Volume 20 Issue 33
Originally issued as L1



Global Journal of Medical Research: L
Nutrition & Food Science
Volume 20 Issue 1 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

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Keywords: *cork fish extract, and hypoalbumin pain.*

GJMR-L Classification: *NLMC Code: WB 400*



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Effectiveness of Giving Cork Fish Extracts to Increasing Albumin Levels of Hypoalbumin Patients in RSUD Dr. Zainoel Abidin

Saiful Bakri [α] & Wiqayatun Khazanah [σ]

Abstract- Albumin is used as the best predictor of healing patients and is one of the important parameters in measuring nutritional status in patients with acute or chronic diseases. Giving food therapy, a source of protein albumin serves to increase albumin in the blood to be good so that the patient becomes healthy faster so that the period of care or length of stay in the hospital becomes shorter. This research aimed at observing the effect of giving cork fish extracts to the patient's hypoalbuminemia at General Hospital of Dr. Zainoel Abidin (RSU-ZA) Banda Aceh. This research is an experimental pre-test posttest one group design. Initial examination is examining the albumin levels in patients with hypoalbuminemia, then given 100 ml cork fish extract. Therapy for administration was conducted for 7 days then re-examined the levels of albumin. The sample was taken by purposive sampling. The results indicated that: blood albumin levels in patients with hypoalbuminemia, the mean initial blood albumin level in the total subjects was 2.79 ± 0.16gr / dl with values ranging from 2.52 - 2.99 gr / dl, whereas according to sex in male sex subjects male albumin levels were not significantly different (2.79 ± 0.16 gr / dl) and (2.78 ± 0.19gr / dl), this indicates that early albumin levels in both males and females had levels of same blood albumin. Conclusion: Blood albumin level in patients with hypoalbuminemia before being given cork fish extract 2.79gr / dl and after being given cork fish extract 2.97gr / dl. There is an effect of giving cork fish extract to increasing blood albumin levels in patients with hypoalbuminemia. The level of albumin increased by 0.31 gr / dl by consuming cork fish extract 3 times a day in one week.

Keywords: cork fish extract, and hypoalbumin pain.

I. Introduction

Albumin is a protein in human plasma that dissolves in water and settles in heating and the highest concentration of protein in blood plasma1. The function of albumin includes maintaining oncotic pressure, carrying thyroid hormones, fatty acids, bilirubin, drugs and as an acute phase inflammatory protein, as the body's immune response to infection, so albumin plays an important role in the healing process2. Low albumin levels slow down the body's immune response in facing of infection so that the healing process becomes too late. Therefore, inadequate nutrition will slow the healing process of patients3.

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In hypoalbuminemia patients the levels of albumin in their blood have decreased. This is because albumin can dissolve during the surgical process or while healing the patient. This is because albumin which was previously produced in the endoplasmic reticulum of the liver in extravascular distribution in the skin and muscle tissue is much wasted due to various diseases4. These patients with hypoalbumin do not immediately get good treatment which will cause various problems. Patients with low blood albumin levels have a long risk of recovery and can cause various risks of infection5. Longer stays will add to various problems. In addition to nosocomial infections that might occur, in terms of costs that must be borne by patients will also increase. In addition, in terms of psychology, patients who do not recover will make patients and families panic and worry, which in turn will also cause various problems6.

To increase albumin levels in blood in hypoalbuminemia patients can be done by therapy of foods that are high in albumin content both in the form of food formulas originating from manufacturers (commercial formulas) or obtained naturally7. Cork fish is a food source that is obtained from natural products and has a very good nutrient content for the body. Cork fish contains albumin which is one of the proalbumin proteins. Proalbumin is a basic substance that forms albumin compounds. Giving cork fish or protein extract can increase albumin levels in the blood and help cure patients. Giving 2 kg of cork fish to cook every day to patients will increase their albumin to normal. The administration of cork fish extract for 10-14 days showed an increase in albumin up to 0.6 to 0.8 g / dl8.

Although other fish are also known as a good source of protein for the body, cork fish are known to have a higher type of nutrient content. The protein content of cork fish is 25.5%, higher than the protein content of milkfish (20.0%), carp (16.0%), snapper (20.0%), and sardines (21, 1%) 9.

Therefore, a study is needed to see the effectiveness of cork fish extract to increase albumin levels in the blood in hypoalbuminemia patients. The effort to provide food therapy, a source of protein for albumin, functions to increase albumin in the blood so that patients become healthy faster so that the length of staying in hospital is shorter.

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II. Research Methods

a) Place Design and Time of Research

This type of research is an experimental pre-test posttest one group design. In this study an initial and final examination of albumin levels was carried out in patients with hypoalbuminemia, and then 100 ml of cork fish extract was given. Therapeutic administration was done for 7 days then re-examined the albumin level10.

The study was conducted at the Zainoel Abidin General Hospital in Banda Aceh for 3 months, namely from July to September 2018. The population in this study was all patients who experienced hypoalbuminemia during the study. The subjects in this study were taken by purposive sampling with the following conditions:

a. Patients hospitalized
b. Patients with good awareness and getting oral food.
c. Do not get albumin infusion through a vein.

b) Data Analysis

Univariate analysis used to find a descriptive of the data collected especially basic data about the mean, median, standard deviation, and albumin levels.

Bivariate analysis was carried out to see differences in initial hemoglobin levels, final hemoglobin and changes in blood albumin levels before and after intervention in the form of cork fish extract using Paired T-test. The normality test for the initial albumin level data, the final albumin level was carried out using the Kolmogorov-Smirnov test.

III. Results and Discussion

a) Characteristics of Subjects

The results of data collection, subjects were male sex (72%) than women (28%). To be clearer can be seen in Figure 2. It shows that the average of the subject's age is 55 years with the lowest 27 years and the highest is 88 years. If seen by sex, the average age of the male sex subject is 58 years, which is distributed from the lowest age of 27 years and the highest is 88 years. Whereas in the female group, the average age is 47 years, which are distributed from the age of 33 years to 70 years.

For the distribution of the age group most subjects are in the group 41 - 50 years and 51 - 60 years and the lowest is in the age group 20-30 and 71 - 80 years, to be clearer.

Analysis of the Results of Measurement of Blood Albumin Levels

The results of examination of blood albumin levels in patients with hypoalbuminemia, the mean initial blood albumin levels in the total subjects were 2, 79 ± 0.16 gr / dl with values ranging from 2.52 - 2.99 gr / dl, whereas according to gender in male sex subjects there was no significant difference in albumin levels (2.79 ± 0.16 gr / dl) and (2.78 ± 0.19gr / dl), indicating that the initial albumin levels in both men and women had the same blood albumin levels.

Table 1: Mean Distribution of Blood Albumin Levels by Subject Group

Blood Specimen	Average ± of Standard Deviation (gr/dl)		
	Male	Female	Total of the sample
Initial Albumin	2,79 ± 0,16	2,78 ± 0,19	2,79 ± 0,16
Final Albumin	3,02 ± 0,32	2,87 ± 0,28	2,97 ± 0,31

While the results of examination of blood albumin levels in patients with hypoalbuminemia after intervention, the mean final blood albumin level in the total subjects was 2.97 ± 0.31gr / dl with a range of 2.42 - 3.73 gr / dl, whereas according to gender on the subject male albumin levels were slightly higher levels (3.02 ± 0.32gr / dl) compared to women (2.87 ± 0.29 gr / dl). However, it is not much different from the average albumin level overall of the total subjects and has a tendency to increase albumin levels in both men and women after intervention.

b) Analysis of Research Results Levels of Intervention Group Albumin

Table 3: Mean Distribution of Blood Albumin Levels (gr / dl) Intervention Group

Blood Albumin	Mean	SD	95% CI	*Mean difference*	*P. value*
Initial Inspection	2,79	0,16	0,07-0,27	0,42	0,001
Final Inspection	2,97	0,30			

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Distribution of blood albumin levels in the intervention group between before and after intervention in patients with hypoalbuminemia.

Based on table 1. the results of examination of the subject's serum albumin levels in both male and female at the ZainoelAbidin General Hospital in Banda Aceh had albumin levels below the normal value (<3.5 gr / dl) which was an average value of 2.79 ± 0.15 gr / dl. Hypoalbumin is an albumin level that is low or below the normal value or a condition where the serum albumin level is <3.5 g / dl. Hypoalbumin reflects an inadequate supply of amino acids from proteins, thus interfering with the synthesis of albumin and other proteins by the liver. The results showed that all of the respondents had less albumin levels at the beginning of the examination in both male sex (2.79 ± 0.16 gr / dl) and in women (2.78 ± 0.19 gr / dl). Lack of albumin levels experienced by the subject, will be a problem if no immediate action is taken because the immune response in the body will be reduced so that it can slow healing and will facilitate the emergence of other infectious diseases. Albumin has an important role as a carrier of certain chemicals including drugs through the system circulation, transporting a variety of insoluble material in water (bilirubin, fatty acids, and several types of hormones), maintaining plasma oncotic pressure, as the body's defense (control and antioxidant functions), helping metabolize nutrients and accelerating cell tissue recovery.

One way to increase the amount of albumin in the body is by consuming foods high in protein. Extreme fish cork is a food that contains a lot of albumin. Albumin itself is one of the elements of protein which has the character as proalbumin. Proalbumin is a basic constituent of albumin compounds. So, by consuming cork fish extract, it can increase the amount of albumin in the liver. In table 2 shows the mean blood albumin concentration given cork fish extract increased blood albumin levels from (2.79 ± 0.16 gr / dl), to (2.97 ± 0.30 gr / dl).

In this study it was proven that cork fish extract can increase blood albumin levels in patients with hypoalbuminemia. Biochemically there was an increase in albumin of 0.42 mg / dl by consuming 150 ml of cork fish extract a day in one week at the hospital. Besides being easily obtained, consuming cork fish extracts also saves costs compared to using transfusion / infusion albumin at a much higher price. This result is in line with the results of a study by samsiatun NH and female students in 2015, namely the addition of cork fish extract juice to albumin and Hb levels in patients with hypoalbuminemia p> 0.002. Giving cork fish extract for a week can increase blood albumin levels by 0.52 gr / dl in patients with hypoalbuminemia9

This study supports previous research (Prastowo, et al. 2014) which states that the results of this study indicate that patients with pulmonary TB with hypoalbumin supplementation of cork fish extract can increase serum albumin levels and cork fish extract can also be used to increase the healing power of patients with hypoalbumin. Nutritional factors such as low food intake, anorexia and increased catabolism are the causes of a decrease in the patient's albumin levels. Giving foods containing proteins with high biological values increases albumin levels. Provision of cork fish containing prelbumin can increase albumin levels in the blood11.

IV. Conclusions

1. Blood albumin level in patients with hypoalbuminemia before being given cork fish extract is 2.79gr / dl.
2. Blood albumin level in patients with hypoalbuminemia after being given cork fish extract is 2.97gr / dl.
3. There is an effect of giving cork fish extract to increasing blood albumin levels in patients with hypoalbuminemia at RSU-ZA Banda Aceh. Increase in albumin by 0.31 gr / dl by consuming cork fish extract 3 times a day in one week.

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