

Differences in the Effect of Various Intervention Cream Sprouts (*Phaseolus radiatus*) Extract to Wound Healing Process on Postpartum Mother

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ABSTRACT

Background: Midwifery care in the puerperal needed to prevent incidence of infection the other complication in puerperal, especially with perineal rupture. Application of using ointment with sprouts extract helps the perineal wound healing process after childbirth. One of the natural alternative ingredient to help the wound healing, easy to get, and can avoid the risk of organ damage cause of consumption anti-inflammatory drugs.

Methods: Direct observation by measuring the wound healing process parameters include the level of pain using a visual analog scale, percentage of wound size with a measuring tape appliance, and marked their wounds heal epithelial tissue (all parameters are measured every day, from day to day 10 days). Interventions using self-made bean sprouts extract. The study was conducted in 52 puerperal women were divided into four groups: Group intervention same dose of 0%, 2.5%, 5%, and 10%. Analysis of data using Kruskal–Wallis H-test and *post-hoc* using the Mann–Whitney U ($P < 0.05$).

Results: Intervention cream sprouts extract at a intervention dose of 10% can heal the wounds of the perineum on 5 days, and there are differences in the effect known significant values <0.05 at the parameter level of pain with the control group, the percentage parameters of wound size reduction with the control group and old parameters of wound healing.

Conclusions: From this research note, there are differences in the effect of several doses ointment bean sprouts extract (*Phaseolus radiatus*) on wound healing of the perineum in postpartum mothers.

Key words: Healing perineum wound, Postpartum mother, Sprouts (*Phaseolus radiatus*) extract

INTRODUCTION

The government through the Ministry of Health has provided the basic policy on maternal health in the postpartum period is at least 4x the visit at the time of parturition, which is the first visit 6-8 h postpartum, second visit 6 days postpartum, third visit 2 weeks postpartum, and fourth visit 6 weeks postpartum.¹

Healthy Indonesia program implemented by the three main pillars of health paradigm, strengthening health services, and national health insurance: (1) pillar's health paradigm in health pengarusutamaan do with strategy development, strengthening of preventive and promotive community empowerment; (2) strengthening health services carried out with strategies for

improving access to health services, the optimization of the referral system, and improving the quality of health care, using a continuum of care approach and risk-based interventions.²

Green beans including vegetable food sources are readily available and cheap. Green beans also have several advantages compared with other nuts, namely, antitrypsin content is very low, most easily digested, and the smallest influence flatulence. Sprouts are a new small plants grown from seed nuts disemikan or through germination. Sprouts are made from green beans called bean sprouts. Sprouts contain many active substances that are beneficial because they contain among others: Vitamin C is a vitamin that is used in the synthesis of collagen,

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thiamin, riboflavin, niacin, pantothenic acid, Vitamin B6, folate, β -carotene; Vitamin A plays a role in cell differentiation and strengthens the bonds of collagen; Vitamin E (α -tocopherol); and Vitamin K. Minerals found in bean sprouts are calcium (Ca), iron (Fe), magnesium (Mg), phosphorus (P), potassium (K), sodium (Na), zinc (Zn), copper (Cu), manganese (Mn), and selenium (Se). Essential amino acids meaningful contained in bean sprouts, among others: Tryptophan, threonine, fenilalanin, methionine, lysine, leucine, isoleucine, and valine. Sprouts also have some antioxidant content and related substance, namely, phytosterols antioxidants, Vitamin E (α -tocopherol), phenols, and some minerals (selenium, manganese, copper, zinc, and iron). Based on nutritional foods of color: White, sprouts contain flavonoid are a substance containing antioxidant protection to cell structures from damage, strengthen the function of Vitamin C, preventing inflammation, and even antiviral and antibiotic. In addition to the content of the bean sprouts also contain alpha-linolenic acid, which acts as an anti-inflammatory.⁶

Research conducted by Adi et al., that extract of bean sprouts, has the effect nefroprotektif in wistar rats induced paracetamol toxic dose by protecting kidney cells from damage caused by free radicals through a mechanism of antioxidants of active compound contained therein.⁷

Based on research by Iqbal, extract of bean sprouts can reduce the damage to the kidney cells of mice induced a dose of paracetamol and an increase in bean sprouts extract may enhance the effects of protection against damage to the kidney cells of mice.⁸

The purpose of this study is to prove the difference in the effect of various interventions cream bean sprouts extract (*Phaseolus radiatus*) against the perineum wound healing process in postpartum mothers.

METHODS

This study was approved by the Health Department of Ponorogo on a recommendation by the National Unity, Politics, and Public Protection. Then, the study was conducted in two community health center in Ponorogo and written informed consent from each patient. Fifty-two women giving birth with stitches perineum degree of one or two selected based on inclusion criteria were divided into four intervention groups. The inclusion criteria of normal childbirth, postpartum day 1, normal body mass index, hemoglobin >11 g/dl, do not have a history of allergies. Mothers with no history and no diabetes mellitus, talent keloid, or other diseases that affect wound healing, mother postpartum wounds perineum Grade I and II are willing to become respondents, willing using bean sprouts extract ointment for the treatment of wounds perineum, during the study, respondents living is easy reach. The patients were selected by lottery by the way every patient who is willing to become respondents were given paper rolls. Each paper is no alphabet and numbers are sorted by treatment group. For example, the intervention group with a dose of 0%, 2.5% two-dose group, a group of three doses of 5%, and 10% groups of four doses. The group was given a code letter A with serial number 1, then he is A1 which means he entered the intervention group dose 0% of respondents number one, and so does the election of other groups to meet the number of each group.

The process of wound healing was measured with three measurement parameters include: (1) the level of pain using

a visual analog scale by category as follows: 1-4 = mild pain, 5-7 = moderate pain, and 8-10 = pain weight. (2) percentage diminution wounds with depictions of the wound (in a strip mall in a transparent plastic) from day to day until the wound shrink. (3) Today, it takes until the wound is healed.

At any intervention groups: Group I, II, III, and IV are not to the standard drug of midwives that mefenamic acid and amoxicillin, then given ointment extract of bean sprouts (*P. radiatus*) containing flavonoid, alpha-linolenic acid, and Vitamin C, E doses 0% in Group I, 2.5% in Group II, 5% in the Group III, 10% in Group IV (granting cream for 1 day takes 2 g each topical, so 1 day need 10 g of cream should be applied to the perineal wound). Giving intervention in the form of ointments bean sprouts extract (*P. radiatus*) given 5x/h (after the patient urinate or defecate).

Data are presented as mean \pm standard deviation. Differences in categorical variables were analyzed by the Chi-square and test. A $P < 0.05$ was considered statistically significant.

RESULTS

Data characteristics of the respondents indicated that the alpha value <0.05 (Table 1).

Kruskal-Wallis H-test result differences in all the variables measuring the healing of wounds with the entire group intervention. Obtained value of $P = 0.000$ ($P < 0.05$) means that there is a significant difference from the level of pain in various treatment groups obtained the value of $P = 0.000$ ($P < 0.05$) means that there is a significant difference from the result of the downsizing of injuries to the various treatment groups obtained the value of $P = 0.000$ ($P < 0.05$) means that there is a significant difference from the old wounds healed at the various treatment groups (Table 2).

After it emerged that there are significant differences among the various treatment groups, then to know the difference between the treatment groups which were significant (meaningful) use *post-hoc* test. The reading of the results refers to asymptotic line. Significance (two-tailed); where it says there is a difference when $P < 0.05$ (Table 3).

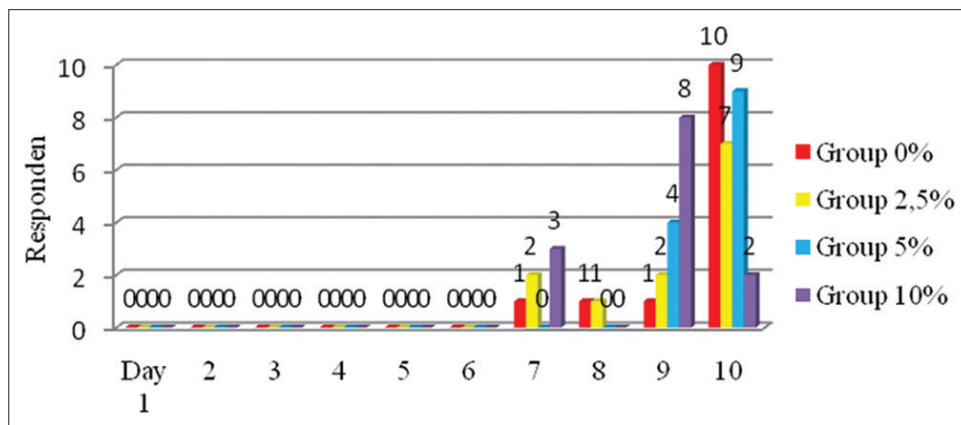
Graph the number of days the wound healed difference in each intervention group. In garafik, following is known that in the intervention group dose 0% of respondents did not experience pain on day 10 in the intervention group rate of 2.5% of respondents did not experience pain on day 10 in the intervention group a dose of 5% of respondents did not experience pain on the 10th day, and the dose intervention group 10% of respondents did not experience pain at day 9 (Graph 1).

In the following graph is known that in the intervention group dose 0% of respondents wound size <1 cm on day 10 in the intervention group rate of 2.5% of respondents wound size <1 cm on day 9, in the intervention group a dose of 5% respondents wound size <1 cm on day 8, and in the intervention group 10% of respondents dose wound size <1 cm on the 5th day (Graph 2).

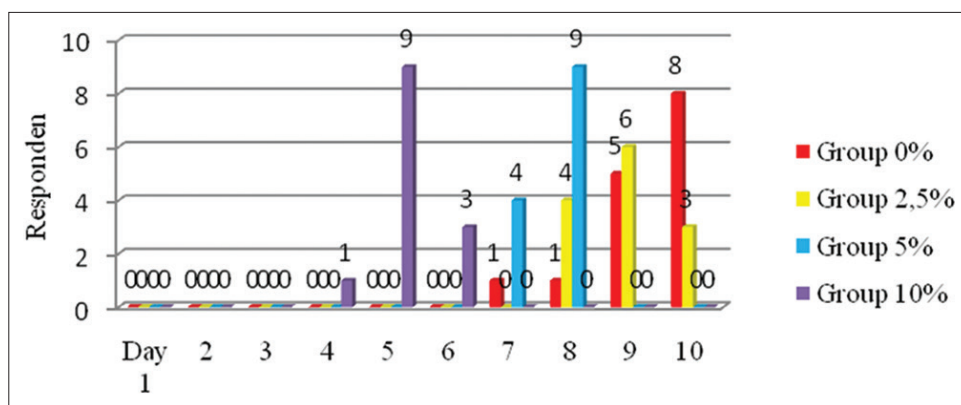
In the graph above is known that in the intervention group dose 0% of respondents wound healed on day 10 in the intervention group rate of 2.5% of respondents wound healed on day 9, in the intervention group a dose of 5% of the

Table 1: Data characteristics of the respondents

Characteristics of respondents	Intervention dosage 0%		Intervention dosage 5%		Intervention dosage 10%		Intervention dosage		P
	Amount	%	Amount	%	Amount	%	Amount	%	
Age (years)									
20-35	13	100	13	100	13	100	13	100	0
35	0	0	0	0	0	0	0	0	
BMI									
<18.5	0	0	0	0	0	0	0	0	0
>18.5	13	100	13	100	13	10	13	10	
Hemoglobin (g/dl)									
<11	0	0	0	0	0	0	0	0	0
>11	13	100	13	100	13	100	13	100	
Parity									
1x	7	26.92	7	26.92	6	23.08	6	23.08	0
>1x	6	23.08	6	23.08	7	26.92	7	26.92	



Graph 1: Graph pain level throughout the intervention group



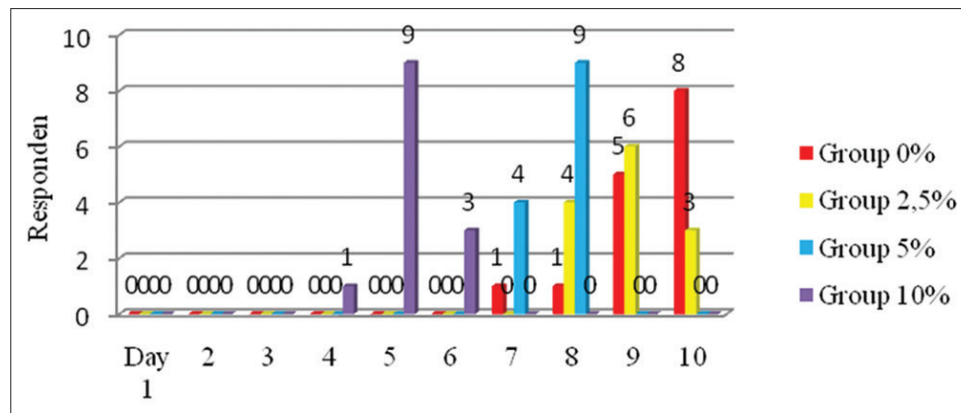
Graph 2: Chart the downsizing cuts across the intervention group

respondents wound healed on day 8, and in the intervention group dose 10% of respondents wound healed on day 5 (Graph 3).

DISCUSSION

Award cream bean sprouts extract intervention I 2.5% in the control group, there was no difference in the effect of the first intervention rate of 2.5% in the control group

because of the significance value >0.05 . Award cream bean sprouts extract intervention II 5% in the control group, there was no difference in the effect of the intervention II dose of 5% in the control group because of the significance value >0.05 . Award cream bean sprouts extract intervention III 10% in the control group, no difference in the effect of the intervention III dose 10% in the control group because of the significance value <0.05 .



Graph 3: Graph heal old wounds

Table 2: Statistical test results

Statistical test	Test statistics		
	The level of pain	Downsizing cuts	Old wounds heal
Chi-square	355.480	51.000	43.391
df	3	3	3
Asymptotic significance	0	0	0

Table 3: Differences between treatment groups were significant to the entire measurement variables wound healing and bean sprout extracts dose.

Couples treatment	P
Dosage of 0-2.5%	
The level of pain dosage 0% versus 2.5%	1.000
Downsizing cuts dosage 0% versus 2.5%	1.000
Old wounds heal dosage 0% versus 2.5%	0.034
Dosage of 0-5%	
The level of pain dosage 0-5%	0.168
Downsizing cuts dosage 0-5%	1.000
Old wounds heal dosage 0-5%	0
Dosage of 0-10%	
The level of pain dosage 0-10%	0
Downsizing cuts dosage 0-10%	0
Old wounds heal dosage 0-10%	0
Dosage of 2.5-5%	
The level of pain dosage 2.5-5%	0.168
Downsizing cuts dosage 2.5-5%	1.000
Old wounds heal dosage 2.5-5%	0
Dosage 5-10%	
The level of pain dosage 5-10%	0
Downsizing cuts dosage 5-10%	0
Downsizing cuts dosage 5-10%	0

This study proves that there are differences in the effect of various interventions cream bean sprouts extract (*P. radiatus*)

2.5%, 5%, and 10% of the perineal wound healing process in postpartum mothers. Especially intervention 10% faster heal wounds perineum postpartum mothers with $P < 0.05$.

CONCLUSION

There are different effects of various dose sprouts (*P. Radiatus*) extract toward wound healing process on postpartum mother.

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