative vomiting in pediatric patients. *Anesthesia and Analgesia*, 99, 1630-1637.
- Fassoulaki, A., Papilas, K., Sarantopoulos, C., & Zotou, M. (1993). Transcutaneous electrical nerve stimulation reduces the incidence of vomiting after hysterectomy. *Anesthesia and Analgesia*, 76, 1012-1014.
- Hwang, K. I., Shim, K. D., Lee, S. H., & Kim, H. D. (2004). The effect of continuous infusion of ondansetron on nausea and vomiting during intravenous patient-controlled analgesia. *Korean Journal of Anesthesiology*, 47, 830-833.
- Jang, Y. S., Kim, S. C., Hong, J. T., Ok, S. Y., & Kim, S. I. (2003). Transcutaneous electrical stimulation of the P6 acupoint reduces postoperative nausea and vomiting after laparoscopic cholecystectomy. *Korean Journal of Anesthesiology*, 44, 853-859.
- Kim, J. S., Choi, H. Y., Park, C. H., Na, H. W., & Hong, S. S. (2007). Effects of the Nei-Guan acupressure by wrist band on post operative nausea and vomiting after thyroidectomy. *Clinical Nursing Research*, 13, 79-89.
- Kim, K. S., Kim, D. S., Shin, K. I., & Kim, Y. S. (1995). Effect of electric acupuncture stimulation of PC 6 and PC 7 antiemetic point on postoperative nausea and vomiting. *The Journal of the Korean Society of Anesthesiologists*, 28, 433-439.
- Kim, M. S., Lee, S. Y., Kim, J. S., Min, S. K., Park, Y. D., & Park, H. J. (2007). The effect of ondansetron or dolasetron for the prevention of postoperative nausea and vomiting in patients with intravenous patient-controlled analgesia. *Korean Journal of Anesthesiology*, 53, 624-629.
- Kim, S. I., Kim, S. C., Choi, J. K., & Jin, H. C. (2001). Transcutaneous electrical acupoint stimulation for prevention of postoperative nausea and vomiting in female patients receiving iv-PCA. *Intravenous Anesthesia*, 5, 210-215.
- Kim, S. I., Yoo, I. S., Park, H. N., Ok, S. Y., & Kim, S. C. (2004).

Transcutaneous electrical stimulation of the P6 acupoint reduces postoperative nausea after minor breast surgery. *Korean Journal of Anesthesiology*, 47, 843-849.

Kim, W. M., Kwak, S. H., & Yoon, M. H. (2002). Effect of the P6 acupoint on opioid-induced nausea. *Korean Journal of Anesthesiology*, 42, 450-454.

Kim, Y. S. (2003). *The effects of the Nei-Guan (P6) acupressure on*