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Prevention Of Incontinence-Associated Dermatitis Of Immobility Patients Using Aloe Verra Skin Barrier And Olive Oil

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ABSTRACT

Incontinence Associated Dermatitis (IAD) is an inflammation of the skin that occurs when urine or faeces come into contact with the perineum, causing discomfort such as pain, burning, and itching in the patient. One IAD management uses skin barriers containing moisturizers such as aloe vera and olive oil. Some of the aloe vera and olive oil compositions benefit the body. Namely, it can accelerate wound healing, anti-inflammatory, moisturize the skin, and antimicrobials. This study aimed to identify the influence of the aloe vera skin barrier and olive oil on iad prevention in immobility patients in hospitals. The population is patients who experience physical immobility and patients who have just entered without IAD at the Haji Adam Malik Central General Hospital Medan. The sample was 11 people (11 people as a control group and 11 as an intervention group), using purposive sampling techniques—data analysis using the Mann Whitney and Kruskal Wallis tests. The results showed differences in IAD values between the three groups, namely the aloe vera, olive oil, and control groups (p= 0.003). The average value of the control is the highest. This means that immunomobility patients who do not get the skin barrier of aloe vera or olive oil experience IAD the most while undergoing treatment at the hospital

1. INTRODUCTION

Incontinence-associated dermatitis (IAD) is an inflammation of the skin that occurs when urine or faeces come into contact with the perineum. This causes considerable patient discomfort and is time-consuming and costly to treat IAD (Beeckman et al., 2015). Patients with IAD experience discomfort, pain, heat, itching, or tingling. Patients who experience IAD will experience loss of freedom, and disturbances in activity and sleep, resulting in a reduced patient quality of life. In 2008, it was found that around 348 million people (8.2%) worldwide with IAD are expected to increase to 8.5% (Irwan, 2018).The use of natural ingredients as treatment therapy has long been used since ancient times (Negara, 2018).

Patients with IAD will experience itching, pain, and tingling that can cause discomfort in the genitalia area. Therefore, to avoid patient discomfort, it is necessary to prevent IAD from occurring in patients, especially patients who are on bed rest for a long time or immobility who experience urinary or faecal Incontinence that causes the perineal area to be wet due to faeces and urine, so prevention is needed so that IAD does not occur, so iad management is needed, one of which is the use of skin barriers that contain moisturizers. One example of a skin barrier is aloe vera and olive oil (Bliss et al., 2015).Aloe vera and olive oil have several compositions whose functions are very beneficial for the body. Namely, it can accelerate wound healing, anti-inflammatory, laxative effects, moisturize the skin, antiseptics, and antimicrobials.

One of its ingredients is glucomannan and gibberellin. These substances can interact with the growth factor receptors of fibroblasts that stimulate activity and proliferation, thereby increasing collagen synthesis and the synthesis of hyaluronic acid and dermatan sulfate, thus accelerating granulation for wound healing. In addition, it contains lupeol, which can inhibit skin inflammation (Nugraha and Rahayu, 2015).

Many studies have examined aloe vera and olive oil, including research conducted by (Brennan, Milne, Kann, and Ekholm, 2017) on Clinical Evaluation of a Skin Protectant for the Management of Incontinence Associated Dermatitis obtained from 16 patients with IAD intervened by administering acrylate as a skin protector from the Skin Assessment Tool (SAT) score, namely 13 out of 16 patients improved, 1 patient did not experience changes, and 2 patients worsened as a result of myocardial infarction and died.

The same study was also conducted by (Kon et al., 2017) on the effects of a Skin Barrier Cream on the Management of Incontinence Associated Dermatitis in older Women: A cluster Randomized Controlled Trial obtained from 33 patients, 18 intervention patients successfully overcame IAD by administering skin cleansers and skin moisturizers. A supportive study conducted by Hekmatpou et al. (2019) that aloe vera can prevent and heal wounds on the skin was carried out in 23 systematic reviews by applying aloe vera as a complementary treatment that heals wounds on the skin.

Aloe vera is one of the skin barriers. This is supported by Nugraha and Rahayu (2015), who are researching aloe vera's effect on burns. Aloe vera has an effect on skin healing in patients with burns. Similarly, Budiyanto's (2012) research examined the effect of aloe vera on the healing of decubitus wounds. Aloe vera can affect the healing of chronic wounds in decubitus patients. Another study related to the effectiveness of olive oil for the prevention of skin damage to lepers was conducted by Fajriyah, Andriani, and Fatmawati (2015), that the use of olive oil or olive oil can be used as a prevention, namely 93.3% of lepers do not experience skin damage, after using olive oil regularly.

Lubis conducted another study, Thaufik, Widyawati, and Suhartono (2015), under the research title Effectiveness of Olive oil and Virgin Coconut Oil (VCO) Topical to Prevent Of Striae Gravidarum in The Second Trimester of Pregnancy. In this study, researchers applied olive oil and virgin coconut oil (VCO) to Striae Gravidarum. The results of the study found that this intervention could prevent the occurrence of striae. Another olive oil research, namely by Jelita, Asih, and Nurulita (2014), examined the effect of giving olive oil on the degree of diaper rash in babies who have diarrhoea, with a p-value of $0.011 < 0.05$ so that olive oil affects the degree of diaper rash.

Aloe vera can absorb into the skin, and the components of the substances in aloe vera work on the humectant mechanism to improve skin hydration; olive oil will increase circulation in dead skin areas, work as a protector/occlusive, and emollient on the skin so that it can smooth the skin, soften the skin, and reduce TEWL (Transepidermal water loss). The use of VCO provides the ability of skin integrity in patients with IAD. VCO contains medium chain saturated fats that easily enter the skin's deep layers and maintain the skin's elasticity and suppleness. Based on the research of Ritonga and Daulay (2019), who have explored the use of VCO on skin integrity in the elderly who experience Incontinence, there are significant influences on the use of virgin coconut oil on skin integrity in the elderly who experience Incontinence.

The use of aloe vera and olive oil is the most interesting to research because both are well known to be good for skin care. Still, all the research on the use of aloe vera and olive oil for skin care has not been done by giving Aloe vera and Olive oil as natural skin moisturizers for the prevention of Incontinence Associated Dermatitis (IAD).

2. RESULT AND DISCUSSION

Characteristics of Respondents

Table 1. Criteria

Characteristics of Respondents	Aloe Vera		Olive Oil		Control	
	F	%	F	%	F	%
Age						
17-25	5	33.3	1	6.7	1	6.7
26-35	1	6.7	1	6.7	1	6.7
36-45	3	20.0	5	33.3	4	26.7
46-55	1	6.7	1	6.7	1	6.7
56-65	4	26.7	7	46.6	6	40.0
>65	1	6.7	0	0.0	2	13.3
Gender						
Male	9	60.0	5	33.3	12	80.0
Female	6	40.0	10	66.7	3	20.0
Education						
Primary School	0	0.0	2	13.3	1	6.7
Junior School	5	33.3	4	26.7	4	26.7
Senior School	9	60.0	7	46.7	8	53.3
High School	1	6.7	2	13.3	2	13.3
Job						
Housewives	9	40.0	7	46.7	3	20.0
Self-employed	9	40.0	4	26.7	7	46.7
Private employees	1	6.7	1	6.7	1	6.7
Civil servants	0	0.0	0	0	1	6.7
others	0	0.0	1	6.7	2	13.3
Not Job	3	13.3	2	13.3	1	6.7

Table 1 It can be concluded that the study subjects were divided into 3 groups aloe vera, olive oil, and control. It was found that for the aloe vera group, most patients aged 17-25 years were 5 people (33.3%). The most gender is male, namely 9 people (60.0%), the most patient education is high school education as many as 9 people (60.0%), for the most jobs patients work as entrepreneurs and Housewives (IRT) which is 6 people each (40.0%).

In the olive oil group, most patients were 56-65, 7 people (46.7%). The highest gender is women, namely 10 people (66.7%), the education of the majority of patients with high school education is 7 people (46.7%), for the most jobs patients work as Housewives (IRT) which is 7 people (46.7%).

For the age control group, the most patients at 56-65 years were 6 people (40.0%). Most gender is male. Namely, 12 people (80.0%), the most education of patients with high school education is 8 people (53.3%), for the most jobs patients work as entrepreneurs, namely 7 people (46.7%).

Table 2. Description of IAD in Intervention Group patients and Control Group Patients

IAD	F	%	Mean	SD	Min-Max
Aloe Vera					
Not IAD	11	73.3	0,21	5.3	1-11
IAD Category I	3	20.0			
IAD Category II	1	6.7			
Olive Oil					
Not IAD	12	80.0	0,12	6.24	0-12
IAD Category I	3	20.0			
IAD Category II	0	0.0			
Control					
Not IAD	7	46.7	0,75	2	2-7
IAD Category I	5	33.3			
IAD Category II	3	20.0			

Based on Table 2. In the aloe vera group, the average value of immobility patients who experienced IAD was 0.23, while in the olive oil group, the average value of immobility patients who experienced IAD was 0.14. In the control group, the average value of immobility patients who experienced IAD was 0.77.

The results obtained based on the IAD Severity Categorisation Tool are in the aloe vera group that is not subject to IAD 11 people, IAD category 1, namely 3 people, and category 2, namely 1 person. While olive oil that is not subject to IAD is 12 people, IAD category 1 is 3 people, and category 2 is not there. In the control group, 7 people were not subject to IAD, category 1 IAD was 5 people, and category 2 was 3 people.

Analysis

Table 3. Description of IAD in Intervention Group patients and Control Group Patients

Variable	Aloe Vera		Olive Oil		Control	
	P	*Information*	*P*	*Information*	*P*	*Information*
IAD	0,000	Abnormal	0,000	Abnormal	0,000	Abnormal

Based on table 3 above, the normality test results with the Shapiro Wilk Test show that the data of patients who experienced IAD in the Aloe Vera, the olive oil, and the control group were not normally distributed (p<0.05).

Tabel 4. Derajat IAD Pasien Imobilitas pada Kelompok Intervensi dan pada Kelompok Kontrol

Variable	Mean Rank	*Z*	*P*
Aloe Vera	17,32	-2,430	0,011
Control	25,68		

The results of statistical tests using the Mann-Whitney test explained the effect of aloe vera administration on preventing IAD in hospital immunomobility patients. This can be seen from the p-value = 0.011, which means that there is an average difference in IAD between patients who are given aloe vera skin barrier and patients who are not given aloe vera skin barrier.

Table 5. IAD Degree of Immobility Patients in the Intervention Group and Control Group

Variable	Mean Rank	*Z*	*P*
Olive oil	16,66	-2,876	0,003
Control	26,34		

The results of statistical tests using the Mann-Whitney test explained the effect of giving olive oil skin barriers to prevent IAD in immobility patients at Raja Martapura Hospital. This can be seen in the p-value = 0.003, which means an average difference in IAD between patients who are given olive oil skin barrier and patients.

Table 6. Differences in the Effect of Aloe Vera, Olive Oil, and Control on IAD Prevention

Variable	Mean Rank	P
Aloe Vera	28.79	0,003
Olive Oil	27.08	
Control	40.32	

Based on Table 6. it is known that there are differences in IAD values between the three groups, namely the aloe vera, olive oil, and control groups (p = 0.003)

3. DISCUSSION

Skin can be damaged in various ways, and one of the common causes of skin damage is Incontinence. IAD is an inflammation of the skin that can occur when urine or feces come into contact with the perineal or perinatal skin. Lesions are characterized by epidermis erosion and maceration appearance on the skin (Atikasari, 2021).

One of the interventions to overcome problems on the skin is skin care (Alhasso, 2022). This study was conducted to determine the effect of using the Aloe Vera skin barrier on IAD prevention in immobility patients.

Effect of Aloe Vera Skin Barrier Administration on IAD Prevention with Control as a Comparison in Immobility Patients

Aloe vera can be used for treatment outside skin conditions such as eczema, wounds, and burns. Aloe vera can also be used as a pain and inflammation reduction. Aloe vera can also be used as an antiseptic and antibiotic. Aloe vera produces 6 antiseptic agents: lupeol, salicylic acid, urea nitrogen,

cinnamonic acid, phenol, and sulphur. All of these substances are classified as antiseptics because they can kill germs or control the formation of fungal and viral bacteria (Arora, 2022).

Aloe Vera also Prevents the migration of PMN (neutropHil) cells to inflamed venous tissue so that the venous inflammatory process can be inhibited. The content of amino acids, glycoproteins, and aloe-emodin in aloe vera can accelerate the development of new cells in the process of regeneration of the epithelium of blood vessels.

According to the results of the study, it can be seen that the average value of immobility patients who experience IAD in the Aloe Vera group is 0.21. In the control group, the average value of immobility in patients with IAD is 0.75. The results of statistical tests using the Mann-Whitney test explained the effect of aloe vera skin protection on preventing IAD in immobility patients at Raja Martapura Hospital. This can be seen in the p-value = 0.011, which means an average difference in IAD between patients given skin barier aloe vera and those not given skin barrier aloe vera.

Furthermore, the study results obtained in the observation sheet of the IAD Severity Categorisation Tool showed that patients who were given aloe vera skin barriers which did not get IAD 11 people, IAD category 1, namely 3 people and category 2, namely 1 person. In comparison, the control group who did not get IAD 7 people, IAD category 1, namely 5 people and category 2, namely 3 people. Among the two groups of aloe vera and control, the number of patients affected by IAD was more common in the control group than in the intervention group, given the aloe vera skin barrier.

The ability of aloe vera can also be used for wound healing. Based on research (Goldstein, 2015) about Aloe Vera (Aloe vera) for wound healing, it is known that the healing method can be helped by natural remedies, namely by giving aloe vera gel topically, which can help accelerate wound healing because aloe vera plants can increase the breeding of plant species.

Based on research by Javed (2021) on the effect of aloe vera administration on burn patients, it is known that burns that have been given aloe vera more quickly undergo a healing process and capitalization of skin tissues because in aloe vera there is antiseptic, anti-inflammatory content and can increase tissue granulation.

Aloe vera gel can moisturize the skin because it has a high water content in aloe vera. According to (Kreidel, 2021), the composition of the aloe gel consists of water, and the rest are those nutrient substances necessary for the body. The water content in aloe vera is 94.83%. This water content can make the skin moist to avoid dryness.

Aloe vera contains the active substance lignin, which has a high absorption ability to facilitate the cream's absorption into the skin or mucosa (Lin, 2017). The mucopolysaccharides in aloe vera help bind to skin moisture so that water is retained inside the skin layer, as well as stimulating fibroblasts that produce collagen and elastic fibres that make the skin more elastic and reduce wrinkles. Aloe vera's amino acid and zinc content also reduces rough skin and acts as an astringent to tighten skin pores. (Norman, 2008).

Aloe vera contains Vitamin A, which stimulates the formation of collagen so that it spurs epithelialization. Aloe Vera also contains Vitamin E, an antioxidant that suppresses free radicals to prevent wider skin cell damage (Kreidel, 2021). Furthermore, according to (Lin, 2017), one of the strategies to prevent IAD is to use a moisturizer. Based on this, using aloe vera cream can help immunomobility patients prevent exposure to IAD.

Effect of Olive Oil Skin Barrier Administration on IAD Prevention with Control as a Comparison in Immobility Patients

Olive oil is an oil extracted from olives (Olea europaea). Olive oil has been widely used in cosmetic products, such as skin and hair care formulations (Panahi, 2015). Virgin olive oil extract contains 98% to 99% triglycerides and 1% to 2% minor components.

In triglycerides, the main fatty acids are represented through monounsaturated fatty acids (oleic), with a small amount of saturated fatty acids (palmitic, stearic) and the presence of long-chain saturated fatty acids (linoleic and a-linolenic) accompanied by their minor components in the form of a-tocopherol, phenol compounds, carotenoids (ß-carotene and lutein), squalene and phytosterols, all of which have the properties of effect effects as a skin protector.

This is in line with research (Umborowati, 2015) which explains that after 30 minutes of exposure to UV rays, the skin's atokoferol levels have been reduced by 50% to 60%. The topical application of a-tocopherol reduces skin damage (Javed, 2021).

Antioxidants contained in olive oil can find free radicals and protect from peroxidation. Important compounds in olives include phenolic acids, phenolic alcohols, flavonoids, and secoiridoids with olive phenolic alcohols in the form of hydroxytyrosol and tyrosol (Lin, 2017).

Based on the study's results, it is known that in the olive oil group, the average value of immobility patients who experience IAD is 0.14. Statistical tests using the Mann-Whitney test explained the effect of giving olive oil skin barriers on IAD prevention in immobility patients. This can be seen in the p-value = 0.003, which means that there is a difference in the average IAD between patients who are given olive oil skin barrier and patients who are not given olive oil skin barrier.

The results obtained based on the IAD Severity Categorisation Tool showed that patients who were given olive oil skin barriers not subject to IAD were 12 people, IAD category 1 was 3 people, and category 2 was absent. In the control group, 7 people were not subject to IAD, category 1 IAD was 5 people, and category 2 was 3 people.

Among the olive oil and control groups, the number of patients affected by IAD was more common in the control group who were not given a skin barrier than in the intervention group given the skin barrier olive oil.

The basis of the causes of IAD is moisture since reducing exposure to moisture will significantly reduce the incidence of IAD. Structured skincare using the right products designed to keep moisture out of the skin, in combination with proper treatment of any secondary infection, is important (Lin, 2021).

According to (Zareen, 2016), olive oil can affect skin moisture problems. Moisturizers are complex formulations designed to improve skin hydration mechanisms and maintain the skin's shape and function from various influences such as dry air, sunlight, old age, temperature, various skin diseases, and diseases that can accelerate the evaporation of water.

In line with the study's results (Panahi, 2015), there was a decrease in the degree of rash, which the administration of olive oil influenced for 3 days in the morning and the evening of as much as 2.5 ml. Olive oil contains smooth acid as an anti-inflammatory, cell membrane reconstruction, and dermis containing vitamin E, polypHenol, and chlorophyll, preventing cell oxidation. The same according to (Fallahi, 2022), The efficacy of olive oil (Olive Oil) says that olive oil (Olive Oil) contains emollients that are beneficial for maintaining damaged skin conditions such as psoriasis and eczema.

Skincare so that you avoid pores and skin damage can be overcome by giving olive oil because olive oil contains a variety of fatty acids and vitamins, especially a source of vitamin E, which functions as an antioxidant herb that functions as a skin protector—vital cell systems, in particular cellular membranes from free radical damage.

Free of charge. Vitamin E is useful for protecting pink blood cells that deliver oxygen throughout the body's tissues from harm. Vitamin E also performs a very important function for pores and skin fitness, namely by maintaining, increasing the elasticity and humidity of pores, stopping the ageing process, protecting the skin from the dangers of ultraviolet radiation, and accelerating the wound recovery process (Lin, 2017).

Differences in the Effect of Aloe Vera, Olive Oil, and Control on IAD Prevention in Patients

IAD or Incontinence Associated Dermatitis is an inflammation of the skin in the perineal area produced by urinary or faecal Incontinence, which manifests in redness, damage, fungal infections, or rashes. Skin damage occurs in various areas of the perineum, such as gluten, in the outer gluten and thighs, and in the groin area, which can cause discomfort and pain in patients (Norman, 2008).

Skincare in this study in the control group and the intervention group. Skin care in the control and intervention groups was carried out as usual, that is, cleaned with soap and clean water and dried. Skin care in the control and intervention groups was almost the same: cleaning, drying and smearing aloe vera cream and olive oil on the skin area around the perineal that was no longer irritated/wounded.

Based on the results of the study, it is known that there are differences in IAD values between the three groups, namely the aloe vera group, olive oil, and the control group (p = 0.003). The average value

of the control is the highest. This means that patients who do not get aloe vera or olive oil skin barriers experience IAD while undergoing treatment. Furthermore, it can be seen that the lowest average value is olive oil, which means that the use of olive oil is the best in preventing IAD.

The results based on the IAD Severity Categorisation Tool showed that the control group was not subject to IAD 7 people, IAD category 1, 5 people, and category 2, 3 people. Among the aloe vera, olive oil, and control groups, the number of patients affected by IAD occurred more in the control group who were not given a skin barrier. In contrast, aloe vera affected by IAD reached category 2, and the olive oil only reached category 1.

Furthermore, the results of the study showed that in the control of the majority of patients aged in the range of 56-65 years, namely 6 people (40.0%) and 2 people (13.3%) who were aged > 65 years, this caused the average iad value in control to be higher. Old age (neonatal or elderly) is one of the risk factors for risk of damage to the integrity of the skin (2).

On the other hand, in patients who get olive oil, most patients are also at the age of 56-65 years, namely as many as 7 people (46.6%). Still, none of them is>65 years old, and the administration of olive oil is known to help treat scars and areas where there are wrinkles and cracks due to dry skin or ageing skin cell cells.

Based on the results of the study that the administration of aloe vera skin barrier to the prevention of Incontinence associated dermatitis in immobility patients has changed from 15 samples only 3 people who were affected by Incontinence Associated Dermatitis in category 1 and 1 person in category 2, while olive oil was more significant because from 15 samples only 3 people experienced Incontinence Associated Dermatitis to category 1 only, and a control group of 15 samples who had Incontinence Associated Dermatitis 5 people in category 1 and 3 people in category 2. So it can be inferred from the group of aloe vera, olive oil, and control that among these three groups, olive oil is the best skin barrier for now.

The skin is the most important and the most massive human organ that weighs about 16% of the entire body weight. The skin has many abilities, including thermoregulation, protective, metabolic, and regulation functions. With the weightage, skin protection function will decrease both from immunological and biochemical barriers (2).

According to (5), the skin is protective. When this protector is damaged due to various causes, then the skin cannot carry out its functions adequately. Therefore it is very important to restore its integrity as quickly as possible. Wound healing involves a complex process. This is the basis for the importance of giving a skin barrier to damaged skin, such as in IAD.

The basic components of moisturizing consist of occlusive, humectant, and emollient. Moisturizing treatment aims to keep the skin's moisture content between 10% to 30% and can reduce the evaporation of water. Skin moisturizing products are recommended daily (Arora, 2022).

Aloe vera extract is a dosage form widely used in dermatology products. Aloe vera is widely used as a moisturizing product formulation that acts on a mechanism to improve skin hydration.

According to (Fallahi, 2022), it is appropriate that the side effects of aloe vera have been proven in the form of a topical product with a good moisturization service. The moisturizing effect of aloe vera gel, due to a mixture of water components and polysaccharides, creates a jelly-like consistency that retains water in the mixture and minimizes its evaporation, providing a moist environment when applied to drying tissues and humectant properties that increase moisture retention in tissues.

The administration of aloe vera, especially the mucus applied to wounds, can speed up the wound healing process because aloe vera contains glycoproteins, which can prevent pain and accelerate repair, and glucomannan, which is a compound enriched with polysaccharides that can affect the growth of fibroblasts. And stimulates cell activity and proliferation and increases collagen production and secretion to accelerate wound recovery and stimulate skin growth (Lin, 2017).

Humectants draw water into the skin, causing mild swelling of the stratum corneum, making the skin feel smoother and reducing wrinkles. Some examples of humectants are glycerin, sorbitol, sodium hyaluronic, urea, propylene glycol, hydroxy-α acids, and sugars.

Olive oil also contains various vitamins such as vitamins A, D, and E and a small number of mineral substances. Olive oil in moisturizing formulations is a protector/occlusive and emollient on the skin. The mechanism of action of this moisturizer is found in aloe vera and olive oil which are used as a skin barrier in overcoming IAD.

4. CONCLUSION

The characteristics of respondents in aloe vera aged the majority ranged from 17-25 years, the gender of the majority of men, the majority of high school education, the majority of occupations as self-employed and IRT. The olive oil group aged the majority of patients in the range of 56-65 years, the gender of the majority of women, the majority of high school education, and the majority of occupations as IRT. The majority control group ranges from 56-65 years; the gender is majority male, the majority of high school education, and the majority occupation is IRT. The average patient with Incontinence associated dermatitis in the control group is greater than aloe vera and olive oil, so the provision of protection on the skin of aloe vera and olive oil influences the occurrence of Incontinence associated dermatitis. The average patient with Incontinence associated dermatitis in the olive oil group is lower than the average aloe vera. It can be concluded that olive oil has a greater influence than aloe vera on the prevention of Incontinence associated dermatitis.There is an effect of protecting the skin using aloe vera in the intervention group on the prevention of Incontinence associated dermatitis.There is an effect of giving olive oil skin barriers in the intervention group on the prevention of Incontinence associated dermatitis. There was a difference in the average value of protection on the skin using aloe vera, olive oil, and control against the prevention of Incontinence associated dermatitis, with the average value of the control being the highest and olive oil with the lowest average. So it can be concluded that olive oil is the best skin barrier for now in preventing Incontinence-associated dermatitis among these three groups. Providing skin protection using aloe vera and olive oil to patients in preventing the occurrence of Incontinence associated dermatitis can be given 3 times a day (morning, afternoon, and night) and applied for 5 days using gentle techniques and minimal friction and avoiding rubbing the skin.

REFERENCES

[1]. Atikasari, R. G., Malik, D. A., & Widayati, R. I. (2021). Systematic Review and Meta-analysis of the Effectiveness of Topical Aloe vera on Diaper Dermatitis with Parameters Degree of Diaper Dermatitis with Scale. Dermatol Res. 2021; 3 (2): 1-11. Correspondence: Jl. Prof. Soedarto, Tembalang, Tembalang Sub-district, Kota Semarang District, Central Java, 50275.

[2]. Alhasso, B., Ghori, M. U., & Conway, B. R. (2022). A systematic review on the effectiveness of essential and carrier oils as skin penetration enhancers in pharmaceutical formulations. Scientia Pharmaceutica, 90(1), 14.

[3]. Arora, P., Shiveena, B., Garg, M., Kumari, S., & Goyal, A. (2022). Curative Potency of Medicinal Plants in Management of Eczema: A Conservative Approach. Phytomedicine Plus, 100256

[4]. Baranoski, S., & Ayello, E. A. (2008). Wound care essentials: Practice principles. Lippincott Williams & Wilkins.

[5]. Fallahi, M., Soroush, A., Sadeghi, N., Mansouri, F., Mobaderi, T., & Mahdavikian, S. (2022). A randomized controlled trial is a comparative evaluation of the effect of aloe vera gel, olive oil, and compound aloe vera gel-olive oil on preventing pressure ulcers. Advanced Biomedical Research, 11.

[6]. Goldstein, D. R., Vogel, K. M., Mureebe, L., & Kerstein, M. D. (2015). Differential diagnosis: Assessment of the lower-extremity ulcer: Is it arterial, venous, or neuropathic? WOUNDS-A COMPENDIUM OF CLINICAL RESEARCH AND PRACTICE, 10(4), 125-131.

[7]. Javed, H., & Shah, S. N. H. (2021). Mild–Moderate Acne TreatmentMild–Moderate Acne Treatment and Skin Allergic Reaction Treatment Using Aloe vera Emulgel-A Case Study. RADS Journal of Pharmacy and Pharmaceutical Sciences, 9(2), 148-150.
[8]. Kreidel, M. K., & Jhaveri, M. (2021). Introduction to Essential Oils and Essential Oil Processing. In Integrative Dermatology (pp. 99-122). Springer, Cham.
[9]. Lin, T. K., Zhong, L., & Santiago, J. L. (2017). Anti-inflammatory and skin barrier repair effects of topical application of some plant oils. International journal of molecular sciences, 19(1), 70
[10]. Negara, C. K., Erna, E., & Anna, A. (2018). The effect of cucumber juice (cucumis sativus) toward hypertension of elderly at tresna werdha budi sejahtera social institution of banjarbaru south borneo 2017. IJNP (Indonesian Journal of Nursing Practices), 2(1), 16-21.
[11]. Negara, C. K., Erliani, S., & Gardis, F. (2020). The Influence of Macaranga Leaf Tea as A Complementary Nursing Therapy Solution for Patients with Diabetes Mellitus in The Deabetic Foot Poly of Ulin Regional Public Hospital Banjarmasin. j-HIMEL, 1(1), 1-5.
[12]. Negara, C. K. (2017). Pengaruh ekstrak kelakai (stenochlaena palustris) terhadap kadar hemoglobin pada tikus putih (rattus norvegicus). Borneo Journal of Pharmascientech, 1(1).
[13]. Norman, R. A., & Menendez, R. (2008). Structure and function of ageing skin. In Diagnosis of ageing skin diseases (pp. 5-10). Springer, London.
[14]. Nuzantry, J. K., & Widayati, R. I. (2015). Efektivitas campuran ekstrak aloe vera dan olive oil dalam formulasi pelembab pada kekeringan kulit (Doctoral dissertation, Faculty of Medicine).
[15]. Panahi, Y., Izadi, M., Sayyadi, N., Rezaee, R., Jonaidi-Jafari, N., Beiraghdar, F., ... & Sahebkar, A. (2015). Comparative trial of Aloe vera/olive oil combination cream versus phenytoin cream in treating chronic wounds. Journal of wound care, 24(10), 459-465.
[16]. Umborowati, M. A., Anggraeni, S., & Sigit Prakoeswa, C. R. (2021). The Role of Aloe vera and Centella Asiatica to Improve Skin Barrier Function in Indonesian Batik Workers. Indian Journal of Forensic Medicine & Toxicology, 15(3).
[17]. Zareen, S., Khan, S. N., Adnan, M., Ur, H., Rehman, M. A., Saeed, K., ... & Ali, M. (2016). A mixture of olive oil and Aloe vera gel: A natural mosquito repellent and a skin moisturizer. International Journal of Mosquito Research, 3(4), 48-49.