Research Article

Efficacy of Channa Striata Extract Capsule (Vipalbumin®) for Serum Albumin Level and Wound Healing Postradical Hysterectomy in Cervical Cancer Patients

Efektivitas Konsumsi Kapsul Ekstrak Ikan Gabus terhadap Kadar Albumin Serum dan Penyembuhan Luka Pascahisterektomi Radikal Pasien Kanker Serviks

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Abstract

Objective: To determine the efficacy of Channa striata extract on serum albumin level and wound healing after radical hysterectomy in cervical cancer patients in Mohammad Hoesin Hospital Palembang.

Methods: A clinical trial was conducted in Mohammad Hoesin Hospital Palembang during period of January – September 2019. Samples were cervical cancer patients undergoing radical hysterectomy. Serum albumin level was measured before surgery, after surgery, and after the administration of *Channa striata* extract capsule. Efficacy of the supplement was analyzed with SPSS version 20 using paired t-test.

Result: Twenty-eight cervical cancer patients undergoing radical hysterectomy who fulfilled inclusion criteria were obtained. Majority of patients were aged between 40-49 years old (89.3%), normoweight (39.3%), and lived in rural area. Mean duration of surgery was 154.46 ± 40.47 minutes. Serum albumin level before surgery, after surgery and after the administration of Channa striatus extract were 3.4 ± 0.61 g/dL, 2.91 ± 0.42 g/dL, and 3.11 ± 0.49 g/dL, respectively. There was a statistically significant difference between serum albumin level before and after the surgery (p=0.000). However, no statistically significant difference was found between serum albumin level after surgery and after administration of Channa striata extract capsule (p=0.750).

Conclusions: There was no significant difference between serum albumin level after surgery and after administration of Channa striata extract capsule.

Keywords: cervical cancer , channa striatus extract , radical hysterectomy, serum albumin level.

Abstrak

Tujuan: *Untuk mengetahui efikasi ekstrak Channa striata terhadap kadar albumin serum dan penyembuhan luka pasca histerektomi radikal pada pasien kanker serviks di RS Mohammad Hoesin Palembang.*

Metode: *Uji klinis dilakukan di RS Mohammad Hoesin Palembang selama periode Januari – September 2019. Sampel adalah pasien kanker serviks yang menjalani histerektomi radikal. Kadar albumin serum diukur sebelum operasi, setelah operasi, dan setelah pemberian kapsul ekstrak Channa striata. Khasiat suplemen dianalisis dengan SPSS versi 20 menggunakan uji-t berpasangan.*

Hasil: *Didapatkan 28 pasien kanker serviks yang menjalani histerektomi radikal yang memenuhi kriteria inklusi. Mayoritas pasien berusia antara 40-49 tahun (89,3%), normoweight (39,3%), dan tinggal di daerah pedesaan. Durasi rata-rata operasi adalah 154,46 ± 40,47 menit. Kadar albumin serum sebelum operasi, setelah operasi dan setelah pemberian ekstrak Channa striatus berturut-turut adalah 3,4 ± 0,61 g/dL, 2,91 ± 0,42 g/dL, dan 3,11 ± 0,49 g/dL. Ada perbedaan yang signifikan secara statistik antara kadar albumin serum sebelum dan sesudah operasi (p=0,000). Namun, tidak ditemukan perbedaan yang signifikan secara statistik antara kadar albumin serum setelah operasi dan setelah pemberian kapsul ekstrak Channa striata (p=0,750).*

Kesimpulan: *Tidak terdapat perbedaan yang bermakna antara kadar albumin serum setelah pembedahan dan setelah pemberian kapsul ekstrak Channa striata.*

Kata kunci: *ekstrak Channa striatus, histerektomi radikal, kadar albumin serum, kanker serviks.*

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INTRODUCTION

Surgical wound is categorized into 4 classes, i.e. clean wound, clean-contaminated wound, contaminated wound and infected wound. Post-operative wound care will provide faster wound healing with better aesthetic and functional results. Patient's preoperative condition also plays role for wound healing, this include nutritional status, medical comorbidity and certain habits. Nutritional support and certain formula can modulate immune system and eventually will reduce postoperative complications and length of hospital stay.[1,2]

Preoperative serum albumin is one of the prognostic factors for postoperative complications and also associated with impaired nutritional status. The major physiological functions of serum albumin are the regulation of both plasma oncotic pressure and capillary membrane permeability, and ligand binding and transport. Therefore, low serum albumin must be corrected. [2-4]

Snake head fish *(Channa striata)* extract is a cheaper alternative for intravenous albumin. Several studies have been conducted to investigate efficacy of Channa striata extract in wound healing. However, there was no sufficient data to support the efficacy of *Channa striata* extract in post radical hysterectomy wound healing.[5]

The aim of this study is to assess the efficacy of *Channa striata* extract on serum albumin level and wound healing after gynecological surgery in RSUP Dr Moh Hoesin, Palembang.

METHODS

A clinical trial was performed in Dr. Mohammad Hoesin Hospital Palembang during period January – September 2019 using consecutive sampling method. Women with cervical cancer who had undergone radical hysterectomy in Dr. Mohammad Hoesin Hospital Palembang were included in this study. The inclusion criteria were women aged between 20 and 65 years old with postoperative serum albumin level less than 3.5 g/dL, had agreed to participate in the study and signed informed consent. Exclusion criteria were metabolic disorder such as diabetes mellitus and liver cirrhosis, patient with history of coagulopathy, hypersensitivity to or was contraindicated to receive albumin. All data were recorded and analyzed using SPSS ver 20.0 by paired t-test and multivariate binary logistic regression with 95% confidence intervals. The protocol of this study had been approved by Ethical Committee of Medical Faculty of Sriwijaya University and Dr. Mohammad Hoesin Hospital Palembang.

RESULTS

During the research period, 28 samples were included in this study. Mean age of the samples was 48.14 ± 8.09 year-old. Most samples were in the age group 40 – 49 year-old (n=25, 89.3%). Most patient lived in rural area (n=19, 67.9%). Detailed baseline characteristics was described in Table 1.

Table 1. Baseline Characteristics

Characteristics	n	%
age (year-old)		
mean ± SD	48.14 ± 8.09	
median (Min –Max)	48 (27 – 60)	
age (year-old)		
20 - 29	1	3.6
30 - 39	2	7.1
40 - 49	25	89.3
Educational background		
Elementary to junior high school	9	32.1
Senior high school or higher	19	67.9
Residence		
Urban area	9	32.1
Rural area	19	67.9
Bodyweight (kg)		
mean±SD	55.04±7.88	
median (min-max)	54.5 (35-73)	
Weight (m)		
mean±SD	1.53±0.47	
median (min-max)	1.53 (1.45-1.62)	
Body Mass Index (kg/m2)		
mean±SD	23.35±2.94	
median (min-max)	23.34 (15.55-29.99)	
Body Mass Index (kg/m2)		
Underweight	2	7.1
Normoweight	11	39.3
Overweight	7	25.0
Obese	8	28.6
Duration of surgery (minutes)		
mean±SD	154.46±40.47	
median (min-max)	150 (90-240)	
Duration of surgery (minutes)		
60 – 120	9	32.1
121 – 180	14	50.0
181 – 240	5	17.9

We measure serum albumin level at three points, before surgery, after surgery and after administration of Channa striata extract capsule (Vipalbumin®). Before surgery, serum albumin level was 3.4 ± 0.61g/dL (2.3-4.4 g/dL). Postoperative serum albumin level decreased to 2.91 ± 0.42 g/dL (2.2-3.5 g/dL). There were 92.9% (n=26) patients who showed a decrease of serum albumin level after surgery. There was a statistically significant difference between

serum albumin level before and after the surgery (p=0.000)

Table 2. Comparison of Serum Albumin Level before and after Surgery

		Serum albumin level (g/dL)	*P-value*
Before surgery (3.4 ± 0.61)	After surgery	2.91 ± 0.42	0.000
	After administration of Vipalbumin®	3.11 ± 0.49	0.001

Wilcoxon Test, p = 0.05

After administration of Vipalbumin®, serum albumin level increased to 3.11 ± 0.49 g/dL (range 2.1-3.8 g/dL). There was a statistically significant difference between serum albumin level before surgery and after administration of Vipalbumin® (p=0.001).

Serum albumin level was compared before surgery and after administration of Vipalbumin®. Serum albumin level after surgery was 2.9 ± 0.42 and after administration of Vipalbumin® was 3.11 ± 0.49. There was no statistically significant difference between serum albumin level before surgery and after administration of Vipalbumin (p=0.750).

Table 3. Serum Albumin Level

Characteristic	**Time**		***P-value***
	after surgery	**after administration of Vipalbumin**	
Serum albumin level, mean ± SD, g/dL	2.91 ± 0.42	3.11 ± 0.49	0.750[a]

DISCUSSION

The oldest age was 60 year-old and the youngest was 27 year-old; the median was 48 year-old. This finding was consistent that reported incidence of cervical cancer was found highest in age range of 45-59 year old.[6]

Mean BMI was 23.34 kg/m2. Most patients were normoweight (39.3%). Based on Clark's study, BMI was correlated with cervical cancer prognosis. Extreme BMI (underweight, overweight and obesity) in cervical cancer patients was correlated with poor survival.[7]

Mean surgery duration was 154.46±4.6 minutes. Surgery can cause metabolic stress response and contribute to complications, healing time and length of hospital stay. There was negative correlation between serum albumin level before surgery and surgery duration.[8,9]

Preoperative serum albumin level mean was 3.4±0.61 with range 2.3-4.4 g/dL. After surgery, serum albumin level decrease to 2.91±0.42 with range 2.2-3.5 g/dL, most sample (n=26, 92.9%) experienced lower serum albumin level after the surgery. There was a statistically significant difference between preoperative serum albumin level and postoperative serum albumin level (p=0.000). This result is consistent with their report.[8,10]

Serum albumin level after administration of snake head fish extract were increased (mean 3.11±0.49). There was no significant difference between serum albumin level after surgery and after administration of snake head fish extract (p=0.750). This finding is contradicted a significant difference between serum albumin level before and after administration of snake fish head in patients underwent emergency laparotomy. Study samples were patients with solid organ rupture and bowel perforation while our study samples were cervical cancer patients. Lower serum albumin level was found in cancer and cachexia cancer.[11,12]

CONCLUSION

There was no significant difference between serum albumin after surgery and after administration of Channa striata extract capsule.

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