THE EFFECT OF WARM COMPRESS ON THE REDUCTION OF LABOR PAIN IN ACTIVE LABOR PHASE

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Abstract, Background: Labor pain is a normal thing experienced by mothers in labor, but if it can't be controlled it will increase worry and fear so that it hampers the progress of labor. Warm compresses are one of the non-pharmacological pain reduction techniques that can be given to reduce labor pain. This Evidence Based Case Report (EBCR) aims to determine the effect of giving warm compresses to the reduction of labor pain during the active phase of the first stage of labor in women giving birth at the Sukarasa Health Center.

Methods: An article search on the effectiveness of giving warm compresses to mothers in labor was conducted at PubMed library. The keywords used are " influence", “warm compresses”, “AND”, “labor pain”. The search for articles was limited by inclusion criteria, namely articles published in the last 5 years, in the form of full text articles, and according to clinical questions.

Result And Discussion : Two articles were found including 1 research article using the randomized control trial method by Akbarzadeh, et al and 1 interventional research article by Kaur J et al that met the inclusion and had been screened and then analyzed critically. Based on the two journals that both show evidence that warm compresses have an effect on reducing labor pain in the first stage of the active phase**.** After critically reviewing the research, it was declared valid, important, and applicable to patients.

Conclusion: Warm compresses show effectiveness in reducing labor pain in the active phase 1, can be used as a reference for applying warm compresses to reduce pain in the active phase of the first stage of labor. So it is hoped that health care facilities can start applying warm compresses to mothers during the first stage of this active phase.

Keywords : Pain labor, warm compress, the active phase

Background

Normal delivery is a birth that starts spontaneously, is at low risk at the beginning of labor and remains so during the delivery process, the baby is born spontaneously with a back of the head presentation, at 37-42 weeks of gestation and after delivery both the mother and baby are in good health.[17] Maternal mortality and perinatal mortality are a reflection of the ability to provide health services, especially in childbirth assistance.[19] Childbirth can cause trauma to the mother because of the pain she experiences and does not want to get pregnant and give birth again. Labor pain is the most painful pain, especially for mothers who are experiencing it for the first time. Childbirth is a period filled with pain, fear, suffering and even death, this is what causes many requests to perform *sectio caesaria* .[16]

Pain in labor arises due to dilatation of the cervix and lower uterine segment, distension, continuous stretching, and trauma to the muscle fibers and ligaments that support these structures. Stimulation of the first stage of labor is transmitted from afferent fibers via the superior, inferior and middle hypogastric plexuses, lower thoracic and lumbar sympathetic chains to the posterior nerve root ganglia. Pain may radiate from the pelvic area to the umbilicus, upper thigh and midsacral area. The intensity experienced by contractions is associated with the degree and speed of dilatation of the cervix and lower uterine segment, where as labor progresses, the intensity of each contraction increases, resulting in greater pain intensity.[14] Efforts to reduce labor pain can be done both pharmacologically and non-pharmacologically.

One effort to reduce pain non-pharmacologically is with a warm compress.[16] A warm compress is applied to the woman's lower

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back in the area where the fetal head presses against the spine. With a warm compress will generate heat which will increase the local skin temperature thereby reducing muscle spasm and reducing pain.[5] Heat can increase blood flow, reduce sensitivity and muscle stiffness, which increases blood flow to relieve pain and fatigue. It also blocks the transmission of impulses to the brain through the release of endorphins to decrease pain. Heat can be transferred through warm wet towels, heat pads, heated silica paste bags, or hot water bottles.[12]

The cases presented are the results of care carried out at the Sukarasa Health Center, namely as follows: Mrs. P, 29 years old, came to PONED on April 10, 2022 at 03.30 WIB complaining of heartburn since 23.00 WIB. The results of assessment are: BP: 100/70, TFU: 31 cm FHR: 135x/minute, contraction: 3x10x40", opening cerviks dilatation 5 cm, head presentation. Measure intensity pain, with moderate painful results 5. Patient recommended for conducted warm compress, compressed using a warm towel above body temperature if the towel is cold then it is replaced with a warm towel and given repeatedly for 20 minutes and be measured return intensity the pain with painful light results 2.

The formulation of the clinical question based on the clinical case above in the active phase I inpartu patient is whether there is an effect of warm compresses on reducing labor pain?

P: Mother giving birth
I : Warm Compress
C : There is no comparison or other intervention
O: Labor pain

Methods

A literature search was conducted on April 19, 2022 at the PubMed library . The keywords used are " influence", "warm compresses", "AND", "labor pain". The search for articles was limited by inclusion criteria, namely articles published in the last 5 years, in the form of full text articles, and according to clinical questions. There were 5 articles from the search results which were then selected and reviewed based on the inclusion criteria. There are two remaining articles that correspond to the EBCR clinical question. The selected articles were then subjected to a critical review, which consisted of three aspects, namely research validity, clinical importance and applicability or relevance to existing clinical problems. For each selected article, the degree of strength of evidence or level of evidence is also determined, which is described in a table, so that the table will show precision, consistency, conformity, and controversy of the results, as well as which evidence is the best evidence.

Results And Discussion

Obtained two research articles Randomized Clinical Trial and experimental research from the results of a journal search. Akbarzadeh et al. conducted a study entitled The Effect of Two-Staged Warm Compress on the Pain Duration of First and Second Labor Stages and Apgar Score in Prim Gravida Women: a Randomized Clinical Trial. This study assessed the effect of warm compresses on the duration of labor pain in the first and second stages and neonatal outcomes . The clinical trial was conducted on 150 women (75 subjects in each group) in the hospital. The intervention in the form of warm compresses was carried out for 15-20 minutes in the 1st and 2nd stage of labor, while the control group received routine care at the hospital. Then the duration of labor and Apgar scores were evaluated. The results showed that based on the t-test, the average duration of labor was lower in the intervention group compared to the control group in the 2nd stage of labor. However, there was no significant difference for the duration of the first stage of labor and the first and fifth minute Apgar scores. Thus, this intervention, namely warm compresses, is a good method to reduce the duration of labor during the second stage of labor.[1]

The second article is a study entitled Effectiveness of warm compression on the lumbo-sacral region in terms of labor pain intensity and labor outcomes among nulliparous: An interventional study by Kaur J, et al in 2020. This study aims to assess and evaluate the effectiveness of warm compression (moist heat) in the lumbo-sacral area in terms of labor pain intensity and labor outcome. The experimental study design was conducted on 88 nulliparous women with normal, singleton pregnancies (44 pregnant women in each group) who were admitted to the delivery room. Mothers who had high-risk pregnancies were excluded. Warm compressions were given to nulliparous mothers in the experimental group with a hydrochollator pack at 70℃ for 20 minutes for three times with one hour interval in the lumbo sacral area starting from the cervical dilatation 4-5 cm. Labor pain intensity scores, fetal heart rate, frequency and duration of uterine contractions were assessed before and immediately after administration of warm compressions and after 30 minutes only labor pain was assessed. The results showed that immediately after the first, second and third warm compresses the pain intensity score of compression labor in the experimental group was lower than the control group, respectively ($t = 3.20$; $P < 0.001$; $t = 4.45$; $P < 0.001$; $t = 6.18$; $P < 0.001$). But no significant differences were found in fetal heart rate and delivery outcomes in terms of duration of labor, type of delivery, live/non-living babies and crying immediately after birth. Thus warm compression is a useful

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method for reducing labor pain among nulliparous mothers in the 1st stage of labor and mothers report being satisfied with this intervention.[1]

From the two journals, there were results that supported the use of warm water compresses for active phase I inpartum mothers. The findings of this study were similar to those conducted by Fahami and by Taavoni where labor pain was reduced due to the application of heat therapy. This result is because heat increases the release of heat receptors and stops the transmission of pain signals to the brain by closing the pain control gates. Based on the t-test, the average length of labor in the intervention group was lower than the second stage of the control group. However, there was no significant difference for the duration of the first stage of labor and the first and fifth minute Apgar scores. Which proves the efficacy of warm water in labor in multiparous women. In the study mentioned above, the intervention was effective in both phases of labor while in this study it was found to be significant only in the second phase.

A warm compress is a technique of providing warmth to certain areas by using a bag filled with warm water, to provide comfort, reduce and relieve pain, reduce and prevent muscle spasms and provide a feeling of warmth and comfort in certain areas. The use of warm compresses for tense and painful areas is thought to relieve pain and reduce muscle spasm caused by ischemia which stimulates neurons that block further transmission of pain stimuli causing vasodilation and increased blood flow to the area where the compression is applied. Pain from muscle spasm responds well to heat, because heat dilates blood vessels and increases local blood flow. Heat relieves pain by removing inflammatory products, such as bradykinin, histamine and prostaglandins that cause local pain. Heat also stimulates nerve fibers that close the pain gate, then the transmission of pain impulses to the spinal cord and brain can be inhibited, so this will provide a sense of comfort when the mother will give birth to her child. The results of other studies also show that before the intervention of giving a warm compress, 15 respondents experienced severe pain and after the intervention of giving a warm compress, 14 respondents experienced slight pain. After being analyzed using the Wilcoxon test, it was found that the p value was 0.000 with a level and it can be concluded that the p value 0.05. Thus, it is said that there is an effect of giving warm compresses to the intensity of pain in the first stage of active labor in the RB.[18]

Warm compresses are used to dilate blood vessels, stimulate blood circulation, and reduce stiffness. In addition, a warm compress also serves to relieve the sensation of pain. To get the best results, warm compress therapy is carried out for 20 minutes with 1 administration and pain intensity measurements are carried out from 15-20 minutes during the procedure [18]. The body parts that are often afflicted with complaints of pain during childbirth are the abdomen, waist. In addition to drugs, therapy for first aid can be done with warm compresses. Warm compresses are useful for improving blood circulation, stimulating blood vessels, reducing muscle spasms and increasing the pain threshold, relieving pain sensations, stimulating intestinal peristalsis, removing lymph, providing calm and comfort for pregnant women. Based on the results of the search for journals, it was found that there were 2 appropriate journals based on the formulation of the problem. This is in accordance with the research of Malarewicz and Taavoni et al., who proved the effect of warm water on labor in multiparous women. In the study mentioned above, the intervention was effective in both phases of labor while in this study it was found to be significant only in the second phase. The results of this study are also reinforced by the results of research conducted by Fitrianingsih in 2017, with the title "The Effect of Warm Compresses on Pain in Labor in the First Stage of Active Phase of Labor". With the Asym.Sig value (p value) of 0.000. This shows that the p value <0.05 so it can be concluded that there is an effect of warm compresses on reducing labor pain in the first stage of active phase. Giving warm compresses can be done for 15-20 minutes.[7] But there are other factors that can affect the reduction of labor pain in mothers including family support (birth attendant), and previous experience of pain, research conducted by Anggraeni and Agustina (2014).

Research conducted by Magfuroh (2012) that mothers who have experienced pain before have a milder level of pain after being in a warm water compress than mothers who are not given a warm compress. A similar opinion regarding the results of this study was shown by Namazi in 2014 that there was a significant effect of warm compresses on labor anxiety in the active phase of the first stage.[4] This is supported by research by Ratnasari Dwi (2015) on mothers in labor in the first stage of the active phase which showed that there was a significant difference in pain scale before and after warm compress therapy.[5] The results of this study are also reinforced by the results of Yani's research (2012) giving warm water compresses given to a woman's lower back for 20 minutes in the area where the fetal head presses the spine will reduce labor pain. From the results of these studies there are significant differences in pain before and after being given a warm compress.[6] The results of this study are in accordance with research conducted by Fitrianingsih (2018) and research by Rahman and Handayani (2017) that each group experienced a decrease in pain after being given warm compress therapy. Labor pain is reduced due to the application of heat therapy. Hot compresses increase the release of heat receptors and stop the

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transmission of pain signals to the brain by closing the pain control gates. Heat can increase blood flow, reduce sensitivity and muscle stiffness, which increases blood flow to relieve pain and fatigue. It also blocks the transmission of impulses to the brain through the release of endorphins to reduce pain.[11]

Conclusion

Based on the two journals that the authors use in this report and both show evidence that warm compresses have an effect on reducing labor pain in the first stage of the active phase. Scientific evidence from the results of this study can be used as a reference for applying warm compresses to reduce pain in the active phase of the first stage of labor. So it is hoped that health care facilities can start applying warm compresses to mothers during the first stage of this active phase because it is easy and cheap to apply this method because usually at the puskesmas there are always warm water and compresses/small towels that can be used as tools for implementing this method.

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