INCREASING HEMOGLOBIN (HB) LEVELS ON ANEMIC POSTPARTUM MOTHERS WITH SNAKEHEAD FISH (CHANNA STRIATA) EXTRACT

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ABSTRACT

Fulfillment of protein nutrition can affect hemoglobin levels. Snakehead fish (channa striata) is a fish that is high in protein and albumin. Low hemoglobin levels in postpartum mothers are caused by caesarean section. The aim of this study was to analyze the effect of snakehead fish (channa striata) extract on increasing hemoglobin (HB) levels in post caesarean section anemic postpartum mothers. The research design uses quasi-experimental with pretest-posttest control group design. The population was all 30 post caesarean section anemic postpartum mothers at Permata Bunda Hospital, Malang, a sample of 30 people divided into 2 groups (15 people each in the treatment and control groups). The intervention group was given 1000 mg of snakehead fish (channa striata) extract, antibiotics and fe tablets for 14 days while the control group was given antibiotics and fe tablets. Data were analyzed using the Independent t test. The results showed that there was a change in HB levels ($p = 0.000 < 0.05$). Statistically, it can be concluded that there is an effect of giving snakehead fish extract (Channa Striata) on increasing hemoglobin (HB) levels in anemic postpartum mothers. Snakehead fish has the highest albumin content so it can increase hemoglobin levels in postpartum mothers. Further research regarding the benefits of snakehead fish extract, such as the wound healing process in postpartum mothers, is recommended.

Keywords: Snakehead Fish Extract (Channa Striata), Hemoglobin Levels, caesarean section, Anemia

INTRODUCTION

Caesarean section is a modern surgical method in the 20th century which plays a role in reducing the morbidity rate and mortality rate in mothers giving birth (1). Advances in the field of medical technology, especially in this delivery method, clearly bring great benefits to the safety of the mother and baby and make the delivery process easier so that many pregnant women prefer to choose this route even though they can actually give birth normally (2).

The World Health Organization (WHO) sets the average standard for caesarean section in a country at 5-15% in the world (2). Government hospitals are 11% while private hospitals are more than 30%. The caesarean section delivery rate in Indonesia is 15.3% of a sample of 20,591 mothers who gave birth in the last 5 years who were interviewed in 33 provinces. In Indonesia, delivery by caesarean section has exceeded the WHO standard maximum limit of 5-15% (3).

In births with caesarean section, the mortality rate is twice that of vaginal birth, the morbidity rate is also higher in caesarean section deliveries, this is due to infection, blood loss and damage to internal organs. One of the factors associated with caesarean section surgery is anemia (4). caesarean section procedures can result in changes in the body's physiological functions, including respiratory depression, a decrease in body temperature metabolism, as well as a decrease in gastro intestinal intensity, loss of a lot of blood during surgery which can cause anemia (5). The impact of anemia on postpartum mothers can cause disruption to the mother's movements and activities in fulfilling her responsibilities as a new mother, threaten the continuity of the breastfeeding process (especially exclusive breastfeeding), disrupt nutritional status, and can disrupt the interaction between mother and baby because anemia causes fatigue, exhaustion and mother looks pale (6).

Pharmacological therapy to increase hemoglobin levels by administering blood supplement tablets. Blood supplement tablets that are taken require nutritional intake that can help absorption in the body. One thing that is needed is protein. Protein plays an important role in transporting iron in the body. Lack of protein intake will result in hampered iron transport resulting in iron deficiency. Iron deficiency causes hemoglobin (Hb) levels in the blood to be lower than normal, namely anemia (10). post caesarean section anemic postpartum mothers definitely need high levels of protein and albumin, therefore the dose of snakehead fish (channa striata) extract needed is also higher, namely >750 mg, so in this study the dose of snakehead fish (channa striata) extract was increased to 1000 mg (12). Snakehead fish (channa striata) with high albumin has the function of accelerating the recovery of split/damaged body cell tissue and also as a means of transporting materials that are less soluble in water that pass through blood plasma and cell fluid, one of these materials is iron (13).

In increasing hemoglobin levels in anemic mothers, research that has been carried out (14), (15) and (16) is by giving beetroot juice, a combination of spinach juice and tomato juice, and Moringa leaf extract. Research with snakehead fish extract (channa striata) has also been carried out on normal post caesarean section anemic postpartum mothers with a dose of 500mg for 6 weeks with less effective results, there was an increase from 10.38gr% to 11.03gr% but with a long time, namely 6 weeks. post caesarean section anemic postpartum mothers need a faster time to increase Hb levels, so a higher dose is needed, namely > 500 mg and a shorter time or < 6 weeks (17).

From the description above, research is needed that can increase Hb levels in anemic post caesarean section anemic postpartum mothers by providing snakehead fish (channa striata) extract at a dose of 1000 mg for 14 days.

METHODOLOGY

The type of research used was quasi-experimental with a pretest posttest control group design. In this study, the intervention and control groups received a pretest and then continued with the intervention and ended with a posttest. The population in this study were all post caesarean section anemic postpartum mothers, namely 30 postpartum mothers. The research sample was 30 respondents, the 30 people were divided into 2 groups, namely the group that received treatment (intervention) of 15 postpartum mothers and the control group of 15 postpartum mothers. In the intervention group, the treatment was given 1000 mg of snakehead fish extract for 14 days, 1 x 500 mg of antibiotics, 1 x 60 mg of Fe tablets and for the control group they were given 1 x 500 mg of antibiotics and 1 x 60 mg Fe tablet. The technique used is accidental sampling. The measuring instrument used is a check haemometer with the normal category = ≥ 11 gr %, mild anemia = Hb 9-10 gr %, moderate anemia = Hb 7-8 gr % and severe anemia = Hb < 7 gr %. The data source used in this research is primary data. Primary data is data obtained from the results of checking hemoglobin levels using a check hemometer. The data collection technique is observation, namely through observation, measurement and direct examination of postpartum mothers. Data were analyzed using the Independent t test.

RESULTS AND DISCUSSION

This research was carried out at the Permata Bunda Hospital in Malang for approximately three months, starting with the licensing process and collecting initial data, then continuing with providing intervention to the sample, namely post caesarean section anemic postpartum mothers for 14 days.

Data collection in the study was carried out directly where respondents had their Hb levels checked before being given the intervention. From the entire population of post caesarean section anemic postpartum mothers, 30 people were found who were suitable and met the criteria determined by the researchers. The 30 people were divided into 2 groups, namely the group that was given control group treatment. In the treatment group, snakehead fish extract was given 1000 mg for 14 days, 1 x 500 mg antibiotic and 1 x 60 mg Fe tablet and the control group was given 1 x 500 mg antibiotic and 1 x 60 mg Fe tablet.

The data obtained was then processed using SPSS and presented in the form of frequency tables and tabulations. The research results can be described as follows:

1. Univariate Analysis

a. Characteristics of Respondents According to Age

Table 1 Characteristics of Respondents According to Age

Characteristics	Frequency (n)	Percentage (%)
<20 years old	2	6.7
20-35 years old	25	83.3
>35 years old	3	10

Table 1 shows the percentage of respondents according to age who indicated that the highest age was 20-35 years, 26 people (83.3%) and the lowest was <20 years old, 1 person (6.7%).

b. Characteristics of Respondents According to Level of education

Table 2 Characteristics of Respondents According to Level of education

Characteristics	Frequency (n)	Percentage (%)
Elementary School	5	16.6
Junior High School	7	23.4
Senior High School	15	50
College	3	10

Table 2 shows that the Senior High School education level has the highest number, namely 15 people (50%), while the lowest is the College education level, namely 3 person (10%).

c. Characteristics of Respondents According Type of work

Table 3 Characteristics of Respondents According Type of work

Characteristics	Frequency (n)	Percentage (%)
Housewife	15	50
Private	6	20
Self-employed	7	23,3
Civil servants	2	6,7

Table 3 shows the percentage of respondents' jobs divided into several categories and the one that shows the most occupation is housewife, namely 15 people (50%) while the lowest is civil servant, namely 2 people (6.7%).

d. Distribution of Respondents According to Hb Levels

Table 4 Characteristics of Respondents According to Hb Levels

Characteristics	frequency before treatment given	Percentage (%)	frequency after treatment given	Percentage (%)
Normal	0	0	19	63,3
Mild Anemia	25	83,3	9	30
Moderate Anemia	5	16,7	1	3,3
Severe Anemia	0	0	1	3,3

Table 4 shows that the highest number before the intervention was carried out, respondents experienced mild anemia, namely 25 people (83.3%) and the lowest was moderate anemia. After the intervention, there was an increase in Hb in the group that received the treatment and there was also a decrease in the control group so that in table 4 it was found that normal Hb levels showed an increase in the number to 19 people (63.3%).

Respondents to this study were divided into 2 groups. In the intervention group, the treatment was given 1000 mg snakehead fish extract for 14 days, 1 x 500 mg antibiotic and 1 x 60 mg Fe tablet and for the control group 1 x 500 mg antibiotic and 1 x 60 mg Fe tablet were given. Respondents in this study were postpartum mothers post cesarean section with anemia at Permata Bunda Hospital who met the inclusion criteria and exclusion criteria. The inclusion and exclusion criteria are: willing to be a respondent, mothers with Hb levels > 8 gr% and < 11 gr%, no transfusion. Exclusion criteria are patients who have infections, are obese, have a history of previous caesarean section, have a history of Diabetes Mellitus, patients who have a history of bleeding.

2. Bivariate Analysis

a. Effect of Snakehead Fish Extract (Channa Striata) on Increasing Hemoglobin (Hb) Levels in Anemic Postpartum Mothers

Table 5 results of the correlation test for the variable Increase in Hemoglobin (Hb) Levels in Anemic Postpartum mothers

Hemoglobin (Hb) Levels / Group	Pretest		Posttest		Difference	P-Value
	Mean	SD	Mean	SD		
Experiment	1,20	0,41	0,20	0,41	1,00	0,000
Control	1,13	0,35	0,73	0,88	0,4	0,000

It can be seen from Table 5. From the results of the analysis based on the output results, it is known that the experimental group experienced an increase in Hb levels (decreased incidence of anemia) with a significant level of 0.022 ($p<0.05$). The experimental group experienced an increase in Hb levels and reduced the incidence of anemia, but the control group experienced a decrease in Hb levels. Based on the table above, it can be interpreted that based on the independent samples t-test, it was found that there was an increase in the difference in Hb levels in the experimental group and a decrease in the control group, p-value=0.022 ($p<0.05$). This means that statistically it can be concluded that there is a significant difference in changes in Hb levels between the experimental group and the control group. Because the P value <0.05, H0 is rejected and H1 is accepted, meaning that there is an effect of snakehead fish (Channa Striata) extract

on increasing hemoglobin (Hb) levels in anemic postpartum mothers at Permata Bunda Hospital, Malang.

Pharmacological therapy to increase hemoglobin levels by administering blood supplement tablets. Blood supplement tablets that are taken require nutritional intake that can help absorption in the body. One thing that is needed is protein. Protein plays an important role in transporting iron in the body. Lack of protein intake will result in hampered iron transport resulting in iron deficiency. Iron deficiency causes hemoglobin (Hb) levels in the blood to be lower than normal, namely anemia (31). Snakehead fish has the highest albumin content compared to other fish. Albumin is a type of protein that plays an important role in transporting iron in the body. Lack of protein intake will result in hampered iron transport resulting in iron deficiency (32). post caesarean section anemic postpartum mothers definitely need high levels of protein and albumin, therefore the dose of snakehead fish extract required is also higher, namely > 750 mg, so in this study the dose of snakehead fish extract was increased to 1000 mg (33).

This is in line with research conducted by Umi Nur Fajri (2020), from the statistical results that have been carried out it can be concluded that 1000mg snakehead fish extract for 14 days there is a significant difference between the control and intervention groups, the increase in Hb levels in the intervention group was higher, namely 1.08gr% (26). Based on the paired t test statistical test, the results showed that there was P 0.001 in the intervention group and in the control group. Snakehead fish has a protein content of up to 25.5%. Protein plays an important role in transporting iron in the body. The absorption of iron consumed by postpartum mothers can be helped using snakehead fish extract. Snakehead fish also has an iron content of 0.09 in 100 grams of snakehead fish (34).

CONCLUSION

There was a difference in Hemoglobin (Hb) levels before and after being given snakehead fish extract in the experimental group and the control group at Permata Bunda Hospital Malang. There was an effect of Snakehead Fish Extract (Channa Striata) to Increased Hemoglobin Levels (Hb) on post caesarean section anemic postpartum mothers at Permata Bunda Hospital, Malang. In reducing the chemical effects of drugs, snakehead fish is highly recommended as the best alternative for postpartum mothers with anemia to increase low Hb levels.

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