EFFECTIVENESS OF HYDROTHERAPY AGAINST DECREASE IN BLOOD PRESSURE IN PREGNANT WOMEN WITH PREECLAMPSIA: LITERATURE REVIEW

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Abstract

Preeclampsia is one of the diseases that cause high maternal and fetal mortality. To find out the effectiveness of hydrotherapy against lowered blood pressure in pregnant women with preeclampsia. Research design literature review. Journal criteria are filtered based on literature titles, abstracts and keywords or keywords that have been determined and sourced from biomed central, portal garuda, perpustakaan nasional, pubmed, google scholar dan freefull PDF which were identified through the Population, Interventions, Comparison, Outcomes and Study Design (PICOS) system approach. The number of articles used for this research literature is 10 journals. There are two methods of hydrotherapy using warm water used in lowering blood pressure in pregnant women with preeclampsia because the mechanism of work of warm water is to produce heat energy that makes dilation in blood vessels so that blood flow becomes smooth and there is a decrease in blood pressure. It can then be concluded that hydroretapi is effective in lowering blood pressure in pregnant women with preeclampsia.

Keyword: hydrotherapy, pregnant women, preeclampsia\

Introduction

Pregnancy is a natural process that occurs in every woman. Pregnancy is physiological that makes women experience changes and it is normal to occur, due to these changes, it does not rule out the possibility of problems during pregnancy (Prawirohardjo S., 2014)

During pregnancy problems will arise in pregnancy, these problems are abnormalities that occur during pregnancy such as bleeding, preeclampsia, eclampsia, placenta previa and even death (APN, 2017)

Preeclampsia is the appearance of symptoms such as high blood pressure, edema and positive proteinuria that appear in women who are pregnant, during childbirth and during the puerperium (Padila, 2015)

According to the world health organization (who), the maternal mortality rate (mmr) is still very high, around 810 women die from complications related to pregnancy or childbirth worldwide every day, and about 295,000 women die during and after pregnancy and childbirth. The

maternal mortality rate in developing countries reaches 462/100,000 live births. Whereas in developed countries it is 11/100,000 live births (who, 2020).

In 2014 aki cases in south kalimantan were 120 people due to bleeding 33 cases (27.5%), preeclampsia/eclampsia 34 cases (28.3%), infection 3 cases (2.5%), abortion 1 case (0 8%) and others 49 cases (40.8%). In 2015 there was a decrease in aki as many as 89 cases caused by bleeding 27 cases (30.3%), preeclampsia/eclampsia 20 cases (22.4%), infection 1 case (1.1%), metabolic disorders 4 cases (4 ,4%), circulatory disorders 8 cases (8.9%) and others 29 cases (32.5%) (diskes prov. Kalsel, 2016). The incidence of preeclampsia through data from rsud dr. H. Moch ansari saleh banjarmasin in 2016 stated that the incidence of severe preeclampsia (peb) was 386 people and in 2017 from january to june the total number of cases of preeclampsia was 222 cases (Ramie, Fahreza, & Mahdalena, 2018).

Preeclampsia has an impact on the mother and fetus, the mother can experience heart failure, abnormalities in blood clotting (dic), detachment of the retina from the supporting tissue (retinal detachment), disorders of the liver and blood (help syndrome), shock, eclampsia, which is a disorder that occurs during pregnancy, childbirth and after delivery (partum) is characterized by seizures, detachment of the placenta from the inner uterine wall before pregnancy (placental abruption) and death. While in the fetus, there will be delayed growth in the uterus, neonatal asphyxia, premature birth, death in the uterus, increased perinatal morbidity and mortality (Sabattani, Supriyono, & Machmudah, 2016).

Management of preeclampsia can be pharmacological and non-pharmacological, pharmacological management given to patients with preeclampsia can cause side effects because it contains chemicals, while non-pharmacological management is a natural treatment in the form of nutritional therapy, reflexology massage, aromatherapy and foot bath therapy using warm water (Damayanti, 2013)

Scientifically, soaking the feet in warm water has many benefits for the body, such as improving blood circulation. Another benefit of soaking the feet in warm water is to increase circulation, reduce edema, and relax the muscles. Hydrotherapy (foot soak) is also able to increase blood circulation by widening blood vessels so that more oxygen enters the swollen tissue, thereby reducing edema (Priharyanti, Arifianto, & Dian, 2016).

Research conducted by damayanti (2013) on hypertensive patients in the kebondalem area of semarang with a p value of 0.000, foot soak using a warm foot bath is one of the non-pharmacological therapies that are natural in nature which aims to increase circulation in blood vessels, reduce edema, increase relaxation. In muscles, nourishes the heart, relaxes muscles, minimizes stress, increases capillary permeability, so it is very useful for lowering blood pressure in pregnant women who suffer from preeclampsia (Damayanti, 2013).

Based on the data obtained in the background, the authors are interested and want to do a review using the literature review method on the effectiveness of hydrotherapy on reducing blood pressure in pregnant women with preeclampsia.

Materials and Methods

The method used is a literature review. The literature review method is a form of research carried out through searching by reading from various sources such as books, journals and other publications related to research topics to answer existing problems or issues (neuman, 2011), with the keyword hydrotherapy for mothers. Pregnant in indonesian searches and hydrotherapy for preeclampsia for english searches using the biomed central database, garuda portal, national library, pubmed, google scholar and freefull pdf.

Results and Discussion

Research design literature review. Journal criteria are filtered based on literature titles, abstracts and keywords or keywords that have been determined and sourced from biomed central, portal garuda, perpustakaan nasional, pubmed, google scholar dan freefull PDF which were identified through the Population, Interventions, Comparison, Outcomes and Study Design (PICOS) system approach. The number of articles used for this research literature is 10 journals.

10 journals obtained 9 journals using warm water foot soak hydrotherapy and 1 journal using whole body soaking therapy (sitz bath).

The type of hydrotherapy that is often used is a warm foot bath. Warm water soak hydrotherapy is one type of natural therapy using water at a temperature of 370c-420c by soaking the feet only or soaking the whole body. Hydrotherapy with warm water at a temperature of 370c-420c can relax stiff muscles, dilate blood vessels, increase blood vessel permeability, and make blood vessels smooth. The occurrence of a decrease in blood pressure after warm water therapy can occur because the blood vessels experience dilation and provide a sense of relaxation. Because giving warm water therapy can relieve stress, depression, anxiety, anxiety and can provide mental and emotional fitness and make you feel relaxed, comfortable and calm. Warm water therapy is also able to provide a relaxing effect by increasing a sense of comfort through a warm sensation on the skin surface (Nurpratiwi & Elveni, 2021).

The mechanism of action of foot soak hydrotherapy using warm water with a temperature of 37oc-39oc can produce heat energy that makes hot and cold changes that can make dilatation so as to facilitate blood circulation, and also stimulate the parasympathetic nerves in the leg nerves to be active. As a result of stimulation of the nerves of the legs, stimulation of the cortic sinus baroreceptors and the aortic arch will transmit stimulation to the brain. Due to the stimulus, the response given is an increase in parasympathetic nerve activity which secretes acetylcholine so that the heart rate decreases, consequently making the size of the arteries widen resulting in dilation of blood vessels. Dilation of blood vessels makes it easier for blood to enter the heart so that when the ventricles contract, the systolic blood pressure decreases and when the ventricle relaxes the diastolic pressure also drops. This will make blood flow smoother so that there is a decrease in blood pressure (Aryani & Zayani, 2020).

Hydrotherapy that has an influence in lowering blood pressure in pregnant women with preeclampsia is hydrotherapy using warm water, hydrotherapy using warm water with a combination of other therapies such as classical music therapy and deep breathing relaxation therapy, and hydrotherapy using warm water with a mixture of spices such as lemongrass, ginger, epson salt and lemongrass oil.

Hydrotherapy with warm water or combination therapy has an effect on reducing systolic and diastolic blood pressure in third trimester pregnant women with hypertension, post partum caesarean section women with severe preeclampsia, pregnant women with hypertension, pregnant women with arterial stiffness and pregnant women with preeclampsia with hypertension. Trimester of pregnancy 1-3 or at least 20 weeks with a mother age range of 20-40 years.

It can be said that the range of blood pressure reduction in pregnant women is systolic blood pressure from 3-16 mmhg and 3.4-9 mmhg for a decrease in diastolic blood pressure. Similar to the results of aryani & zayani's research, (2020) there was a decrease in systolic blood pressure by an average of 13-16 mmhg and diastolic 8-9 mmhg (Aryani & Zayani, 2020).

Therapy is carried out for 3 consecutive days or it can be for one month with the duration of therapy can be done for 10 minutes, 15 minutes and 20 minutes with water temperature 37oc - 42oc and room temperature 32oc - 34oc.

Not only the method of soaking the feet, but there are other methods that can also reduce systolic and diastolic blood pressure or the problem of arterial stiffness in pregnant women with preeclampsia, namely the method of immersing the entire body of pregnant women to the limit of the xiphoid process or breastbone in an indoor swimming pool at a temperature of 32-32°c. 34oc for 40 minutes. After completion of therapy, the effect was 21.3% and 22.2% on blood pressure (Linhares, Machado, & Malachias, 2020). Because soaking the feet or soaking the whole body in warm water has a hot/warm physical effect that can cause solids, gases and liquids to expand in all directions and can increase chemical reactions. In tissues as the exchange between chemicals present in the body and body fluids increases. The biological effect of heat/warmth can cause dilation of blood vessels resulting in dilation of blood vessels, lowering muscle tension, lowering blood viscosity, increasing capillary permeability and increasing tissue metabolism. So that the hot/warm effect on foot bath therapy with warm water will dilate blood vessels so that blood circulation increases, it is effective in lowering blood pressure in pregnant women who experience preeclampsia if done regularly (Sabattani et al., 2016)

Conclusion

The results of research and discussion of 10 journals used as literature, the conclusions of the research are as follows:

1. The type of hydrotherapy used by researchers is foot soak and full body soak (sitz bath) with warm water media with a temperature of 37oC-39oC.
2. The working mechanism of warm water is to produce heat energy which makes blood vessels dilate so that blood flow becomes smooth and there is a decrease in blood pressure.
3. Hydrotherapy that has an effect on lowering blood pressure in pregnant women with preeclampsia is hydrotherapy using warm water, hydrotherapy using warm water with a combination of other therapies such as classical music therapy and deep breathing relaxation therapy, and hydrotherapy using warm water with a mixture of spices such as lemongrass, ginger, Epson salt and lemongrass oil.
4. Hydrotherapy with warm water or combination therapy has an effect on reducing systolic and diastolic blood pressure in third trimester pregnant women with hypertension, post partum caesarean section women with severe preeclampsia, pregnant women with hypertension, pregnant women with arterial stiffness and pregnant women with preeclampsia with a gestational age of 1-3 trimesters or at least 20 weeks with a maternal age range of 20-40 years.
5. The range of blood pressure reduction rates in pregnant women is the systolic blood pressure of 3-16 mmHg and 3.4-9 mmHg for the decrease in diastolic blood pressure.

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Declaration of Interest Statement

The author realizes that in writing the manuscript for this publication, he encountered several problems, one of which was to meet the supervisor for consultation

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