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## Effectiveness Of Skincare Therapy And Topical Treatment In The Management Of Perioral Dermatitis At Geps Aesthetic Clinic

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### Abstract

*Effectiveness of Skincare Therapy and Topical Treatment in the Management of Perioral Dermatitis at Geps Aesthetic Clinic. Perioral dermatitis (PDO) is an inflammatory skin disease characterized by erythema, papules, and pustules around the mouth. Skincare and topical treatments are often used to reduce inflammation and improve the skin barrier, but the effectiveness of their combination in reducing the severity of DPO is rarely evaluated. This study aims to analyze the effectiveness of skincare and topical treatments in the management of DPO at Geps Aesthetic Clinic. The study used an observational analytical design with a quantitative approach based on medical records. The sample consisted of 68 patients from January 2024–April 2025 using a total sampling technique. Severity was assessed using the Perioral Dermatitis Severity Index (PODSI) from month 0 to month 3 and analyzed using the Mann–Whitney test. The results showed a significant decrease in PODSI scores in the first ( $p<0.001$ ), second ( $p=0.043$ ), and third ( $p<0.001$ ) months. In the third month, 72.1% of patients were in the mild category and 2.9% were in the severe category. The combination therapy was effective in gradually reducing the severity of DPO over three months.*

**Keywords:** Perioral Dermatitis, Skincare, Topical Therapy, PODSI.

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## INTRODUCTION

Perioral dermatitis (DPO) is an inflammatory skin disease that commonly occurs around the mouth (Harlim, 2017). This condition is more common in women of reproductive age, especially those aged 20–50 (British Association of Dermatologists, 2023). Globally, the prevalence of DPO reaches 0.5–1% per year (Hoepfner et al., 2020). In Indonesia, based on 2018 Riskesdas data, the prevalence of DPO reached 6.8% and tends to increase annually (Ministry of Health of the Republic of Indonesia, 2018). Data from the Geps Aesthetic Clinic shows that the prevalence of DPO is even higher, reaching 42%.

Perioral dermatitis (DPO) is an inflammatory skin condition that can cause redness, rashes, papulovesicles, small papules, pustules, and pain in the oral area (Rodríguez-Martín et al., 2017). One of the main factors contributing to DPO is the long-term use of topical corticosteroids without a doctor's prescription (Wahyudi and Nurhayati, 2022). Other contributing factors include the use of cosmetics containing irritants such as parabens, exposure to fluoride from toothpaste, exposure to ultraviolet light, and hormonal changes (Tan et al., 2021).

Skincare therapy is a series of skin care products formulated to address various skin problems (Andrini, 2023). This therapy plays a crucial role in maintaining moisture, reducing irritation, and helping restore impaired skin barrier function. Skincare products generally include moisturizers containing ceramides, hyaluronic acid (HA), and antioxidants that work synergistically to repair and maintain skin health (Butarbutar and Chaerunisaa, 2021; Harwood, Nassereddin, and Krishnamurthy, 2025).

Topical treatment involves applying medication directly to the body's surface to treat infections, inflammation, or other skin disorders. In the management of DPO, topical treatment involves the use of antibiotic creams such as metronidazole, erythromycin, or clindamycin (Raina et al., 2023; PERDOSKI, 2021).

The high number of DPO cases at Geps Aesthetic Clinic highlights the need to evaluate the therapeutic approaches used. However, scientific data on the effectiveness of skincare and topical

treatments is limited. Therefore, this study was conducted to objectively assess the effectiveness of these therapies in reducing the severity of DPO.

## RESEARCH METHODS

This study used a quantitative approach with an observational analytical design to analyze the effectiveness of skincare therapy and topical treatments in the management of DPO. The research data were obtained from secondary data in the form of DPO patient medical records. Furthermore, patients were analyzed based on clinical information documented in the medical records according to the predetermined research variables. This study was conducted at Geps Aesthetic Clinic in 2025 after the issuance of the ethical clearance letter number 020/EC/KEPK-FK/UNIMUS/2025. The study population was all DPO patients who underwent skincare therapy and topical treatments between January 2024 and April 2025 using a total sampling technique. Respondents numbered 68 patients who met the inclusion and exclusion criteria.

Inclusion criteria include patients with a diagnosis of DPO who undergo skincare therapy and topical treatment until completion, while exclusion criteria include patients with other skin diseases or who undergo systemic therapy.

The severity of perioral dermatitis was assessed using the Perioral Dermatitis Severity Index (PODSI), which assesses erythema, papules, and scales with a score range of 1–9. Assessments were conducted at months 0, 1, 2, and 3. Data were analyzed univariately to identify the distribution of PODSI scores and bivariately using the Mann–Whitney test to assess differences in scores before and after therapy.

## RESULTS AND DISCUSSION

### Distribution of PODSI scores

Based on the data in the table, the distribution of PODSI scores for DPO patients in month 0 shows that the majority of DPO patients were in the poor category (54.4%). In month 1, the majority of DPO patients were in the moderate category (44.1%). In month 2, the majority of DPO patients were in the moderate category (47.1%). In month 3, the majority of DPO patients were in the mild category (72.1%).

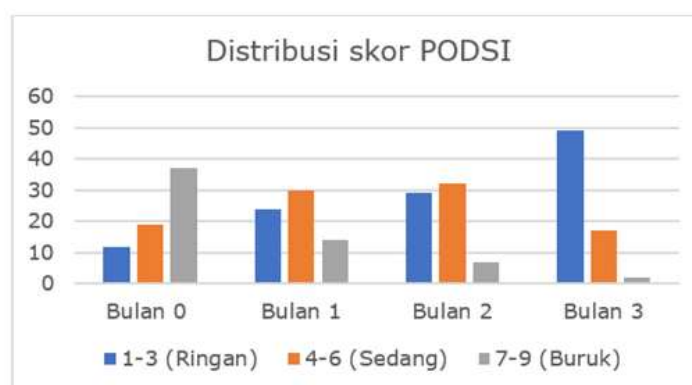


Figure 1. Distribution of PODSI scores for DPO patients in months 0-3

### Bivariate test of PODSI scores months 0-3

Based on Figure 2, it shows that the results of the statistical tests for month 0 and month 1 obtained a p-value of  $<0.001$  ( $p < 0.05$ ). The results of the statistical tests for month 1 and month 2 obtained a p-value of 0.043 ( $p < 0.05$ ). The results of the statistical tests for month 2 and month 3 obtained a p-value of  $<0.001$  ( $p < 0.05$ ). The results of the statistical tests for month 0 and month 3 obtained a p-value of  $<0.001$  ( $p < 0.05$ ). The results of the comparison of PODSI scores in each month showed a significant decrease in PODSI scores.

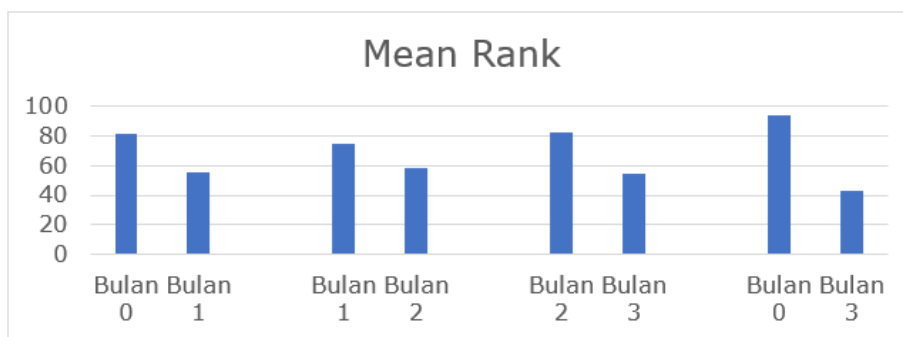


Figure 2. Comparison of PODSI scores of patients in months 0-3

## DISCUSSION

This study demonstrated that the combination of skincare therapy and topical treatment resulted in a statistically significant reduction in PODSI scores from month 0 to month 3. This reduction was gradual and consistent, indicating that the therapeutic approach used was effective in managing DPO.

At month 0, the majority of patients were in the poor category (54.4%), reflecting an active inflammatory condition characterized by diffuse erythema, papules, desquamation, and the spread of lesions in the periorbital area. A poor PODSI score indicates skin barrier dysfunction, a central factor in the pathogenesis of DPO (Brzezinski and Borowska, 2021). Damage to the stratum corneum leads to increased transepidermal water loss (TEWL), facilitates irritant penetration, and triggers the activation of the immune response through the release of proinflammatory cytokines and the recruitment of inflammatory cells to the perioral area (Balić et al., 2019; Del Rosso et al., 2016).

After one month of therapy, there was a statistically significant decrease in the PODSI score ( $p < 0.001$ ). This initial improvement indicates a controlled inflammatory response (PERDOSKI, 2021). Pharmacologically, the drug used is pimecrolimus, but its use is only in patients in the mild to moderate category. Pimecrolimus functions as a non-steroidal anti-inflammatory that can relieve skin inflammation, reduce papules and redness, and without a rebound effect (Rodríguez-Martín et al., 2017). In patients with severe DPO, pimecrolimus is used in combination with erythromycin. Erythromycin works by inhibiting bacterial protein synthesis and suppressing inflammatory mediators, making it effective in reducing papulopustules. The use of erythromycin is only temporary and cannot be used long-term because it can lead to antibiotic resistance (Dekotyanti et al., 2022; Farzam Nessel and Quick, 2023). The skincare product used is a moisturizer containing HA, centella asiatica, and allantoin, which can hydrate the skin and help repair the skin barrier. This skin barrier repair reduces irritant penetration and reduces the activation of inflammatory pathways, ultimately accelerating clinical improvement (Harwood, Nassereddin, and Krishnamurthy, 2025; Brzezinski and Borowska, 2021).

In the second month, although there was improvement, most patients remained in the moderate category. In the third month, the score decreased again significantly, with the majority of patients in the mild category. This indicates that improvement in DPO occurs gradually. The process of resolving inflammation and regenerating the epidermis takes time, especially in conditions of long-standing barrier dysfunction (Knoedler et al., 2023). Physiologically, restoration of stratum corneum integrity requires a keratinocyte regeneration cycle of approximately 28 days, so optimal clinical improvement does not occur instantly (Del Rosso et al., 2016; Shankar, Ghosh, and Chaudhuri, 2018).

The results of this study also support the concept of zero therapy, which involves completely discontinuing corticosteroids and reducing the use of irritating products. Therefore, an approach based on skin barrier repair and non-steroidal anti-inflammatory control is considered safer in the long term (Mihan and Ayhan, 2019).

Overall, these results demonstrate that the combination of topical therapy and skincare use, along with education on cessation of irritant substances, is an effective approach to significantly reduce PODSI scores and gradually and consistently improve patients' skin conditions.

## CONCLUSION

This study found that the combination of skincare therapy with topical treatment significantly reduced the Perioral Dermatitis Severity Index (PODSI) score in 68 perioral dermatitis patients at Geps Aesthetic Clinic, from the majority in the poor category at month 0 to mild at month 3 (72.1% of patients), with a p value <0.05 for each monthly comparison using the Mann-Whitney test. This approach, involving pimecrolimus or erythromycin combined with a moisturizer containing hyaluronic acid, centella asiatica, and allantoin, effectively controlled inflammation and gradually repaired the skin barrier.

Study This study was an observational and analytical study based on secondary medical record data, making it susceptible to documentation inconsistencies, incomplete variables such as specific risk factors, and a lack of direct causal control without prospective intervention. Suggestions for future research include a randomized controlled trial design with a control group, long-term follow-up beyond three months, and evaluation of confounding factors such as patient compliance and antibiotic resistance. Practically, these results imply recommendations for skincare-based non-steroidal therapy protocols in aesthetic clinics for the safe and effective management of DPO, accompanied by education on discontinuing irritants such as topical corticosteroids to prevent rebound.

## REFERENCES

- Harlim, A. (2017). Textbook of dermatology and venereal disease: Basic dermatological diagnosis (1st Edition). Faculty of Medicine, Christian University of Indonesia.
- British Association of Dermatologists. (2023). Perioral dermatitis. DermNet NZ.
- Hoepfner, A., Marsela, E., Clanner-Engelshofen, B.M., Horvath, ON, Sardy, M., French, L.E., et al. (2020). Rosacea and perioral dermatitis: A single-center retrospective analysis of the clinical presentation of 1032 patients. *Journal der Deutschen Dermatologischen Gesellschaft*, 18(6), 561–570.
- Ministry of Health of the Republic of Indonesia. (2018). National report of Riskesdas 2018. Health Research and Development Agency.
- Rodríguez-Martín, M., Sáez-Rodríguez, M., Carnerero-Rodríguez, A., Rodríguez-García, F., de Paz, R.C., Sidro-Sarto, M., et al. (2017). Treatment of perioral dermatitis with topical pimecrolimus. *Journal of the American Academy of Dermatology*, 56(3), 529–530.
- Wahyudi, A., & Nurhayati, R. (2022). Pharmacovigilance: A literature study of the adverse effects of topical corticosteroid use on the face. *Indonesian Journal of Pharmacy and Natural Products*, 5(2).
- Tan, ST, Pratiwi, YI, Chandra, CC, & Elizabeth, J. (2021). Educational book on dermatology and venereal disease (1st Edition). Faculty of Medicine, Tarumanagara University.
- Andrini, N. (2023). Characteristics and skin care for Asian people. *Pandu Husada Journal*, 4(3).
- Butarbutar, MET, & Chaerunisaa, AY (2021). The role of moisturizers in treating dry skin conditions. *Pharmaceutical Journal*, 6(1), 56–69.
- Harwood, A., Nassereddin, A., & Krishnamurthy, K. (2025). Moisturizers. In *StatPearls*. StatPearls Publishing.
- Raina, N., Rani, R., Thakur, V. K., & Gupta, M. (2023). New insights in topical drug delivery for skin disorders: From a nanotechnological perspective. *ACS Omega*, 8(22), 19145–19167.
- Indonesian Association of Dermatologists and Venereologists. (2021). Clinical practice guidelines for Indonesian dermatologists and venereologists. PERDOSKI.
- Brzezinski, P., & Borowska, K. (2021). Facial dermatoses: Perioral dermatitis. Prowess Publishing.

- Balić, A., Vlašić, D., Mokos, M., & Marinović, B. (2019). The role of the skin barrier in periorificial dermatitis. *Acta Dermatovenerologica Croatica*.
- Del Rosso, J.Q., et al. (2016). Understanding the epidermal barrier in healthy and compromised skin: Clinically relevant information for the dermatology practitioner. *Journal of Clinical and Aesthetic Dermatology*, 9(4 Suppl 1).
- Dekotyanti, T., Silvia, E., Triwahyuni, T., & Panonsih, RN (2022). Effectiveness of erythromycin antibiotic against *Propionibacterium acnes* bacteria using diffusion method in acne vulgaris. *Molucca Medica*, 15(1), 74–78.
- Farzam, K., Nessel, T. A., & Quick, J. (2023). Erythromycin. In StatPearls. StatPearls Publishing.
- Knoedler, S., et al. (2023). Regulatory T cells in skin regeneration and wound healing. *Military Medical Research*, 10(1), 49.
- Shankar, K., Ghosh, S., & Chaudhuri, S. (2018). Topical therapy in perioral dermatitis: A clinical study on treatment response within 4–12 weeks. *Journal of Dermatological Treatment*.
- Mihan, R., & Ayhan, M. (2019). Periorificial dermatitis: An update on pathophysiology and management, including zero therapy approach. *Dermatology Reports*.