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Improvement of Prolactin Hormone Levels on Postpartum Mothers Taken by The Oketani Massage and Pressure in GB-21 Point

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Abstract

Background: Breastfeeding will provide a wide range of benefits for both mother and baby. Breastfeeding is one of the physical adaptations and processes of changing maternal roles in postpartum mothers. Not all mothers can go through this process correctly. A small amount of milk production on the first day of postpartum is one of the complaints that is often felt by mothers. The hormone prolactin is one of the factors that influence milk production. One way to stimulate the production of the hormone prolactin is by breast treatment. Breast care will affect hypopise to release the hormone progesterone, estrogen, prolactin, and oxytocin more.

Objective: The purpose of this study was to identify the effect of pressure on the Jianjing GB-21 acupressure point and Oketani massage on the level of the hormone prolactin.

Method: The type of this research is a quasi-experiment with the design used is a pre-post-test design with the control group. Prolactin hormone levels were examined before the intervention (on the first day) and on a ninth day. The examination was carried out using the ELISA (Enzym Linked Immunosorbent Assay) technique. Data obtained was analyzed using an independent sample T-test.

Result: The study showed that there was an increase in mean values of maternal prolactin levels after oketani massage intervention and pressure on GB-21 acupressure points. The administration of a combination of interventions, namely Oketani massage and pressure at the GB-21 point, can increase the highest levels of the hormone prolactin, which is 3.41. Whereas in the control group that did not get any intervention, had the lowest levels of the hormone prolactin that is equal to 2,925

Conclusion: it can be concluded that oketani massage and applying pressure at the GB-21 point can increase the levels of the hormone prolactin, respectively.

Keywords: Acupressure; Jianjing GB-21; Oketani massage; Prolactin

INTRODUCTION

Infant Mortality Rate (IMR) in Indonesia is still quite high compared to countries in Southeast Asia, which is 24 per 1,000 live births, compared to Malaysia (16/1000) and Singapore (2/1000) live births. This figure is also far from the target SDGs of 12 per 1000 live births in 2030 (National Population and Family Planning Board - BKKBN,

Statistics Indonesia - BPS, Ministry of Health - Kemenkes, & ICF, 2018). The most common causes of infant death are diarrhea and drinking problems (31.4%) and pneumonia (23.8%) (Ministry of Health, 2018). The high infant mortality rate can be overcome if the baby gets adequate nutrition through breastfeeding. UNICEF data states that 30,000 infant deaths in Indonesia and 10 million

infant deaths in the world each year can be prevented through exclusive breastfeeding for six months from the date of birth, without having to provide additional food and drink to babies (Flaherman, Chan, Desai, Agung, Hartati, & Yelda, 2018).

Based on Indonesia's Health Profile in 2017, the coverage of exclusive breastfeeding in Indonesia reaches 35.73% or about one-third of babies who get exclusive breastfeeding from birth until the age of six months (Ministry of Health, 2017). While the coverage data for exclusive breastfeeding in Central Java in 2017 was 41.89%. Data from the Semarang City Health Office shows that the coverage of exclusive breastfeeding in Semarang City in 2017 was 67.16%, reaching the target of the Central Java Provincial Health Office at 65%. But there are still some areas in the city of Semarang where coverage of exclusive breastfeeding is still below the target (Central Java provincial health department, 2017).

Exclusive breastfeeding is influenced by several factors, such as breastfeeding knowledge, attitude, subjective norm, practice control, and breastfeeding experience (Huang, Ouyang, & Redding, 2019; Zhang, Zhu, Zhang, & Wan, 2018). Breastfeeding experience is included the involvement of breastfeeding not coming out immediately on the first day after giving birth, mothers feel breast milk comes out a bit, difficulty in sucking the baby, the state of putting mother's milk, and the influence of the promotion of replacement milk (Isytiaroh, 2019).

Field conditions indicate that early breastfeeding success is also influenced by the mother's and baby's health. Post-cesarean section mothers need recovery time due to the effects of anesthesia and the pain of the cesarean section. The policy of several hospitals that do not implement rooming in with the reason that the mother still needs supervision is weak and cannot care for her baby will cause breastfeeding to experience a delay. The delayed breastfeeding will cause the mother to stop breastfeeding. Research conducted by Hobbs, Mannion, McDonald, S. Brockway, & Tough (2016) reveals that women who delivered by planned c-section had no

intention to breastfeed or did not initiate breastfeeding. It makes them have a three times greater risk of stopping breastfeeding in the first month postpartum compared to mothers who gave birth normally.

Blushing and pumping breast milk for 10-20 minutes to overcome the delayed breastfeeding process until the baby can suckle. Blushing and pumping breast milk can help maximize prolactin receptors and reduce the risk due to the absence of breastfeeding (Jones, 2018). In addition to expressing milk, efforts to stimulate the hormones prolactin and oxytocin can also be made by breast care, breast massage, oxytocin massage, endorphin massage, and acupressure. Massage can influence psychological factors, thereby increasing the relaxation and comfort level of the mother, reducing stress and making the mother more healthy and relaxed.

Oketani massage in postpartum mothers can cause breasts to become softer, the areola and nipples become elastic, increase the flow of milk because there is pressure on the alveoli, provide comfort and relieve pain in the breast (Kabir & Tasnim, 2009). Stimulation to increase the reflex letdown can be done by acupressure massage at Jianjing GB-21 point. The pressure at this point, can provide calm and relaxation during breastfeeding (Moriarty, & Sharp, 2013). Research on the intervention of oketani massage and applying pressure at the Jianjing GB-21 point has not been done much in Indonesia, so it is necessary to conduct a study of the effect of oketani massage and acupressure at the GB-21 point in increasing the production of the hormone prolactin.

The purpose of this study was to identify the effect of pressure on the Jianjing GB-21 acupressure point and Oketani massage on the level of the hormone prolactin.

METHOD

This type of research is a quasi-experiment with the design used is the pre-post-test design with a control group. In this study, divided into two groups, namely the intervention group and the

control group, measurements were made at the first and last time of the study. (Sugiyono, 2001).

The study was conducted from July to September 2017. The intervention group was divided into three interventions, the first group was given the intervention of oketani massage, the second group was given a pressure intervention at the point GB-21, and the third group was given the intervention of a combination of oketani massage and pressure at the point GB-21. Prolactin hormone levels were examined before the intervention (on the first day) and on a ninth day. The examination was carried out using the ELISA (Enzym Linked Immunosorbent Assay) technique.

The sample was postpartum mothers in the Mlati II Public Health Center in Sleman. The inclusion criteria in this study were normal postpartum mothers in the Mlati II Public Health Center in Sleman, providing exclusive breastfeeding, healthy infants, infant weight of 2800 - 4000 grams. Criteria for exclusion were mothers with postpartum complications, such as postpartum hemorrhage, postpartum infection, anemia. To describe the characteristics of respondents and the dependent variable using the frequency distribution while analyzing differences in the levels of the hormone prolactin in the intervention and control groups using the independent sample T-test.

Prior to the research, the proposal was carried out in a study at the Medical / Health Research Biotetics Commission of FK Unnisula Semarang proven by certificate number 192 / V / 2017 / Biotic Commission.

RESULTS

Table 2. Prolactin hormone levels in Respondents

Group	Before (day 1)				After (day 9)			
	Min	Max	Mean	SD	Min	Max	Mean	SD
GB-21	2.65	3.3	2.95	0.26	1.82	3.08	2.47	0.53in
Oketani Massage	2.22	3.13	2.84	0.325	0.593	3.13	2.92	0.98
Combination	2.3	3.16	2.8	0.367	2.44	3.41	2.86	0.36
Control	2.309	3.160	3.02	0.145	1.82	2.925	2.707	0.273

The oldest respondent age was 42 years in the combination group (Oketani and Pressure at point GB-21). Respondents have a junior high school

The study result is shown in Table 1. It explains that the youngest age is found in the Oketani group, which is the age of 20 years, the oldest one is in the combination group (Oketani and Pressure at the point of GB-21), namely 42 years. The highest number of deliveries (parity) in all groups was three births.

Table 1. Distribution of respondents based on age and parity

Variable	Group	Min	Max	Mean	S.D
Age	GB-21	24	40	30	6,058
	Oketani	20	38	32	7,162
	Combination	24	42	32	7,106
	Control	26	42	32	6,181
Parity	GB-21	1	6	3	1,92
	Oketani	1	3	2	0,836
	Combination	2	3	2	0.54
	Control	1	3	2	0.707

Table 2 shows that the administration of a combination of interventions, namely Oketani massage and pressure at the GB-21 point, can increase the highest levels of the hormone prolactin, which is 3.41. Whereas in the control group that did not get any intervention, had the lowest levels of the hormone prolactin that is equal to 2,925.

DISCUSSION

The results of the study explained that the youngest age of the respondents was 20 years in the Oketani group. Respondents have a junior high school education background with P1A0 obstetric status, gives birth to the first child with a birth weight of 3200 grams. This respondent showed the lowest prolactin level on the first day compared to other respondents, which was 41 ng / mL.

education background with P2A0 obstetrics status, giving birth to a baby with a birth weight of 2500 grams. Respondents had prolactin levels on the first

day at 30.7 ng / mL (the lowest compared to respondents in the same group).

Prolactin hormone levels

The results of this study showed that on a ninth day, an increase in prolactin was 3.41 in the intervention group combination of Oketani massage and pressure at the Gb-21 point, low prolactin levels occurred in the group without intervention. Effective interventions reduce stress, increase relaxation, enhance the immune system so that people can feel healthier is with massage (Yu, Wells, Wei, & Fewtrell, 2019). Massage is one way to release prolactin and oxytocin into the body.

Satomi Oketani from Japan was the first person to develop an Oketani massage. The Oketani massage is considered as a useful technique to build confidence and improved milk secretion among mothers facing difficulty during lactation (Roy, Tasnim, Jahan, Nazmeen, Debnath, & Islam, 2019). It is proven to provide comfort, provide a relaxed feeling, reduce pain in postpartum mothers, and load the breast feels softer, makes the mothers more feels elastic in their areola and nipples, makes it easier for babies to suckle because there is an emphasis on the alveoli so that the flow of milk is smoother.

Oketani massage is done for 15-20 minutes, by giving massage to the retro mammary (Oketani massage steps the first technique to the seventh technique) and one massage technique on the right and left breast (the eighth technique) (Kabir & Tasnim, 2009).

The results of this study indicate that the intervention of Oketani massage on respondents can increase levels of the hormone prolactin by 3.13 on the ninth day. This research is in line with Foda's theory (2004), which explains that the increase in the production of the hormone prolactin and oxytocin by the intervention of Oketani massage. The production of breast milk in the alveoli is influenced by the hormone prolactin, while that which stimulates the breast glands for breast milk is the hormone oxytocin.

Prolactin hormone secretion can be stimulated by other interventions that put pressure on the Jianjing

GB-21 acupressure point (Gall Blader 21) (Yelland, 2005). The results of this study showed an increase in the level of the prolactin hormone on the ninth day was 3.08 in the group of respondents with the intervention of the Jianjing Gb-21 acupressure point, whereas on the first day the level of the prolactin hormone level was 1.82.

To stimulate an increased decrease in reflexes (flow reflexes), it can be with Jianjing Acupressure Point GB-21 (Gall Blader 21). In breastfeeding mothers who experience muscle tension can be applied to pressure points, Jianjing Gb-21 acupressure to provide a sense of relaxation and calm during breastfeeding (Moriarty, & Sharp, 2013).

Prolactin hormone levels secreted during breastfeeding have a relaxing effect and euphoria that causes breastfeeding mothers to feel calm, so that high levels of the hormone prolactin during breastfeeding can prevent psychological disorders in postpartum mothers, including postpartum blues. (Riordan & Auerbach, 2010 in Rahayu et al., 2015).

The way to escalate milk production by increasing feelings of relaxation in postpartum mothers is the Jianjing Gb-21 acupressure point (Rahayu, 2015). Minimize the side effects of delays in breastfeeding babies and maximize prolactin receptors with Jianjing Gb-21 acupressure point techniques. Through the acupressure meridian points according to the organ in question can increase the levels of endorphins in the blood and systemic, also reduce the discomfort that will suppress the production of the hormone prolactin (Garret et al, 2003 in Apriany, 2010: Saputra, 2000).

The gate control theory explains that large-diameter Beta nerve fibers receive stimulation from the meridian acupressure points that are transmitted to the spinal cord, and the spinal cord contains gelatin as a control gate before the afferent nerve fibers send to cell transmission. Then, cell transmission transmits to the central nervous system with reduced discomfort before (Hakam, Krisna & Tutik, 2009 in Rahayu et al., 2015).

Massage and pressure at the acupressure point can increase the body's endorphin levels, which is the body's natural morphine (Haryanto, Sriyono,

Rosyidi, & Afandi, 2018). A comfortable, calm, and relaxed atmosphere will bring positive emotions that can increase the secretion of endorphin neurotransmitters through POMC, which functions as a painkiller and excessive control of CRF secretion (Lestari, Rahmawati, & Windarti, 2019). Let down reflexes, levels of the hormones prolactin, and oxytocin can increase if the mother feels comfortable and relaxed (Rahayu et al., 2015). Producing the hormone prolactin from the brain can be stimulated by acupressure points for lactation (Rahayu et al., 2015). The points which are the lactation peak stimulation points are ST 17 (Ruzhong), ST 18 (Rugen), and Jianjing GB-21.

CONCLUSION

It can be concluded that Oketani massage and applying pressure at the GB-21 point can increase the levels of the hormone prolactin, respectively, by 3.08 and 3.13 on the ninth day. The highest increase in the prolactin hormone was found in respondents who received a combination intervention of Oketani massage and pressure at the GB-21 point, which was 3.41.

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