

CUPPING THERAPY REDUCE TOTAL CHOLESTEROL LEVEL

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ABSTRACT

Hypercholesterolemia can cause atherosclerosis, which is a condition in which cholesterol and plaque accumulate in the artery walls. Plaque can block blood flow in the arteries to complications such as chest pain, heart attack, and stroke. The purpose of this study was to determine the effect of cupping therapy on total cholesterol levels in hypercholesterolemia patients. This was a quantitative study with The pre-experimental group was combined with the pre-test and post-test without control group. The total number of participants in this study was 20 at the Islamic Medication Clinic of Reflection and Cupping Samarinda using purposive sampling. Their total cholesterol levels were measured before and after they were cupped and using autocheck tools before cupping 5 minutes Cupping by the therapist for 30 minutes and 20 minutes after cupping check again. The Shapiro-Wilk test was used to determine normalcy. Paired T-Test was used in bivariate analysis. There was a significant effect of cupping therapy on total cholesterol levels in hypercholesterolemia patients, with a p value of $0.00 < 0.05$. According to the findings of the study, cupping therapy should be one of the therapies used to control total cholesterol levels, and it is hoped that other researchers will conduct additional research on cupping therapy. Cooperate with the laboratory so that total cholesterol, LDL, HDL, and triglyceride levels can be determined. This cupping research could also be expanded to include its benefits for other medications.

Keywords : *Cupping Therapy, Total Cholesterol, Hypercholesterolemia*

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INTRODUCTION

Hypercholesterolemia can cause atherosclerosis, which is a condition in which cholesterol and plaque accumulate in the artery walls. Along with the development of the times and modernization that continues to occur, it causes changes in people's patterns and lifestyles, especially in urban areas. One of these changes in pattern and lifestyle is the many fast food restaurants that sell foods that contain high cholesterol and contain little nutrition. Cholesterol in food substances can increase blood cholesterol levels resulting in hypercholesterolemia. Plaque can block blood flow in the arteries to complications such as chest pain, heart attack, and stroke (Civeira et al., 2022).

Hypercholesterolemia is a condition that happens when the amount of cholesterol in the blood rises above normal levels (Civeira et al., 2022). Hypercholesterolemia can be classified based on the cause, namely secondary hypercholesterolemia, which is caused by eating too much saturated fat, not getting enough exercise, being overweight, and having nephrotic syndrome, primary hypercholesterolemia is mainly caused by genetic factors, age, gender In patients with hypercholesterolemia, they do not show specific or distinctive symptoms. The symptoms encountered are frequent dizziness in the back of the head, tingling in the hands and feet, sore neck and shoulders, and some even complain of a pain on the left side of the chest like a stab. It's usually just known to have hypercholesterolemia when carrying out a health check or because there are other

complaints. Hypercholesterolemia must be watched out for because hypercholesterolemia has an impact or other diseases enter the body, such as coronary heart disease, hypertension, impaired liver function, and diabetes (Hapipah et al., 2022).

Based on the report of the World Health Organization (WHO) in 2012, there were 20 million deaths due to hypercholesterolemia or 35% of the total number of deaths. Data compiled by WHO in *Global status report on non-communicable diseases 2008* showed that the risk factor for hypercholesterolemia in women in Indonesia was higher, namely 37.2% compared to men, which was only 32.8%. One-third of Indonesia's population is at high risk of developing arterial disease. Excess cholesterol can occur due to lack of exercise or consuming foods with high cholesterol content, but this condition can also occur due to heredity (Syahruramdhani et al., 2021).

According to the 2018 Riskesdas, in residents > 15 years old, abnormal total cholesterol was found in the borderline category of 200–239 mg/dl and high > 240 mg/dl of 35.9%, low HDL 22.9%, non-optimal LDL with the nearoptimal combined category. -high borderline 60.3% and high-very high category 15.9%, abnormal triglycerides with high borderline category 13.0% and high-very high category 11.9%. Cause of the increase in cases: The habit of consuming unhealthy foods (high levels of saturated fat), Lack of exercise or activity, Smoking habit, consumption of alcoholic beverages, Obesity, Have certain diseases such as hypertension or high blood pressure, diabetes, underactive thyroid gland (hypothyroidism), liver disease, and kidney disease, and Aging which triggers atherosclerosis also increases. From the data at the Islamic reflection and cupping clinic, it was found that there were 155 people who did cupping with cholesterol, the number of hypercholesterolemia was not known because there was no examination of total cholesterol levels with a glukotest tool and to find out total cholesterol levels in the blood > 240 mg/dl then in do a glucose check (Fikri, n.d.)

Pharmacological treatment of hypercholesterolemia is by administering various normolipidemic drugs including statins, fibrates, resins, inhibitors or selective absorption of cholesterol and nicotinic acid. Pharmacological treatment depends on client considerations including costs, demographic characteristics, comorbidities, and quality of life. Treatment for hypercholesterolemia is currently ineffective because almost 70% of hypercholesterolemic patients in Indonesia fail to achieve the target cholesterol level according to treatment guidelines, besides that the price of the drug is relatively expensive, recurrences occur frequently and cause dangerous sideeffects (Syokumawena & Pastari, 2021).

One of the non-pharmacological treatments or complementary and alternative therapies that are in great demand by the people of Indonesia is Cupping/*Al-Hijamah/Cupping Therapy*. Prophet Muhammad SAW once said "Healing can be obtained in three ways, namely drinking honey, hijamaah (cupping), and hot iron. I do not encourage My people with a hot iron." (H.R. Bukhari-Muslim). Another hadith narrated by Tarmidzi states that Rasulullah SAW said, "I did not walk past a group of angels on the night I was in Isra'kan, but they all told me, "O Muhammad, you must be cupping. The goal of cupping or hijamah is to get rid of poisons or toxins in the blood by making thin cuts or small holes on the surface of the skin. Cupping therapy or hijamah functions to remove dirty blood (Guzel, 2020). Cupping therapy is given at meridian points to reduce hypercholesterolemia. Giving cupping therapy at the right meridian points will increase the number of leukocytes, lymphocytes and the reticulo-endothelial system, release ACTH, cortisol, endorphins, enkephalins and other humoral factors which also cause anti-inflammatory effects, decrease serum triglycerides, phospholipids, cholesterol total, especially LDL cholesterol, stimulates lipolysis of fat tissue and normalizes glucose levels in the blood (Fikri, n.d.).

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because there was no examination of total cholesterol levels with a glukotest tool and to find out total cholesterol levels in the blood > 240 mg/dl then Do a glucose check. Based on the data obtained from the description above, the researcher is interested in researching the Effect of Cupping Therapy on Reducing Total Cholesterol Levels in Hypercholesterolemic Patients at the Islamic Reflexology and Cupping Clinic in Samarinda.

RESEARCH METHODS

This study uses a research design *pre experiment* by using a plan *one grup pretest and posttest* without a comparison group (control). The sample in this study were 20 respondents who received cupping therapy. Sampling using technique *purposive sampling*. After getting respondents who fit the inclusion criteria (no other therapy, Hypercholesterolemia and high cholesterol levels Cholesterol > 240 mg/dl, Willing to be research subject). Exclusion criteria (suffer from diabetes mellitus, open infection with chickenpox, suffer from hemophilia, suffer from blood cancer, suffer from anemia and suffer from hypotension, pregnant women and women who often miscarry) the researcher then explained the research objectives. After the respondent signs *informed consent* and the consent sheet, the patient's cholesterol is checked using a tool *autocheck* before cupping 5 minutes and 20 minutes after cupping check again. Bivariate analysis used in this study is to use *uji T*. This research was carried out at the Samarinda Islamic Reflexology and Cupping Clinic on March 19-April 11.

RESULTS AND DISCUSSION

The results obtained from the study are as follows:

Univariate analysis

Table 1. Characteristics of Respondents

| No | Age | f | % |
|--------------|---------------|-----------|------------|
| 1 | 25 - 33 Years | 1 | 5 |
| 2 | 34 - 42 Years | 3 | 15 |
| 3 | 43 - 51 Years | 9 | 45 |
| 4 | 52 - 60 Years | 6 | 30 |
| 5 | 61 - 69 Years | 0 | 0 |
| 6 | 70 - 78 Years | 1 | 5 |
| Total | | 20 | 100 |

So that the most respondents aged 43-51 years were 9 people (45%). Total cholesterol levels increase with age. This does not occur spontaneously but has started since childhood and was only discovered after reaching the age of more than 40 years. This is almost the same as the research conducted by Afiah & Rahayuningsih (2014) which showed that women and men aged 40-50 years have the same metabolism. In addition, at the age of 40-50 years is the age when the occurrence of metabolic syndrome begins to increase. This mechanism has something to do with LDL receptor activity. Increasing age is in line with reduced LDL receptor activity. This results in many LDL levels that are not captured by LDL receptors, causing LDL levels to increase and it will stay in the blood longer. High levels of cholesterol in the blood indicate high levels of total cholesterol in the blood, where LDL cholesterol and total cholesterol levels have a high correlation (Afiah & Rahayuningsih, 2014). In addition there are other factors, namely uncontrolled food factors are also supporting factors, this is because at that age they do not take care of their food consumption. So it is very possible for cholesterol in food to have very high levels.

Table 2. Characteristics of Respondents

| No | Gender | f | % |
|--------------|--------|-----------|------------|
| 1 | Man | 12 | 60 |
| 2 | Woman | 8 | 40 |
| Total | | 20 | 100 |

So that the most respondents were male as many as 12 people (60%). Basically, men have a higher risk of developing hypercholesterolemia because the male hormone estrogen is lower and women have a higher estrogen hormone, so the risk is smaller. Estrogen hormone which functions as a protector from the presence of plaque in blood vessels. However, men and women have the same risk of developing hypercholesterolemia, but the risk of experiencing hypercholesterolemia becomes higher in women when women have gone through menopause. The results of this study are in line with research conducted by (Rini, Karim & Novayelinda, 2014) which shows that the majority of respondents are male. Basically, men have a higher risk of developing hypercholesterolemia because the male hormone estrogen is lower and women have a higher estrogen hormone, so the risk is smaller. Estrogen hormone which functions as a protector from the presence of plaque in blood vessels. However, men and women have the same risk of developing hypercholesterolemia, but the risk of experiencing hypercholesterolemia becomes higher in women when women have gone through menopause (Güzel, 2020)

Table 3. Characteristics of Respondents

| No | Education | f | % |
|--------------|--------------------|-----------|------------|
| 1 | Elementary School | 2 | 10 |
| 2 | Junior High School | 2 | 10 |
| 4 | Senior High School | 7 | 35 |
| 5 | College/university | 9 | 45 |
| Total | | 20 | 100 |

So that the most respondents were in PT education (Higher Education), namely as many as 9 people (45%). A higher level of education can increase a person's ability and knowledge in implementing and maintaining a healthy lifestyle. However, in this study the results showed that the education level of the respondents was mostly 9 people (45%). This is because the people who go for treatment at the Samarinda Islamic Reflection and Cupping Clinic are on average highly educated people and aware of the health and benefits of cupping.

Table 4. Characteristics of Respondents

| No | Work | f | % |
|--------------|------------------|-----------|------------|
| 1 | Housewife | 6 | 30 |
| 2 | Private-employee | 7 | 35 |
| 3 | Self-employed | 4 | 20 |
| 4 | Civil servant | 3 | 15 |
| Total | | 20 | 100 |

So that most respondents in private jobs as many as 7 people (35%).activity and high work demands by private employees, where they have to work in accordance with the demands of time and work that is dense so that it can cause someone to become stressed. Stress can interfere with the way the body metabolizes fat which ends in soaring LDL cholesterol levels (Rosyanti et al., 2020).

Table 5. Characteristics of Respondents

| No | Smoking history | f | % |
|--------------|-----------------|-----------|------------|
| 1 | Smoking | 4 | 20 |
| 2 | Do not smoke | 16 | 80 |
| Total | | 20 | 100 |

So that the most respondents are non-smokers as many as 16 people (80%). Line with research conducted by (Mukaromah, 2017) which shows that the majority of respondents have never smoked. This shows that basically there is a relationship between smoking status and the incidence of hypercholesterolemia. However, in this study the average respondent did not smoke. Therefore, in this study it can be assumed and according to interviews that hypercholesterolemia occurs not because of smoking status, but there are several other factors that can affect blood cholesterol levels besides smoking, namely due to consuming less vegetables and fruit, obesity, diabetes, and consuming coffee. excessive.

**Table 6. Frequency distribution for comparison of average cholesterol levels
 The total is based on the time before and after being given cupping therapy**

| Total cholesterol | N | Mean | Std. Deviation | Std. Error Mean |
|--------------------------|-----------|--------------|----------------|-----------------|
| Total Cholesterol Before | 20 | 264,20 | 14,326 | 3.203 |
| Total Cholesterol After | 20 | 218,05 | 18,214 | 4.073 |
| Difference | 20 | 46,15 | | |

There is a difference in changes in the mean value of measuring total cholesterol levels before and after the cupping therapy treatment of 46.15 mg/dl. With the mean value of total cholesterol before and after, namely 264.20 to 218.05. Changes in the average value in measuring total cholesterol levels indicate that there is a positive effect of cupping therapy on changes in total cholesterol levels in patients with hypercholesterolemia. Someone who is at risk for high cholesterol levels is someone who adopts a diet that contains high levels of saturated fat (meat, butter, cream, and cheese). Moreover, for people who consume these foods very often and are not accompanied by a healthy lifestyle, one of which is exercise (Kusuma, 2013). The opening of the skin barrier affects the skin's ability to get rid of waste. This is done by getting rid of lipids and substances that are both water-loving and water-hating, like cholesterol, which is a type of lipoprotein.

Bivariate Analysis

**Table 9. Statistical Results of Paired T Test Analysis of Total Cholesterol Levels
 Before and After Cupping Therapy Treatment**

| How Much Cholesterol Total | N | Mean | SD | SE | 95% CI | | T | P- value |
|----------------------------|----|-------|--------|-------|--------|--------|--------|----------|
| | | | | | Lower | Upper | | |
| Before and after | 20 | 46,15 | 12,922 | 2,889 | 40,102 | 52,198 | 15,972 | 0,000 |

From the table above, it was found that T count was 15.972 > T table (2.093) with two comparisons before and after being given treatment, it was obtained a value of P = 0.000 or P < 0.05, which means that there was a significant effect on total cholesterol levels before and after cupping therapy. The way cupping therapy lowers total cholesterol levels is by opening the skin barrier. This changes the way the skin gets rid of waste, including lipids and substances that are both water-loving and water-hating. Cholesterol is an example of a lipoprotein, which is a part of the blood.

This shows that statistically there is a significant effect of the cupping therapy given on total cholesterol levels before and after the intervention, from 20 respondents. And this is also in accordance with other studies, that cupping therapy treatment can reduce total cholesterol levels, especially in hypercholesterolemic patients. In addition, cupping therapy is performed on the meridian points to lower cholesterol levels. Meridians are a system of longitudinal and transverse channels throughout the body that are medically invisible but are proven by radioactive technetium and are also studied in acupuncture. This system connects the surface of the body with the internal organs, between organs and other supporting tissues so that the system forms a unit that reacts simultaneously if there is stimulation from the skin (Alipour et al., 2022).

So, giving the right meridian points in cupping therapy causes processes in the capillaries and arterioles, increases in leukocytes and lymphocytes, releases ACTH, enkephalin, cortisone, endorphins, and other humoral factors that have anti-inflammatory effects, lowers serum triglycerides, phospholipids, LDL, and total cholesterol, stimulates lipolysis of fat tissue, and normalizes blood glucose (Al-Bedah et al., 2019).

CONCLUSION

These results indicate that cupping therapy has a significant effect on changes in total cholesterol levels in hypercholesterolemia.

SUGGESTIONS

Health services: Nurses can apply cupping therapy, Education: scientific discourse and references for carrying out further studies especially those concerning hypercholesterolemia, and Collaborate with laboratories to determine total cholesterol, LDL, HDL and triglyceride levels. Cupping research can also be expanded to include its benefits for other treatments such as the value of leukocytes, lymphocytes, cortisol endorphins et cetera.

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