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### Ointment Extract banana stem (*Musa balbisiana*) As An Alternative Healing Wounds perineum (*laboratory test on rat*)

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#### ABSTRACT

##### Background

Approximately 85% of women who have vaginal spontaneous birth experience perineal trauma, 52% are spontaneous lacerations. Sap of banana trees have several benefits because banana stem sap contains compounds including saponin, tannin, anthraquinone, quinone, lectin, and gallic acid.

##### Objective

To determine the effectiveness of extract ointment sap of stem banana (*Musa balbisiana*) as an alternative to healing perineal wounds

##### Method

True experiment with posttest only control group design, sampling using method Simple random sampling. The number of samples for each group was 6 with the total number of samples 18. Analysis of the data using the Friedman Test and continued with Kruskal Wallis.

##### Results

The Kruskal Wallis test results showed the average perineal wound healing in the intervention group was 0.00, while the povidone iodine 1.20 group and 0.80 dry wash group, p value = 0.011 (<0.05) which means the intervention group stem banana ointment, povidone iodine and dry washing method have significant differences in perineal wound healing.

##### Conclusions and Recommendations

extract ointment sap of stem banana effective for alternative to healing perineal wounds. It is necessary to develop ointment extract sap of stem banana in the form of a more practical container, which is a tube to avoid exposure to other substances when used.

**Keywords:** Stem Banana, Perineal wound healing.

## INTRODUCTION

Labor often resulting in injury to the birth canal, wounds are usually mild but sometimes extensive and dangerous injuries occur. Factors that cause puerperal infection can originate from injury to the birth canal which is a good medium for developing germs. This can be caused by the mother's low endurance after giving birth, poor maintenance and poor hygiene. Women with perineal trauma 60% experience pain during intercourse three months after birth and 30% experience pain for six months. [1] Based on WHO data (*World Health Organization*) in 2009 there were 2.7 million cases of perineal rupture in maternity. [2]

In Indonesia, about 85% of women with vaginal spontaneous childbirth experience perineal trauma in the form of 32-33% due to episiotomy and 52% are spontaneous lacerations. The prevalence of mothers who experience perineal tears in Indonesia in the age group 25-30 years is 24%, and in women aged 32-39 years is 62%. [1] Nationally the incidence of perineal wound infections during puerperium reaches 2.7% and 0, 7% of them develop in the direction of acute infection and from cases of this infection 22-55% are caused by birth canal infections. [1]

Banana plant midribs are commonly used by some people in Indonesia as medicine for wounds, some of the other parts of the banana plant have been investigated for their benefits including banana plant stem extract which is useful to inhibit the growth of several pathogenic bacteria such as *S.aureus*. Based on the research conducted by Alisi in his research, the banana contains glycosides, anthocyanins, tannins, flavonoids, and carbohydrates. [3] This compound is related to

antimicrobial activity in the process of wound healing.

In the scope of the clinic, the principle of handling patients is nonmaleficence, which is not to harm the patient. The form of ointment is chosen because it is practical, not sticky, and comfortable when used. The form of ointment provides a moist atmosphere to the wound which is the optimal atmosphere in the wound healing process. [4]

## Study Objectives

To find out the banana stem extract ointment (*Musa balbisiana*) is effective as an alternative to healing perineal wound.

## METHODS

This research is an analytical study using *True Experiment* design with design *posttestonly control group design* with the taking of research samples using the method of simple *random sampling*. The population *reference* in this study was female rats (*Rattus Norvegicus*) aged 2-4 months weighing around 150 - 300 gr, the number of samples for each group was 6 with a total sample of 18 samples.

## Data Analysis

Analysis is carried out *univariate* by calculating the mean, maximum, minimum and standard deviation values of the wound assessment instrument indicators as a result of REEDA scale and histopathological examination after treatment. analysis *inferential* This was used to determine the significant differences between treatment groups. In the trial groups measurements were made > 3 times and ratio scale data with non parametric data types so that the analysis method used was *Kruskall Wallis* ( $p < 0.05$ ).

## RESULT

### Univariate Analysis

#### Epithel Cells

**Table 4.1 Differences in healing of perineal wounds based on epithelial cell thickness.**

Variabel	Kelompok						P value
	Intervensi		Kontrol 1		Kontrol 2		
	mean	±SD	mean	±SD	mean	±SD	
Epitel	3,60	0,707	2,00	0,707	1,80	1,304	*0,046

\**Kruskal Wallis test results*

In table 4.6 above show the average thickness of epithel cells in ointment intervention group banana stem has the highest thickness of 3.60 compared to povidone iodine control group and dry washing group. Kruskal wallis test results showed a p value

of 0.046 means that there were significant differences in epithel cell thickness in the banana stem ointment intervention group and povidone iodine control group and dry washing

## REEDA Scale

**Table 4.5 Differences inperineal wounds**

Rattus Norvegicus seen from the total scale of REEDA							
REEDA (Today)	Group Intervention		Group Control 1		Group Control 2		p value
	Mean	± SD	Mean	± SD	Mean	± SD	
Day 1	10,80	0,837	10,80	0,837	10,80	0,837	**1.000
Day 2	7.60	0,548	9.40	0.548	8.80	0.837	** 0.011
Day 3	4.60	0.548	7.40	0.548	6.20	0.837	** 0.004
Day 4	2.80	0.837	4.80	0.447	3.80	0.837	** 0.013
Day 5	1.40	0.548	3.00	0.707	2.00	0.707	** 0.019
Days 6	0.20	0.447	1.80	0.837	1.00	1,000	** 0.037
Days 7	0.00	0,000	1.20	0.837	0.80	0.837	** 0.047
p value	* 0,000		* 0,000		* 0,000		

\* *Friedman Test* \*\* *The Kruskal Wallis test*

In table 4.5 above show the results of REEDA scale healing in the banana gedebog ointment intervention group 30%, showing average values the lowest on the 7th day with a value = 0.00 while in the povidone iodine group the average value was = 1.20 and in the dry wash group had an average value = 0.80. On day 1 shows the value of p value = 1,000 ( $> 0.05$ ), meaning that there is no significant difference in the intervention and control groups. While on day 2 the value of p value = 0.011 ( $< 0.05$ ) means that there are significant differences in the total scale of REEDA in the intervention and control groups on days 2, 3, 4, 5, 6 and 7.

## DISCUSSION

Banana stem extract ointment has activities that speed up the wound healing process, by influencing inflammatory cells, accelerating re-epithelialization, accelerating the neocapilerization process, increasing the formation of connective tissue on the skin so that it can be used as an alternative therapy

for wound closure.<sup>5 6</sup> Vitamin C also has an important role in the synthesis of collagen, in the formation of bonds between strands of collagen fibers where collagen is a protein that helps the formation of connective tissue in the skin of the ligament, [9,10]. While vitamin A is involved in crossing and epithelial cell proliferation. A fatty base ointment that is a mixture of vaseline albums and adap lanae that can draw more water so the wound dries quickly, doesn't rot and closes the wound, [9,10]

## CONCLUSION

There are significant differences in the administration of banana stem extract ointment 30% compared to povidone iodine and dry cleaning method of healing perineal wounds in mice.

## Recommendation Future

Studies can use more samples by knowing more about whether banana stem extract ointment has an antibacterial effect on wounds infected with

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