

# Aloe Vera Gel (*Aloe Barbadensis Miller*) Alleviate Pathologic Vaginal Discharge

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## ABSTRACT

Pathological discharge is most commonly caused by fungi and bacteria. Patients with vaginal discharge of reproductive age are estimated at 70-75%, and 40-50% have pathologic complaints. The content of the aloe vera plant (*Aloe Barbadensis Miller*) can reduce the incidence of pathologic vaginal discharge so as to prevent worse genital health. The purpose of this study was to determine the effect of aloe vera gel on alleviate pathologic vaginal discharge in premarital women. The research method is Quasi-experimental one group pre-post test design. The population of premarital women is 16 persons in Gugak Panjang Public Health Bukittinggi City area on June until September 2019. The sample group is 9 persons, using simple random sampling technique. Shapiro wilc's statistical test will be normally distributed so that it uses a paired T-test. Based on univariate, the average before given aloe vera gel was 7.33 and the average after given aloe vera gel was 4.33. Based on the paired T test, it was found that the effect of giving aloe vera gel in alleviate pathologic vaginal discharge with p-value = 0.001. It can be said that there is an effect of giving aloe vera gel in alleviate pathologic vaginal discharge in premarital women. Health workers can be advised to consume aloe vera gel as an alternative or complementary in the treatment to decrease of pathologic vaginal discharge

**Keywords:** *Aloe Verra, Pathologic Vaginal Discharge, Herbal Remedies, Complementary Therapy*

## 1. INTRODUCTION

Vaginal discharge or fluor albus is excessive discharge from the vagina, not blood. Divided into two, namely normal and pathological vaginal discharge. [1] Pathological vaginal discharge can present with variable colors including brown, yellow, green, white or red in color, sometimes with an itchy sensation of genitals and a foul smell or may be asymptomatic. Vaginal discharge normally results from secretion arising from cervix and Bartholin's glands; and shedding of epithelial cells of the vagina which results from bacterial action in the vagina [2] Factors causing pathological vaginal discharge are infections caused by viruses, fungi, germs, parasites, and tumors. [3]

According to WHO, women rarely know the cleanliness of their external genital organs. Every

year there are vaginal infections as much as 10-15% of 100 million women. 15% are caused by candida bacterial and fungal infections. [4] In Indonesia, about 90% of women have the potential to experience vaginal discharge with tropical climate conditions, so fungi are easy to grow. Cases of premarital Indonesian women aged 15-24 years experiencing symptoms of pathological vaginal discharge, which is about 31.8%. [5]

Bacteria that live in the vagina, classified as bacterial vaginitis (BV) can cause vaginal discharge and bad odor, in more than 50% of women with asymptomatic BV. Most women at least once during their life suffer from vaginal discharge. Most often in productive age, with an estimate between 70-75%, as many as 40-50% have recurrence. Studies show that Volvo Vaginal Candidiasis (CVV) is often diagnosed in young women aged

18-24 years, about 15-30% of symptoms are diagnosed positively by doctors. [6] Clinical manifestations of leukorrhea and urethral discharge do not cause death. Treatment is given according to the causative pathogen. Untreated pathological vaginal discharge can put you at risk for reproductive health problems such as infertility. [7]

Broadly speaking, there are two ways to overcome the problem of vaginal discharge, namely pharmacological and non-pharmacological. Pharmacological treatment due to candidiasis is fluconazole, and flag station. On the skin and genitals, the drug used for candidiasis is fluconazole which is given at a dose of 200 mg once a day for five days with side effects such as nausea, vomiting, diarrhea, and headache. Ketoconazole is given at a dose of 200 mg per day for a week with side effects such as anorexia and nausea and vomiting. Itraconazole is given at a dose of 200 mg orally twice daily for three days. With side effects of nausea, headache, and constipation. [8]

One way to reduce pathological vaginal discharge is with herbal therapy using aloe vera (aloe vera barbadensis miller). This plant contains 72 substances needed by the body. contains anti-bacterial as well as anti-fungal, anti-septic and anti-biotic, including aloemoedin and aloebardioid, compounds belonging to the anthraquinone group that act as antifungals so that they can reduce the symptoms of pathological vaginal discharge. [9] Another ingredient is acemannan which is a bioactive found in aloe vera which functions as an anti-virus. Saponins are useful as a class of chemical compounds, one of their secondary metabolites which functions as an antiseptic. And other ingredients such as aloin, barbaloin, and aloin anthraquinone complexes function as antibiotics and antimicrobials.[10]

Based on a study conducted by Cecillya in 2015 with the title "The Effect of Giving Aloe Vera Agar on the Incidence of Leucorrhoea, the results of the analysis regarding the decrease in the average administration of aloe vera gel showed a statistically significant difference with  $p = 0.001$  ( $= 0.05$ ).[11] Comparative research on the use of aloe vera in gelatin preparations is still very limited. Therefore, it is necessary to conduct research on the effectiveness of aloe vera gel in reducing pathological vaginal discharge in premarital women. It is hoped that this research can inform and strengthen the evidence regarding the use of

herbal medicines that can have the effect of reducing the symptoms of pathological or abnormal vaginal discharge.

## 2. THE PURPOSE

To know the effectiveness of giving aloe vera gel on alleviate pathologic vaginal discharge in premarital women.

## 3. MATERIALS AND METHODS

The research method used is the Quasy-experiment method with the one group pre and post test design approach. The research was conducted at Guguak Panjang Public Health Center, Bukittinggi City, Indonesia from June until September 2019.

The population of premarital women experiencing pathological vaginal discharge at the Guguak Panjang Public Health Center area was 16 people. Sampling using the finite formula:

$$n = \frac{N.(z)^2.p.q}{d.(N-1)+z^2.p.q}$$

The sample group was 9 persons, using simple random sampling technique. Inclusion criteria were unmarried, 18 to 25 years old, not psychologically impaired. Exclusion criteria were women who were menstruating, had stomach and intestinal disorders, women who took heart attack drugs, women who took drugs from type of licorine, diuretic or corticosteroid, and have a fever.

The intervention stage is in the early stages of the first day of conducting informed choice and informed consent and pretest using a checklist of interviews and direct observation. On the second to eighth day of intervention, respondents were given aloe vera gel with oral (400 grams of aloe vera, 300 grams of sugar, 25 grams of agar-agar powder, and 500 ml of water. All ingredients were boiled for 5 minutes on medium heat). Aloe vera is given 2 times a day in the morning and evening. On the ninth day, post-test measurements were taken.

The measuring instrument in this study used an observation sheet based on five symptoms and nine questions of pathological vaginal discharge, namely mucus that came out more than usual, burning sensation in the female area, excessive itching and odor, pain when urinating, and swelling and redness in the vaginal and vulvar area. [12]

Test the normality of the data through the Shapiro wilc's. The conclusion is that the data was

normally distributed so that the data analysis used is univariate analysis and bivariate analysis through paired t-test.

**4. RESULTS**

**Table 1.** Saphiro Wilc Normality Test

Variables	<i>p-value</i>	Information
Pretest	0,354	Normal
Posttest	0,102	Normal

The results of the normal distribution test with the Saphiro Wilk test (Table 1), the data is normally distributed so that it uses the paired t-test.

**Table 2.** The effect of aloe vera gel on alleviate pathologic vaginal discharge in premarital women

Variable	N	Mean	SD	Min Max	Mean Different	P- Value
<b>Pretest</b>	9	7,33	1,000	6-9	0,333	0,001
<b>Posttest</b>	9	4,33	1,118	3-6	0,373	

Based on table 2 using paired t-test, the p-value = 0.001, meaning that there is the mean difference in the decrease in symptoms of pathological vaginal discharge was significant between before and after the intervention.

**5. DISCUSSION**

From the results of the study, there was a significant difference in the average symptoms of pathological vaginal discharge between before and after consumption of aloe vera gel (Aloe Barbadensis Miller) which decreased after the intervention. Therefore, the administration of aloe vera gel (Aloe Barbadensis Miller) has a significant effect on reducing the symptoms of pathological vaginal discharge in pre-wedding women in the working area of the Guguak Panjang Public Health Center, Bukittinggi City.

The average difference in the decrease in symptoms of pathological vaginal discharge before and after aloe vera gel was applied was 3. Of the 9 respondents, all of them experienced a decrease in symptoms of pathological vaginal discharge. There

is 1 respondent who experienced a decrease in the difference in value of 4, and there is 1 respondent who experienced a decrease in the difference in value of 2.

Pathogenesis of vaginal discharge or vaginal discharge is a symptom in the form of discharge from the female genitalia, not blood. Divided into normal vaginal discharge and pathological vaginal discharge. [1] Some of the symptoms of pathological vaginal discharge suffered by women of premarital age is mucus that comes out continuously. This condition causes itching in the respondent's vaginal area, the mucus changes color to greenish yellow with an unpleasant odor due to the activity of pathological bacteria. Giving aloe vera gradually can reduce symptoms that cause discomfort in women by reducing the activity of bacteria that cause pathological vaginal discharge. [13]

There is a reduction in the symptoms of pathological vaginal discharge due to some of the ingredients contained in aloe vera. Saponins in aloe vera function as an antiseptic.[14] The bioactive component of acemannan functions as an anti-viral and anthraquinone aloin complex is the active ingredient of aloe vera which functions as an anti-bacterial and anti-biotic compound. [15] Anthraquinone is one example of this group which contains high aloe vera sap. This compound works by inhibiting protein synthesis by blocking the entry of aminoacylated tRNA (site of the A ribosome). [16] Aloe vera liquid also contains the main element, namely aloin which is an active ingredient that acts as an anti-septic and anti-biotic. Aloin compound is a condensation of aloe emodin with glucose with a bitter taste. [17]

This research is in line with the research conducted by Erwin Ariawan with the title The Effect of Aloe Vera Gel on Candida Albicans Fungus Inhibition Test on Candidiasis Disease, observations at several concentrations showed a significant decrease in Candida Albicans fungal colonies along with the increase in the number of Candida Albicans fungal colonies. concentration of aloe vera gel extract. [18] Based on a study conducted by Cecillya in 2015 with the title “The Effect of Giving Aloe Vera Agar on the Incidence of Leucorrhoea, the results of the analysis regarding the decrease in the average administration of aloe vera gel showed a statistically significant difference with p = 0.001 p (= 0.05).[11]

The advantage of this study compared to previous research is that it intervenes in processing in the form of gelatin so that it is easier and more attractive to be consumed twice a day regularly in the morning and evening, while previous studies only intervened with other processing in the form of applying directly to the female area with pads as protection.

There is a difference in the average of several respondents due to the characteristics of respondents who still vary between the ages of 18-25 years, with varying vaginal discharge status. Some of the symptoms of vaginal discharge experienced by women of premarital age are excessive and continuous discharge of mucus, causing the vaginal area to always be moist. Moist conditions in the feminine area cause the development of pathological organisms that cause itching in the respondent's vaginal area, the mucus changes color from milky white to greenish yellow and causes an unpleasant odor.

## 6. CONCLUSION

It can be said that Aloe vera gel statistically reduces symptoms of pathological vaginal discharge in pre-marital age women in the Guguk Panjang Public Health Center area of Bukittinggi City.

## 7. SUGGESTION

Health workers can be advised to consume aloe vera gel as an alternative or complementary in treatment to reduce the incidence of pathologic vaginal discharge in the future.

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