Hypnopresure Of Hegu Point (Li4) And San Yin Jiao (Sp 6) Could Increase The Level Of Oxytocin In The First Stage Of Labor

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Abstract

This study aims to explain the effect of hegu point hypnopressur (Li4) and san yin jiao (Sp6) on oxytocin levels among primigravida pregnant women in active phase I. The study design used a randomized pre and post test with control. The average age of the respondents was 19-27 years, most of them chose their husbands as birth attendants (90%) and they had high school education (55%), there was no significant difference (p-value > 0.05). The character is controllable and has no bias effect on the results.

Wilcoxon test results showed the effect of hypnopressur (HP) on increasing oxytocin levels (p=0.037), the results of the Kruskal Wallis test showed the highest oxytocin levels based on the mean difference in scores (delta) in the HP group (16.05±35.916), HA hypnotherapy (6.55 ± 14.85), AK acupressure (-7.8 ± 16.12), and control K (-370 ± 52.26). There were significant differences between the 4 treatment groups (p = 0.007). HP oxytocin levels were higher than K (p=0.045).

Keywords: oxytocin levels, hypnopressure, labor.

DOI Number: 10.14704/nq.2022.20.9.NQ440131 **Neuro Quantology 2022; 20(9):1166-1165**

INTRODUCTION

Labor or birth is a natural and physiological process in which cervical dilatation occurs, as well as the birth of the baby and the placenta from the mother's womb. Normal delivery occurs at 37-42 weeks of gestation, born spontaneously with a back of the head presentation lasting 18 hours without maternal and fetal complications (Cunningham FG, Leveno KJ, Bloom SL,Haunth JC, Gilstrap LC, 2005). Normal delivery is supported by 4 important factors ("4 Ps"), namely Powers (the strength of contractions), Passage (the pelvis and birth canal), Passenger (fetus) and Psyche (female response)(Durham, 2019). Labor is very painful due to contraction of the smooth muscles of the uterus.(Cunningham FG,Leveno KJ, Bloom SL,Haunth JC, Gilstrap LC, 2005)

The stage of labor is divided into 4 stages, the first stage starts from cervical dilatation less than 4 cm to complete dilatation (10 cm) (Gulardi H Wiknjosastro, Omo Abdul madjid, 2014). The delivery process takes 18 hours, requires patience, physical and psychological strength of the mother. Psychological factors, fear and anxiety are often the cause of the length of labor, so that his his becomes less good and the opening becomes less smooth. Previous research stated that 59% of primigravida mothers experience anxiety in the face of labor (Aniroh & Fatimah, 2019).

Pain is an unpleasant sensory and emotional experience, a person's pain is subjective and each individual feels different pain sensations, perceptions of pain and emotional responses. During labor, pain is generally felt to be severe, only 2-4% of mothers experience mild pain during labor. Labor pain scores 30-40 out of 50 scores. This score is higher than chronic back

pain syndrome, pain due to cancer, leg pain and others(santi, 2015). 27% of deliveries in Indonesia experienced complications and 53% of births with a history of anxiety or severe pain and prolonged labor (BKKBN, 2019). 19.41% in the city of Cirebon mothers with complications of pregnancy, childbirth and postpartum. On physical examination always mentioned vital signs consisting of 4 parameters, namely: blood pressure, pulse frequency, respiratory frequency, and temperature. Since 2004 the American Pain Society has included pain as the 5th vital sign. In studies 60-90% of women in labor experienced severe pain at some point during delivery.(Ohaeri et al., 2019) (Persalinan et al., n.d.). The strength of labor pain in primigravida is often heavier than the pain of multiparous labor, because of the experience of labor pain that has never been experienced (Jusri Adam & J.M.L Umboh., 2015). Pain is felt to be getting stronger, the peak of pain occurs in the active phase (Potter, P.A. Perry, 2005) . Labor pain causes anxiety so that cardiac output, oxygen demand, glucose and ketokelamine consumption increase so that uterine contractions are weak (uterine inertia) if not treated immediately, prolonged labor will. (Benfield et al., 2014)

Prolonged labor is labor that lasts more than 24 hours in primigravida, and more than 18 hours in multigravida. If the progress of labor is not going well during that period, the situation should be assessed immediately, the problem should be identified and resolved before 24 hours (Abdul Bari Saifuddin,SpOG,MPH, 2002). Long labor is one type of labor complications. WHO 2017 data shows that the consequences of childbirth complications accounted for 810 maternal deaths worldwide and the incidence of prolonged labor was 69,000. In the 2017 IDHS data, prolonged labor was the most reported delivery complication at 41% (Wahyuni Annisya, 2020). Previous research has proven that there is a relationship between the level of anxiety and the occurrence of prolonged labor, and has a moderate level of correlation, the more the mother experiences anxiety, the higher the occurrence of prolonged .labor (Setiani et al., 2020). Primigravida experience anxiety during childbirth as much as 58% (Aniroh & Fatimah, 2019).

Efforts to overcome labor pain, prolonged labor and overcome anxiety have been carried out using pharmacological and non-pharmacological methods. However, the gap that occurs is that pharmacological methods can only be used at the referral health facility level. Ease of access to hospital, easy access is 37.1%, difficult is 36.9%, and very difficult is 26% (Balitbankes RI, 2018). Based on data from Riskesdas 2018, the number of mothers who gave birth assisted by midwives was 62.7%. Therefore, it is necessary to develop non-pharmacological methods of pain management and prolonged labor that are easy to do, inexpensive, effective and can be used in basic health facilities.

Various non-pharmacological techniques have been carried out according to the patient's agreement including breathing techniques, distraction, aromatherapy, herbal use, hydrotherapy, hypnobirthing, self massage, TENS, and acupuncture. Hypnotherapy is effective for some patients with chronic pain (Downe et al., 2015) and has been shown to reduce pain and anxiety (Hauser.winfried, hagi, maria, scmierer Albrecht, 2016) (Rizka InnayatunMubarokah & Respati, 2020). Maternity mothers who receive acupuncture and hypnotherapy treatment can relieve labor pain (Safdari & Ra, 2015). Hypnotherapy is given using positive affirmations, with the aim of activating the subconscious while acupressure is one of massage by applying pressure and stimulation to acupuncture points, the stimulus that is carried by the peripheral nerve pathways to the central nervous system (Nugraha et al., 2019), but the therapist requires special skills through training.

Acupressure is a form of stimulation by providing massage and stimulation to certain points or acupoints on the body (Setyowati, 2018). The results of the study explain that acupressure therapy techniques are used as therapy in reducing pain levels in patients with various acute and chronic diseases.

Acupressure increases the release of hormones from the hypothalamus in the posterior pituitary system thereby activating the hormone oxytocin to stimulate uterine contractions (Persalinan et al., n.d.) (Arifin, 2008). So, if labor is slow, contractions are inadequate or slowing of cervical dilatation, acupoint stimulation can help regulate contractions and also restore balance in labour. This technique uses pressure, massage along the body's meridians or energy flow lines.

The results of previous studies that acupressure therapy is very effective in reducing labor pain levels, San Yin Jiao point acupressure (Sp 6) is recommended to be combined with other noninvasive methods (Enggal Hadi Kurniyawan, 2916). The San Yin Jiao (Sp6) point is an acupressure point that is easily recognized and easy to take action (Anita, 2018).

One of the non-pharmacological techniques that are effective and can be used to treat labor pain is hypnopressur hegu point (Li4) and san yin jiao (Sp6) Previous research has shown that stimulation of the acupuncture points of the SP6 and LI4 meridians is effective in reducing pain and duration of labor (Kundarti & Prasetya, 2019). Hypnopressur is a combination of hypnotherapy techniques with emphasis / massage by rotating 20 times clockwise for 3 seconds (60 seconds/1 minute) the acupressure point Hegu point (Li4) which is the point between the 1st and 2nd metacarpal bones, while the San Yin Jiao point (Sp6) which is 3 cm above the medial malleolus just posterior to the tibia during uterine contractions, and listens to hypnoaudio recordings to provide positive suggestions for uterine relaxation (Rizka Innayatun,Mubarokah & Respati, 2020). Hypnopressur can help control emotions, reduce stress levels, relax and reduce labor pains. Hegu point hypnopressur (Li4) and San yin jiao (Sp6) are nonpharmacological pain management methods that are a combination of psychological and sensory modulation which are expected when used together are believed to have a greater power effect (potentiation), but this combination technique has not been widely studied (accompanied by underlying scientific evidence) so that further research is needed. In this study, the researcher wanted to analyze whether there was an effect of Hypnopressur point hegu (li4) and san yin jiao (Sp 6) on oxytocin levels and duration of labor in the first stage of active primigravida?

Hypothesis

Hegu point (Li4) and san yin jiao (Sp6) hypnopressurs are more effective than hypnotherapy and acupressure on labor duration by increasing oxytocin levels in active phase I primigravida

METHODHOLOGY Research design

The scope of this research is obstetrics and gynecology, especially in aspects of the reproductive system related to oxytocin levels in labor . This research is a true experimental using a randomized pre post test control design.The reason for choosing this research design is to reduce the threat of internal and external validity. (Campbell DT, 1963). The study design used a double blind randomized pre and post test control trial. The research subjects were 80 divided into 4 groups: hypnopressure group (HP) n=20, hypnotherapy (HA) n=20, acupressure (AK) n=20 and control group (K) n=20 The intervention was carried out during the active phase of the first stage of labor. .Test statistics using Wilcoxon, Kruskal Wallis, RR, RRR, ARR.

The treatment was given to the active phase I 3 inpartu which was divided into 4 research groups, namely:

1. The active phase I inpartum intervention group was given hegu point (Li4) and san yin jiao (Sp 6) hypnopressur techniques.
2. The active phase I inpartu intervention group was given hypnotherapy technique
3. The active phase I inpartum intervention group was given acupressure on hegu (Li4) and san yin jiao (Sp 6) points
4. The control group was in the active phase of the first stage of labor with deep breathing relaxation

Research Ethics

This research entitled "The Effect of Hypnopressur on Hegu (Li4) and San Yin Jiao (Sp 6) Points on oxytocin levels and duration of the I Active Phase of Primigravida " has complied with ethical requirements by taking into account the principles stated in the National Guidelines for Health Research Ethics. (PNEPK), Health Research Ethics Commission, Faculty of Medicine, Diponegoro University with

No : 351/EC/KEPK/FK-UNDIP/IX/2021

RESULTS AND DISCUSSION Results 1. Descriptive Data Presentation

a. Research Subject Characteristics Data The characteristics of the subjects in this study include age and education, the following characteristics of the subjects of this study are presented in table 5.1.

Table 5.1 Characteristics of Research Subjects

Karakteristik Subyek	Kel HP Mean±SD, Min-Maks	Kel HA Mean±SD, Min-Maks	Kel AK Mean±SD, Min-Maks	Kel K Mean±SD, Min-Maks	Nilai p
Umur (tahun)	22.00±2.29 19-27	24.35±3.88 18-32	23.35±3.60 17-30	23.95±2.74 3 19-28	0.112 **
Pendamping Persalinan: n (%)					0,729*
Orang tua	1 (5)	1(5)	0	0	
Suami	18(90)	18(90)	18(90)	17(85)	
Keluarga	1(5)	1(5)	2(10)	3(15)	
Pendidikan: n(%)					0.783*
SD	2 (10)	1 (5)	2 (10)	1 (5)	
SMP	4 (20)	6 (30)	3 (15))	4 (20)	
SMA	11 (55)	9 (45)	14 (70)	12 (60)	
PT	3 (15)	4 (20)	1 (5)	3 (15)	

Subject characteristics including age (p=0.112), birth attendant (p=0.729), and education (p=0.783) were different and not statistically significant. Subject characteristic data is homogeneous.

2. Inferential data presentation The difference in the mean increase in oxytocin levels between the HP, HA, AK, and K groups

Table 5.3 Differences in oxytocin levels (Pre, Post, and Delta) among the 4 groups

Measurement Time	Kel HP Mean±SD Min-Max	Kel HA Mean±SD Min-Max	Kel AK Mean±SD Min-Max	Kel K Mean±SD Min-Max	Nilai p
Pretest	118,10±101,21 32-425	98,30±83,256 26-273	143.05±132,708 29-493	143,90±97,243 30-349	0,154**
Posttest	134,15±118,79 27-505	104,85±85,672 26-287	135,25±133,112 28-499	140,20±88,922 20-310	0,414**
Delta	16,05±35,916	6,55±14,855	-7,80±16,120	-3,70±52,366	0,007**
P value (*pretest* dan *posttest*)	0,037 *	0,042 *	0,049 *	0,304 *	

* *Wilcoxon*
***Kruskal Wallis Test*

The results of the analysis in table 5.2 show that the intervention of hypnopressur (p=0.037), hypnotherapy (p=0.042) and acupressure (p=0.049) caused an increase in oxytocin levels. The results of the Kruskal Wallis test based on the mean difference in scores (delta) in the 4 treatment groups showed that there was a significant difference, P value = 0.007.
The results of the Wilcoxon test between the 2 treatment groups showed that:

- HP VS AK group (P=0.004): there was a significant difference between the 2 treatment groups.
- HP VS K group (P=0.045): there was a significant difference between the 2 treatment groups,
- HP VS HA group (P=0.579): there was a difference but not significant between the 2 treatment groups

Discussion

1. Hypnopressur increases oxytocin levels

The first research hypothesis was that hegu point (Li4) and san yin jiao (Sp6) hypnopressurs were more effective than hypnotherapy and acupressure on labor duration by increasing oxytocin levels was accepted. It means that point hegu (Li4) and san yin jiao (Sp6) hypnopressur is a nonpharmacological technique that can increase oxytocin levels in childbirth, supported by an increase in the mean oxytocin score after intervention in the HP group by 16.05, while in the HP group it was 16.05. AK experienced a decrease in the mean oxytocin level score (table 4
5.3)
Oxytocin is a nine-amino acid neuropeptide produced by the paraventricular and supraoptic nuclei of the hypothalamus. role in childbirth and breastfeeding. In addition, oxytocin performs various functions (JK et al., 2019). Basal oxytocin levels increase 3-4-fold during pregnancy. Oxytocin impulses occur with increasing frequency, duration, and amplitude, from late pregnancy to delivery, reaching a maximum of 3 beats/10 minutes towards the end of labor. Oxytocin peaks during labor are not correlated in time with individual uterine contractions, and oxytocin impulses are not directly related to uterine contractions. Oxytocin levels also increase in the cerebrospinal fluid during labor, indicating that oxytocin is released into the brain, as well as into the circulation. Oxytocin released into the brain induces beneficial adaptive effects during labor and postpartum.(Uvnäs-Moberg et al., 2019)
The results of this study are in line with several theories which state that the san yin jiao point (Sp6) and the hegu point (Li4) hypnopressur is a combination of hypnotherapy and acupressure where the acupressure mechanism causes vascular vasodilation by means of manipulation techniques, namely performing stimulation techniques at the meridian points that connect san yin jiao point (Sp6) to the nervous system via the sacral plexus to L4, L5, S1, S2, S3, and the sciatic nerve branch and hegu point (Li 4) to the nervous system via the radial nerve and then into

the brachial flexus through the spinal cord and transmitted to the brain affects the hypothalamus so that the anterior pituitary stimulates endorphins neurotransmitters and posterior pituitary stimulates endogenous oxytocin. The acupressure mechanism causes vascular vasodilation with the nervous system passing through the spinal cord and transmitted to the brain affecting the hypothalamus so that the anterior pituitary stimulates endorphins neurotransmitters and posterior pituitary stimulates endogenous oxytocin (Corradino, 2017). Previous research has shown that synthetic oxytocin is used to aid labor by increasing uterine contractions. Given at the request of a doctor as much as 93% and used by inserting it into an infusion of 5% dextrose as much as 47% (Alan et al., 2020). Oxytocin can stimulate uterine contractions by acting directly on the myometrium, the difference with endogenous oxytocin besides being able to stimulate the uterus can also reduce anxiety, stress, inflammation and pain in labor and activate the pleasure center (HIMAWATI & KODIYAH, 2020). This is because oxytocin synthesis from the circulation does not cross the blood barrier (Uvnäs-Moberg et al., 2019). Oxytocin levels also increase in the cerebrospinal fluid during labor, indicating that oxytocin is released into the brain, as well as into the circulation. Oxytocin released into the brain induces beneficial adaptive effects during birth (Uvnäs-Moberg et al., 2019). Oxytocin levels also increase in the cerebrospinal fluid during labor, indicating that oxytocin is released into the brain, as well as into the circulation. Oxytocin released into the brain induces beneficial adaptive effects during birth. This study is in line with previous studies which proved that mothers with normal delivery oxytocin levels were correlated with anxiety, behavioral adaptation and the amount of breast milk that came out during the postpartum period (Nissen, E.; Gustavsson, P.; Widström, A.M, Uvnäs-Moberg, 1998). Other studies have shown that there are differences in oxytocin levels and duration of labor in the first to second stages of labor between the hypnopressure group and the control group (Sari et al., 2019). This study was conducted on primigravida mothers using hypnopressure technique, and the acupressure points used were LI4, SP6 and BL67 points.

2. Hypnopressur shortens labor

Prolonged labor is labor that lasts more than 24 hours in primigravida, and more than 18 hours in multigravida. If labor progress is not going well during that period, the situation should be assessed immediately, the problem should be identified and resolved before 24 hours 12. Primiparous mothers usually experience a high sense of anxiety in the face of labor, this can affect the strength of the mother's contractions to push the fetus out during the labor process. Pressure hypnosis application in obstetrics with planning a physiological delivery without being accompanied by psychological disorders such as excessive anxiety , and could shorten duration of labor .

The results of this study prove that the intervention Hypnopressur on mother giving 5 birth during phase I active effective shorten the length of labor compared to intervention hypnoaudio , acupressure and pull breath long , hal this supported by the data on the mean duration of phase I phase active calculated births _ in minutes that have longest duration of labor _ is in the HP group that is of (113.00), then order next is HA group (141.25), and followed by with in the AK group (186.75) and in the K group (193.25) . Based on average difference labor duration score fourth group obtained p value <0.05 is 0.032 so that concluded there is significant difference _ average difference labor duration score before and after intervention Among HP group with HA, AK and K groups .

Research results previously entitled “Influence _ Hypnopressure To Enhancement Oxytocin and the duration of labor in the first to second stages of primigravida (Study of Primigravida Inpartum Mothers in the Working Area Semarang City Health Center) proves that the length of labor from the I to II stages is longer short 187.67 minutes in the group intervention hypnopressure .

Study this in line with theory that states that Hypnopressur with method give hypnotherapy via audio accompanied technique manipulation that is do technique stimulation at the meridian point connect point san yin jiao (Sp6) ke system nerves through plexus sacral to L4, L5, S1, S2, S3, and branches nerves sciatica as well as point hegu (Li 4) ke system nerves through the radial nerve then enter to in the brachial flexus passes

through the spinal cord and continues to brain affect the hypothalamus The anterior pituitary stimulates endorphins and the posterior pituitary stimulates endogenous oxytocin , can stimulate coordinated uterine contractility _ _ pain and anxiety. (Corradino, 2017) Uterine contractions are something enhancement myometrial activity throughout uterine preparation for childbirth, so occur landing and opening tender cervix during phase I active as well as drop head fetus . Landing causing expulsion mucus plug when channel shortened cervix . [1]

A. Limitations Study

A number of limitations researchers found in research this is as following:

1. 8 maternity mothers who dropped out maternity and not conducted data analysis
2. Biomarker check only rate oxytocin , while for measure painful
(Serotonin) and beta endorphins yet conducted
3. Confounding variables that affect degrees painful no all could controlled, such as socio - cultural aspects psychological support family.

CONCLUSIONS: Hegu point hypnopressur (Li4) and san yin jiao (Sp6) are more effective in increasing oxytocin levels than hypnotherapy and acupressure in active phase I primigravida

Acknowledgments:

Thanks to the health office and the midwife's independent practice and all those who have facilitated and supported the research

Conflicts of interest: No conflicts of interest

Ethics approval:

This research has complied with ethical requirements by taking into account the principles stated in the National Guidelines for Health Research Ethics. (PNEPK), Health Research Ethics Commission, Faculty of Medicine, Diponegoro University with No : 351/EC/KEPK/FK-UNDIP/IX/202

Consent to participate: research subjects have been given an explanation and signed an informed consent form

Funding:

This research was funded by the Study Task Fund from the Ministry of Health. Thank you so much to the director and the academic community of the Health Polytechnic of the Ministry of Health of Tasikmalaya who have supported this study.

Authorship:

Yeni Fitrianingsih : Contribute to research concepts and data collection,
Noor Pramono : Contribute to the methodology
Dwi Pudjonarko : Contribute to data analysis
Hanung Prasetya : Contributed to the preparation of the original draft

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