

# THE EFFECTIVENESS OF COLEUS AMBOINICUS L. LEAVES EXTRACT SOLUTION FOR GRADE II LACERATION OF THE PERINEAL TEARS IN POSTPARTUM MOTHERS

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## ABSTRACT

Vaginal laceration (perineal tears) is one of the risks that often occurs in the process of vaginal delivery, because of the intense stretching and pressure in the birth canal when the mother pushes to deliver her baby, causing tears in the skin and muscle tissue around the birth canal. Treating birth perineal laceration is very important to accelerate healing and prevent infection of the birth canal and bladder in postpartum mothers. The leaves have a composition that can be used as an antimicrobial and antiseptic. This study aims to determine the effectiveness of a solution of extracts of the leaves of *Coleus amboinicus* on pain and healing of perineal lacerations in postpartum mothers. This type of quantitative research with experimental design. The research sample of postpartum mothers met the inclusion criteria, pain observation using the UPAT scale and wound healing using the REEDA scale, data analysis with the WMean Score. The results showed that postpartum pain decreased on the 5th day with an average of 1.97 (mild pain), and the healing time of perineal lacerations occurred on the 5th day, with a mean of 2.90 (good). Wax leaf extract solution is effective in reducing pain and healing time for second-degree perineal lacerations in postpartum mothers

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## 1. Introduction

Spontaneous labour can cause birth canal laceration (perineal laceration), there are more than 85% of postpartum mothers with vaginal delivery will experience 2nd-degree birth canal laceration and 0.6-11% of all vaginal deliveries experience 3rd or 4th-degree laceration (Ryan Goh, Daryl Goh, 2018). The incidence of perineal lacerations from WHO data in 2015 in maternity mothers in the world was 2.7 million cases, and this number is estimated to reach 6.3 million in 2050. In Asia alone, 50% of women giving birth experience birth canal lacerations. In Asia, birth canal lacerations are also quite a problem in society, 50% of the incidence of perineal lacerations in the world occur in Asia. The prevalence of maternity mothers who experience perineal lacerations in Indonesia in the 25-30 year age group is 24%, while in the 32-39 year age group it is 62%. The perineal laceration is one of the causes of postpartum maternal bleeding in Indonesia.

Postpartum mothers are very susceptible to uterine infections because of the presence of lochia, if the lochia is allowed to dry on the vulva and perineum, it will become a place for bacterial growth, which can then spread to the uterus. (Ministry of Health, 2019) In addition, the infection can also be caused due to improper care of wounds in the birth canal or perineal lacerations. Improper perineal care can lead to postpartum infection (Manuaba, IBG, 2014). This is supported by the perineal wound area affected by lochea is a moist area, so it will greatly support the proliferation of bacteria. Infections due to poor care can lead to complications such as; bladder and birth canal infections. More than 85% of women who gave birth vaginally experienced perineal trauma, and 60% - 70% received stitches (hecting). Risk factors include larger infant size, mode of delivery (especially forceps), fetal

malpresentation and malposition, maternal position during labor, and prolonged labor. Other factors that can increase the level and degree of trauma are ethnicity, age over 25 years, abnormal collagen synthesis, poor nutritional status, and higher socioeconomic status. Physician practices or preferences in terms of labor intervention can also influence the severity and extent of perineal trauma (eg, use of forceps and vacuum extraction) (Frohlich J, 2015).

Efforts that can be made to prevent the risk of infection are to perform birth canal laceration treatment. Treatment of this laceration is started as soon as possible after 2 hours of normal delivery. The main treatment for lacerations until now is antibiotics because they are considered a powerful way to fight infection. However, in recent decades, its effectiveness in fighting infections has diminished, leading to toxic reactions and severe bacterial resistance. According to the World Health Organization (WHO), 70 to 80% of people in developing countries use alternative medicine or complement their treatment with traditional medicinal plants (Jumiarni & Komalasari, 2017).

The leaves of *Coleus Amboinicus* Lour are Indonesian ethnobotany that has been used by the North Tapanuli community for generations as a daily vegetable menu and especially served for mothers who have just given birth. The chemical content of the leaves of *Coleus* is glycosides, carbohydrates, amino acids, proteins, flavonoids, tannins, phenolic compounds, and terpenoids (Rout, et al., 2010). asthma, diarrhea, epilepsy, fever, cough, headache, dyspepsia, kidney stones, dysentery (Rout, et al., 2010), malaria, worm medicine (Kaliappan, et al., 2008), wound medicine, canker sores (Depkes RI., 1989), prevent cancer, antivertigo, increase the total volume of breast milk (Santosa and Hertiani, 2005). *Coleus* leaves can be used to accelerate wound healing by acting as an anti-bacterial and keeping the perineal area moist to promote wound healing. That is the reason why this leaf is still widely studied to find out and prove its use of this leaf (Dwivedi, Tripathi, 2014; Chakraborty & Shah, 2011). Based on the above background, researchers are interested in knowing the effectiveness of a solution of extracts of the leaves of *coleus amboinicus* in reducing pain and healing erienal lacerations in postpartum mothers in North Tapanuli Regency.

## 2. Method

This research is quantitative research with an experimental design. The research location was conducted in North Tapanuli Regency. The population is all postpartum mothers with perineal lacerations in the North Tapanuli Regency for the period March - October 2020 as many as 258 people. The research sample was postpartum mothers who met the inclusion criteria, namely: willing to be respondents, normal delivery with 2nd-degree laceration, and in healthy condition, sampling using purposive sampling as many as 40 people. The data used are primary data through observation of respondents for 10 days. Observation of pain using the UPAT scale (Universal Pain Assessment Tool) and the duration of wound healing using the REEDA scale (Redness, Odema, Ecchymosis, Discharge, Approximation). All participants in this study received the same antibiotic (Amoxicillin 500 mg tab 3x1) with instructions to take it regularly. In terms of geographical characteristics, ethnicity, and culture, especially in terms of postnatal care, all respondents were homogeneous. Data analysis used univariate analysis and Weight Mean Score analysis

## 3. Result and Discussion

### 3.1 Result

#### 1. Description of respondent characteristics

The description of characteristics of the research respondents is described in the table below:

TABEL 1.  
SEBARAN KARAKTERISTIK RESPONDEN

Variable	Responden	
	n	%
<b>Age</b>		
1.<20 years;	3	7,5
2.20-35 years;	27	67,5
3.>35 years	10	25
Total	40	100
<b>Parity</b>		
1. Primipara;	22	55

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2. Multipara	18	45
Total	40	100
<b>Cause of laceration</b>		
1. Spontaneous,	27	67,5
2. Episiotomy	13	32,5
Total	40	100
<b>Baby's weight birth</b>		
1.<3000 gram	2	5
2.>3000 gram	38	95
Total	40	100

Source: primary data

In table 1 above, the distribution of respondents based on age in each group is mostly at the age of 20-35 years (67.5%), based on parity the most in the multiparous category (77.5%), the cause of birth canal/perineal lacerations is more mostly caused by spontaneous labor (67.5%), and the baby's birth weight was more in the category >2500 grams (95%).

## 2. The Level Of Pain Of Birth Canal Laceration In Postpartum Mothers After The Use Of A Solution Of Extracts Of The Leaves Of Coleus Amboinicus

Assessment of perineal wound pain in respondents based on the UPAT scale can be seen in the following table:

TABLE 2  
INTERPRETATION OF PAIN LEVELS AFTER USING COLEUS LEAF EXTRACT SOLUTION IN POSTPARTUM MOTHERS

Category	Pain level	
	Mean	Interpretasi
After the 1st day of treatment	4.03	Nyeri sedang
After the 5th day of treatment	1.97	Nyeri ringan

Source: primary data

Based on table 2, it can be seen that the average pain of perineal laceration in postpartum mothers there is a change in the average pain on the 1st day is 4.03 with the moderate pain category. Then on day 5, there was a decrease in pain in postpartum mothers to an average of 1.97 with the mild pain category.

## 3. The Average Length Of Healing Of Perineal Lacerations In Postpartum Mothers With A Solution Of Extracts Of The Leaves Of Coleus

The duration of wound healing in postpartum mothers with a solution of leaf extract was observed and assessed based on the REEDA scale in the following table:

TABLE 3  
HEALING TIME OF PERINEAL LACERATION IN POSTPARTUM MOTHERS WITH COLEUS LEAF EXTRACT SOLUTION

Category	Healing time of Perineal Laceration	
	WMean	Interpretasi
1st day	7,89	Medium
2nd day	6,69	Medium
3rd day	5,70	Light
4th day	4,95	Light
5th day	2,90	Good
6th day	2,30	Good
7th day	1,04	Good
8th day		

Source: Research primary data

Based on table 3, it was found that the healing time of birth canal lacerations in postpartum mothers based on the REEDA scale after treatment, namely on the 5th day of laceration healing was categorized as good.

## 3.2 Discussion

### 1. Characteristics of postpartum mothers

In this study, the majority of respondents were aged 20-35 years, namely 27 people (67.5%). This can be associated with a healthy reproductive age at the age of 20-35 years. If pregnant women at the age of < 20 years and > 35 years are categorized as pregnant with risk factors. Primi is a young mother who is pregnant for the first time at the age of <20 years, where at that age reproduction is not ready to accept pregnancy due to the condition of the uterus and pelvis which are still small, as a result, the fetus can experience disturbances. On the other hand, the psychological condition of the mother is not ready to accept pregnancy and childbirth. The dangers that occur if the age is too young, namely premature, antepartum bleeding, post partum bleeding. In pregnant women aged 35 years, the mother is susceptible to disease, the possibility of experiencing disability for her baby and low birth weight (LBW), and congenital defects, while complications experienced by the mother are pre-eclampsia, and hydatidiform mole, abortion, prolonged labor, postpartum hemorrhage. labor, pre-eclampsia, premature rupture of membranes, LBW, and congenital defects (Manuaba, IBG, 2014). This is in line with the results of Sukma et al.'s 2020 study, which obtained an OR value of 2,077, thus pregnant women in the at-risk age group (35 years) have a 2-fold risk of abdominal delivery compared to their reproductive age (20-35 years) (Sukma and Sari, 2020). Apart from being a risk factor for pregnancy, age is also one of the internal factors that can affect wound healing. Wounds heal faster at a younger age than at an older age because skin elasticity and collagen quality also differ in the two age groups. so the skin can tolerate cell trauma or infection better than older people. Age affects every phase of wound healing, including increased platelet aggregation, increased secretion of inflammatory mediators, delayed infiltration of macrophages and lymphocytes, impaired macrophage function, decreased secretion of growth factors, delayed re-epithelialization, delayed angiogenesis and collagen deposition, decreased collagen turnover and remodeling, and decreased wound strength (Gonzalez, Andrade, Costa, & Medrado, 2016). In table 1, it can be seen that based on parity postpartum mothers who experienced birth canal lacerations were the most in primigravida 22 people (55%) and multigravida 18 people (45%). Parity is a risk factor for spontaneous laceration of the perineal because in primiparas the perineal is found to be stiffer (less elastic) so that it is more prone to spontaneous tearing, whereas in multiparous mothers the area of the birth canal is more elastic (Saifudin, 2019). The results of this study are by Prawirohardjo Sarwono (2012) who said that perineal lacerations almost occur in all first deliveries (primipara) and not infrequently also in subsequent deliveries (multipara) because the birth canal has never been passed by the baby's head so that the muscles of the baby's head have not been traversed the birth canal has not stretched (Prawirohardjo, 2012).

## 2. Causes of Perineal Laceration

Labor is influenced by the strength of contraction (power), fetus (passenger), the birth canal (passage), (psychic) , and rescuer. The birth canal, including the perineum, as part of the birth canal through which the fetus passes, must be in an elastic state and proper pushing pressure reduces the risk of tearing the birth canal. Based on the occurrence of lacerations, the majority of respondents with spontaneous lacerations, namely 27 people (65.7%), while due to episiotomy as many as 13 people (32.5%). Rupture or laceration of the birth canal can occur spontaneously or artificially. Artificial laceration known as episiotomy is a type of wound that is intentionally made for indications, including rigid perineum, fetal distress, and prerequisites for other procedures such as extraction vacuum/extraction forceps. Several studies have shown that in a normal delivery, the percentage of spontaneous lacerations is higher than in intact perineum. In line with this study, the results of research conducted on mothers giving birth at Godean Health Center in 2017 showed the percentage of spontaneous lacerations was 58.2 percent (Astuti Emi, 2018). Spontaneous rupture/laceration can occur due to wrong pushing efforts, large birth weight of the baby, rigid perineum, and parity. Risk factors for perineal lacerations include the size of the baby's weight, the larger the size of the baby being born, the more stretched the perineum, causing rupture or laceration in the birth canal. In this study, lacerations were more common in mothers who gave birth with a birth weight of >2500 grams (85.6%), while a baby's birth weight <2500 grams was 14.4%. Laceration of the birth canal is influenced by several factors, namely the position of the mother during delivery, pushing technique, and birth attendant (NHS Trust, 2014). Based on the birth weight of the babies in this study, the majority of postpartum mothers with lacerations of the birth canal where the majority of 38

postpartum mothers who gave birth to babies weighing >3000 grams (98%). The results of this study were corroborated by research conducted by Wulandari, in the city of Semarang, which showed that the percentage of spontaneous rupture was greater (59.4%) compared to those that did not rupture. Spontaneous rupture/laceration can occur due to wrong pushing efforts, large birth weight of the baby, rigid perineum, and parity. The birth weight of the baby can affect the occurrence of lacerations on the perineum, especially in large babies. Normal baby weight between 2500-3800 grams can also cause perineal tears. Rigid perineum is thought to be unable to adapt to excessive stretching, due to a very large baby or macrosomia. Newborns that are too large or more than 3800 grams will increase the risk of the delivery process, namely the possibility of the baby's shoulder getting stuck, the baby will be born with breathing problems, and the condition of the baby being born with trauma to the neck, shoulders, and nerves. This happens because the baby's weight is large so it is difficult to pass through the pelvis and causes lacerations to the perineum in normal delivery mothers.

### 3. Pain and Healing Time of Perineal Laceration

In general, the degree of laceration and suturing of the wound are the factors most related to the level of pain (Aradmehr, et.al., 2014). Perineal pain is also associated with a slow wound healing process, a prolonged active phase in the second stage of labor, neonatal overweight, and prolonged maternal sitting position. In addition, episiotomy wound pain can also come from unclean episiotomy wound care. In multiparous women who had a history of perineal lacerations, they felt the difference between earlier pain reduction when undergoing perineal wound treatment with extracts of the wake compared with perineal laceration treatment using betadine. In addition to reducing pain earlier, respondents also felt comfortable in the perineal area. Perineal laceration wound care needs to be done because it is close to the anus area so it is at risk for bacterial growth which can increase the risk of infection in the wound. The essential oil derived from the leaves of the leaves is rich in thymol, eugenol, carvacrol, ethyl salicylate, and chavicol. The results of Wadikar's research (2016) showed the content of 74.41 mg% volatile ether in a 24% aqueous solution, with the extraction of petroleum ether of 2.23% and an alcohol solution of 8.5% in plants grown in India. Eugenol contained in the leaves of the wake besides having an antimicrobial effect also has analgesic properties. (Silalahi, 2018). Healing of perineal lacerations using the extract of the Coleus leaves on the average day 5. The results of the analysis of the effectiveness of the extract solution for wound healing with a solution of the extract of the leaves of the coleus were more effective. The results of this study are supported by the results of research (Dalimunthe, Sembiring, Siregar, Darwis, & Barus, 2016) where the extract of coleus effectively kills the bacteria streptococcus aureus, escherichia coli, and candida albicans. The leaves are rich in eugenol, carvacrol, and thymol which function as antimicrobials. Carvacrol is effective as an antimicrobial such as Staphylococcus Aureus and Escherichia Coli (E.Coli). The content of carvacrol in the extract of the leaves of Coleus works by inhibiting the movement of flagella and preventing the synthesis of flagella. The results of Wadikar's research (2016) showed the content of 74.41 mg% volatile ether in a 24% aqueous solution, with the extraction of petroleum ether of 2.23% and an alcohol solution of 8.5% in plants grown in India. Eugenol contained in the leaves of the coleus besides having an antimicrobial effect also has analgesic properties. Eugenol extracted from cloves has long been used as a tooth pain reliever (Manoppo, 2011). In addition to its antimicrobial benefits, the phenolic compounds contained in carvacrol can inhibit the growth of fungi (Candida albicans). The presence of e. coli in the perineal area can come from the expulsion of urine and feces through the rectum. The presence of Staphylococcus Aureus and Escherichia Coli (E.Coli), as well as candida albicans, can prolong wound healing.

### 4. Conclusion

From the results of the study it can be concluded that coleus leaf extract solution was effective in reducing the pain of perineal lacerations in postpartum mothers in the North Tapanuli Regency and the healing time of perineal lacerations in post-partum mothers by using a solution of extracts of the leaves of Coleus takes place quickly.

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