

Case Series

Clobetasol propionate 0.025%: a topical therapeutic for skin diseases

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ABSTRACT

The most widely recommended drugs for the treatment of a variety of dermatoses are topical corticosteroids (TC). These medications are approved for the treatment of inflammatory and pruritic manifestations of dermatologic disorders due to their powerful, symptom-relieving impact. Clobetasol propionate (CP) is the most popular TC used to relieve itching, redness, and edema caused by skin disorders. Topical corticosteroids exhibit anti-inflammatory, anti-pruritic, and vasoconstrictive activities. Clobetasol propionate binds to cytoplasmic glucocorticoid receptors and activates glucocorticoid receptor-mediated gene expression, resulting in the production of anti-inflammatory proteins and suppression of the production of inflammatory mediators. The effectiveness, safety, and clinical experience of utilizing CP 0.025% topical therapy for the treatment of various dermatologic disorders are discussed in this case series.

Keywords: Clobetasol propionate 0.025%, Plaque psoriasis, Psoriasis, Topical corticosteroids

INTRODUCTION

Topical corticosteroids (TC) substantially contribute to the treatment of a variety of dermatologic disorders. Because of the large variety of TC-based formulations and their high performance, they are employed to treat diverse disease stages and anatomic locations.¹ Plaque-psoriasis is the most prevalent kind of psoriasis as it affects 85–90% of patients and is characterized by elevated plaques that are oval or irregularly shaped, red, clearly defined, and coated with silvery scales. Clobetasol propionate (CP) 0.025% cream is effective in treating moderate-to-severe clinical signs and symptoms of plaque psoriasis. CP is the strongest

topical steroid approved for use.² It inhibits cytokine production and has anti-inflammatory, immunosuppressive, and antimitotic activities. It also alters the growth, differentiation, and function of diverse cells. Propylene glycol, short-chain alcohols (e.g. ethanol), and sorbitan sesquioleate, a sorbitol-based emulsifier that is a frequent allergen in many TC formulations, are all absent from the 0.025% cream formulation of CP. CP is a topical TC therapy that is used twice a day to treat moderate-to-severe plaque psoriasis in people of age 18 and above. The addition of pharmaceutical-grade diethylene glycol monoethyl ether to CP 0.025% significantly improves its effectiveness.³ The effectiveness, safety, and clinical

experience of employing CP 0.025% to treat diverse dermatoses are discussed in this case series.

CASE SERIES

Case 1

Management of plaque psoriasis with Impoyz™ (CP) cream 0.025%

A 46-year-old woman presented with mild, itchy, erythematous, squamous plaques on her back and legs. She had no other comorbidity, occupational risk, or significant family history. No abnormality was detected in her vitals and systemic findings, and psychological or social sequelae were absent. The lesions present on the trunk and lower legs were 6×4 cm in size. There was marked inflammation around the center of the lesion, although the center of the lesion was clear. The skin was papular and the plaque was warm, itchy, and scaly (Figures 1a and c). Approximately 40% of the body surface area (BSA) was covered with the lesions. The patient was diagnosed with plaque psoriasis and was prescribed a topical application of Impoyz™ (CP) cream 0.025% at bedtime. The patient was also advised to use a topical methotrexate and an antiallergic for better management of the indication.

At the follow-up visit on day 14, erythema, scaling, plaque elevation, and itching had decreased (Figures 1b and d). Overall, a moderate improvement was observed in the severity of the disease throughout the treatment.

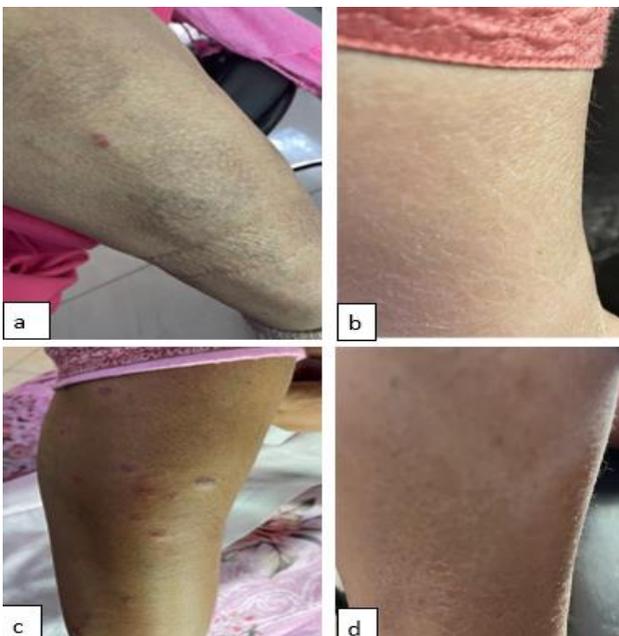


Figure 1: (a) Pre-treatment image of the lesions on the right leg, (b) post-treatment image of the lesions on the right leg, (c) pre-treatment image of the lesions on the left leg, and (d) post-treatment image of the lesions on the left leg.

Expert opinion

Impoyz™ (CP) cream 0.025% is safe for use with no atrophy telangiectasis. It is moderately effective and the patient exhibited good compliance. It can be considered for the management of psoriasis.

Case 2

Efficacy of topical Impoyz™ cream 0.025% in a male patient with psoriasis

A 12-year-old boy presented with severe itching and spots over the body surface for the past 6 months. He had no significant medical or personal history. There was no relevant family history or occupational risk factors. On examination, his vitals and systemic findings were within normal limits. He had no psychological or social sequelae. The lesions were located all over the body. The lesions were large and were present mostly on the abdomen and face. There was no inflammation around the lesions. The skin had a rash, and was tender, warm, scaly, and itchy (Figure 2a). The patient was diagnosed with psoriasis. He was prescribed topical Impoyz™ (CP) cream 0.025% for application to the affected skin area twice daily for 15 days. He was instructed to wear light and clean clothes.

At the next follow-up visit after 15 days, an improvement in scaling, erythema, and itching was observed. There was a reduction in facial redness and flares and relapses. Overall, the disease severity had reduced after the treatment (Figure 2b).

Expert opinion

Impoyz™ (CP) cream 0.025% is associated with very high safety. It is not associated with systemic side effects. It can be considered a first-line treatment for psoriasis due to its proven efficiency and minimal side effects.

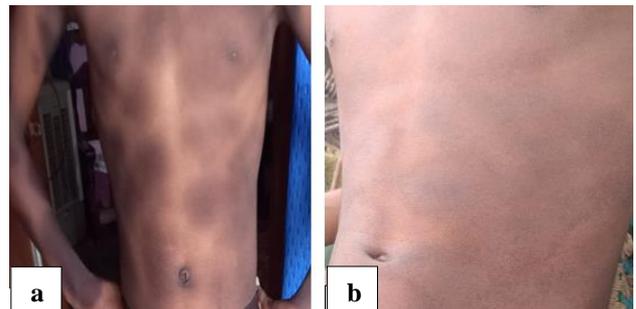


Figure 2: (a) Pre-treatment image of the lesion, and (b) post-treatment image of the lesions.

Case 3

Management of palmer psoriasis with Impoyz™ (CP) cream 0.025%

A 60-year-old male presented with itchy lesions on the palm and soles. He had hypertension and dyslipidemia. The patient also had a significant family history of atrophy. There was no history of any occupational risk factors. The patient had normal vitals but had remarks on psychological and social sequelae. The lesions were observed on both the hands and measured 1–2 cm in size. There was inflammation around the lesions and the skin was scaly and itchy (Figures 3a and c). The patient was diagnosed with hand eczema and was prescribed Impoyz™ (CP) cream 0.025% twice a day for 2 weeks.

At the follow-up visit, after 2 weeks, itching had completely disappeared, and erythema was cleared. An approximately 50% reduction in flares and relapses was observed (Figures 3b and d). Overall, a significant decrease of 80% was observed in the severity of the disease due to the treatment.

Expert opinion

Impoyz™ (CP) cream 0.025% demonstrates potent efficacy and safety with no atrophy. It can be used as first-line topical therapy for the treatment of localized lesions.

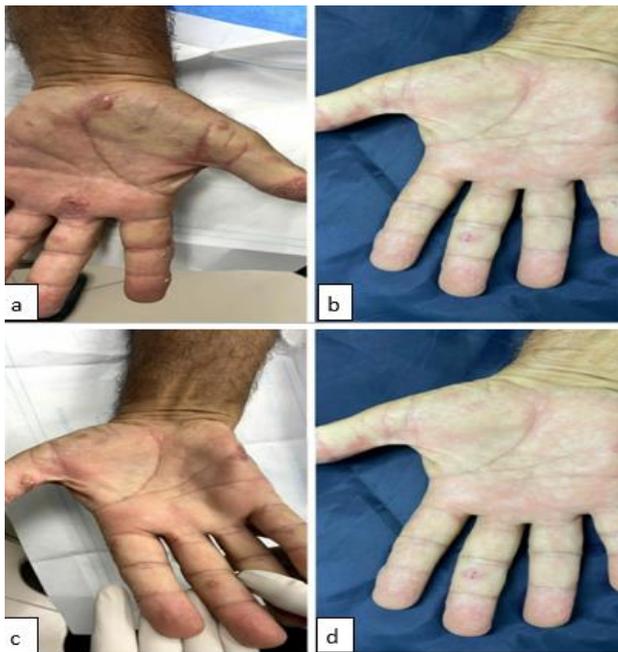


Figure 3: (a) Pre-treatment image of the lesions on the left hand, (b) post-treatment image of the lesions on the left hand, (c) pre-treatment image of the lesions on the right hand, and (d) post-treatment image of the lesions on the right hand.

Case 4

Treatment of psoriasis using topical Impoyz™ (CP) cream 0.025%

A 12-year-old girl presented with redness and burning sensation on the dorsal hand. She did not have any

comorbidity, occupational risk, or family history. Her vitals and systemic findings were normal, and she had no psychological or social sequelae. There was inflammation surrounding the lesions, and the skin was scaly with a papular and crusty rash (Figure 4a). The patient was diagnosed with psoriasis and was prescribed a topical application of Impoyz™ (CP) cream 0.025% twice daily for 3 weeks. At a follow-up visit after 3 weeks, scaling and plaque elevation had disappeared completely, and a 90% reduction in erythema and itching was observed (Figure 4b). Overall, the severity of the disease had improved by 90% upon treatment with Impoyz™ (CP) cream 0.025%.

Expert opinion

Impoyz™ (CP) cream 0.025% is very effective and safe for short-term use on the hands. It can be used as first-line therapy. The drug demonstrates a potent response and fast recovery (within 2–3 weeks) with no safety concerns. The experience of using Impoyz™ (CP) cream 0.025% was good.

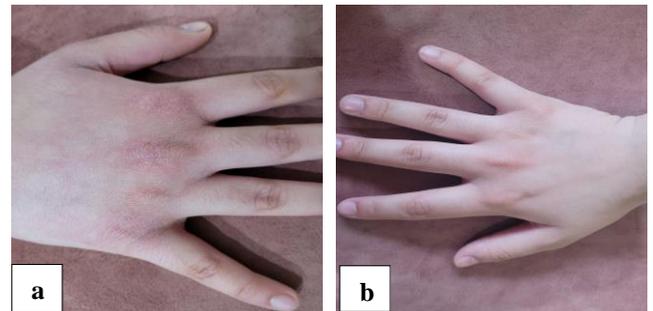


Figure 4: (a) Pre-treatment image of the lesions and (b) post-treatment image of the lesions.

Case 5

Safety and efficacy of Impoyz™ (CP) cream 0.025% in plaque psoriasis

A 65-year-old male presented with a single, well-defined plaque with thick, white lesions on the back. He had hypertension; however, no significant family history or occupational risk factor was reported. The patient had no psychological or social sequelae, and his vitals were normal. The lesions were present on the lower side of the back and were approximately 5×12 cm in size. There was inflammation around the lesions, and the center of the lesions was scaly. The skin had a rash and was itchy and scaly (Figure 5a). Up to 10% of the BSA was covered with lesions. The patient was diagnosed with plaque psoriasis and was prescribed Impoyz™ (CP) cream 0.025% to be applied twice daily for 20 days. The patient was also prescribed the antifungal itraconazole and was advised to oil the skin.

At the follow-up visit, scaling had reduced by 90%. There was an improvement in plaque elevation. There was a reduction in erythema, flares, and relapses and an 80%

reduction in itching (Figure 5b). Overall, there was an improvement in the severity of the disease with the use of topical therapy.

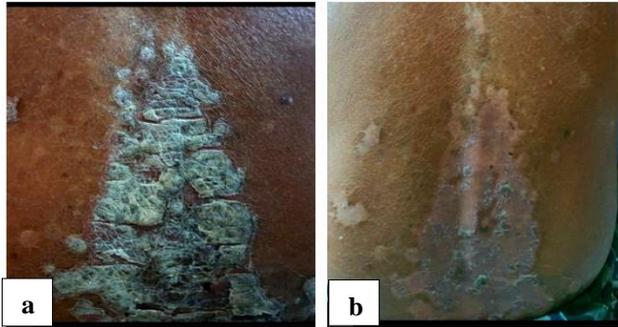


Figure 5: (a) Pre-treatment image of the lesion on the back, and (b) post-treatment image of the improved symptoms on the back.

Expert opinion

Impoyz™ (CP) cream 0.025% can be used as topical therapy in plaque psoriasis as well as in typical dermatitis. Impoyz™ (CP) cream 0.025% provided high patient satisfaction as it is well-tolerated, has a high safety profile and provides good improvement.

Case 6

Management of dry, scaly skin across the skin in the groins: a case study report

A 25-year-old female presented with itching and thick plaques in the groins and natal clefts. There was no other comorbidity, occupational risk, or significant family history. Vitals and systemic findings of the patient were within the normal range, and she had no psychological or social sequelae. The lesions were approximately 7×7 cm, 5×7 cm, and 3×5 cm in size and were present on the groins and natal cleft. There was no inflammation surrounding the lesions. The skin was tender and warm (Figure 6a). The patient was diagnosed with psoriasis and was prescribed a topical application of Impoyz™ (CP) cream 0.025% to be applied twice daily for 1 week. The patient was also advised to keep the area dry for better management of the indication.

At the follow-up visit after a week, erythema, scaling, plaque elevation, flares, and relapses were reduced. (Figure 6b). Overall, good control in disease severity was achieved with topical treatment and the disease severity had reduced by 80% in 1 week.

Expert opinion

Impoyz™ (CP) cream 0.025% demonstrates potent efficacy with less side effects and ease of application.

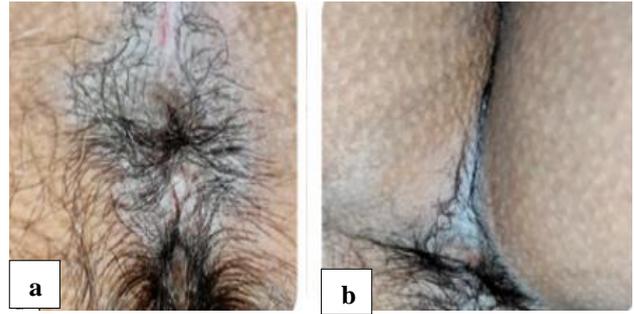


Figure 6: (a) Pre-treatment image of the lesions, and (b) post-treatment image of the lesions.

Case 7

A case of multiple psoriatic lesions on the extremities managed with clobetasol propionate 0.025%

A 47-year-old male presented with the complaint of itching on the left ankle. He had no significant medical history. There was no family history of a similar dermatological condition. His physical and systemic examinations revealed no abnormality. His psychological and social reactions were also unaffected. The lesions were located on the left ankle of the legs and measured 4×1–1.5 inch. There was no inflammation around the lesions. The center of the lesions was lichenified. Rash, itching, and scaling were observed. The morphology of the lesions was scaly plaque (Figure 7a). The patient was diagnosed with plaque psoriasis. He was instructed to apply topical Impoyz™ (CP) cream 0.025% to the affected skin area twice daily.

At the follow-up visit on day 14, scaling and itching had disappeared and plaque elevation, erythema, had decreased. (Figure 7b). Overall, the disease was reduced with topical therapy with Impoyz™ (CP) cream 0.025%.

Expert opinion

Impoyz™ (CP) cream 0.025% is safe and efficacious. The experience of using Impoyz™ (CP) cream 0.025% was good.



Figure 7: (a) Pre-treatment image of the lesion on the ankle of the legs, and (b) post-treatment image of the legs with reduced scaling, erythema, and plaque.

Case 8

Efficacy of topical Impoyz™ cream 0.025% in psoriasis in a female patient with diabetes and hypertension

A 25-year-old female presented with itching, scaling, and slight oozing on the fingers. She had diabetes mellitus and obesity. There was no significant family or history of any significant occupational risk factor. On examination, her vitals and systemic findings were within normal limits. She had no psychological or social sequelae. The lesions were located on the fingers of the right hand and measured 2–3 cm. There was inflammation around the lesions. The center of the lesions was scaly. Itching and scaling were noted (Figure 8a).

The patient was diagnosed with psoriasis. She was prescribed topical Impoyz™ (CP) cream 0.025% for application on the affected skin area twice daily for 14 days. At the next follow-up visit on day 14, an improvement was observed in scaling, erythema, and itching. Plaque elevation had reduced. Overall, the disease severity had improved after the treatment (Figure 8b).

Expert opinion

Impoyz™ (CP) cream 0.025% has less side effects compared with clobetasol 0.05%. The experience of using Impoyz™ (CP) cream 0.025% was satisfactory.

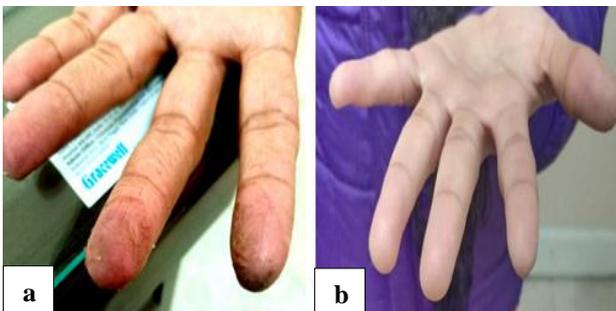


Figure 8: (a) Pre-treatment image of the lesion on the fingers, and (b) post-treatment image of the improved symptoms.

Case 9

Role of clobetasol propionate 0.025% in managing a patient with psoriasis

A 10-year-old girl presented with pruritic purple/whitish papule and plaque all over the body. The patient had no significant medical or personal history. There was no other occupational risk factor or any significant family history. Vitals and systemic findings were within normal limits. Psychological and social sequelae were absent. The lesions measured 3–4 mm (Figure 9a). Inflammation was absent around the lesions. The skin had a papular rash and itching was present. The patient was diagnosed with plaque psoriasis.

Approximately 20–25% of the BSA was covered with lesions. The patient was prescribed an oral steroid along with topical Impoyz™ (CP) cream 0.025% to be applied to the affected skin areas once daily for 14 days.

At the follow-up visit on day 14, there was a significant decrease in scaling, plaque elevation, and itching (Figure 9b). Overall, the disease severity had decreased during the treatment period.



Figure 9: (a) Pre-treatment image of the lesions on the body, and (b) post-treatment image of the body showing improvement.

Expert opinion

Impoyz™ (CP) cream 0.025% exhibits good efficacy. There was no skin atrophy even after prolonged use and the chances of atrophy and telangiectasia are less.

Case 10

Impoyz™ (CP) cream 0.025% is efficacious in psoriasis patients

A 45-year-old male with discoid lupus erythematosus presented with peeling of the skin, whitish regions on the skin, and leaking blood vessels. There was no significant medical or family history or occupational risk that was reported. No abnormality was detected in his vitals and systemic findings; moreover, psychological or social sequelae were absent. Blood vessels were observed. The lesions were 4×10 cm in size and were present on the right-hand palm and right thumb. On examination, the center of the lesions was observed to be scaly, uniform, and inflamed. The skin was warm and itchy (Figure 10a). The patient was diagnosed with discoid lupus erythematosus and psoriasis and was prescribed Impoyz™ (CP) cream 0.025% for 2 months for topical application. The patient was also prescribed a Terbinafine antifungal and given specific instructions to stay away from water, keep skin oily, and maintain hygiene.

At the follow-up visit on day 14, there was a 90% improvement in scaling and 80% relief in itching. There was an improvement in plaque elevation (Figure 10b). Overall, the severity of the disease had also improved following the topical application of Impoyz™ (CP) cream 0.025%.



Figure 10: (a) Pre-treatment image of the lesions, and (b) post-treatment image of the lesions.

Expert opinion

Impozyz™ (CP) cream 0.025% has a good safety profile even with the long-term use. It has minimal side-effects and is effective and well-tolerated by patients.

DISCUSSION

With multiple novel compounds and formulations available for the treatment of a variety of skin disorders such as psoriasis, restricted regions of vitiligo, eczema, atopic dermatitis, phimosis, acute radiation dermatitis, lichen planus, lichen simplex chronicus, discoid lupus erythematosus, and lichen sclerosis, CP 0.025% is associated with a higher risk/benefit ratio.⁴ It also has a higher penetration, better safety profile, and minimal adverse effects compared to CP 0.05% formulation. Furthermore, CP 0.025% shows effectiveness and safety in the treatment of psoriasis and may be prescribed in individuals who are not candidates for systemic therapy or as a supplement to those on systemic therapy.

Psoriasis is a widespread chronic inflammatory skin disease that affects people of any age group and manifests itself in a variety of clinical phenotypes. It is caused by a combination of genetic, environmental, and immunological factors.⁵ The most prevalent kind of psoriasis is plaque-type psoriasis, which is characterized by erythematous scaly plaques on the scalp, lower back, elbows, umbilical area, intergluteal cleft, and knees. Plaque psoriasis is an inflammatory condition that necessitates the administration of an anti-inflammatory drug such as CP.¹

CP has been observed to be effective in the treatment of a variety of chronic skin disorders. The topical use of CP helps decrease inflammation and pruritis in atopic dermatitis and psoriasis.³ The effectiveness, skin acceptability, and safety of CP 0.025% cream have been demonstrated in two pivotal, randomized, controlled trials. CP 0.025% cream has no typical contact allergies and uses diethylene glycol monoethyl ether to promote active ingredient penetration without causing systemic absorption.

The plasma concentrations of CP were studied before and after a 2-week topical treatment with either CP 0.05% or CP 0.025% formulation in a randomized, multicenter, open-label study. When compared to the CP 0.05% group, the CP 0.025% group had a considerably lower mean serum concentration of CP (56.3 versus 152.5 pg/ml, $p=0.014$). The results show that CP 0.025% cream has a lower systemic exposure than the CP 0.05% cream, making it a safer therapy option for individuals with moderate-to-severe plaque psoriasis.⁶ Clobetasol treatment has resulted in a significant increase in patient survival in previous studies, while also conserving systemic corticosteroids and reducing related adverse effects.⁷

CONCLUSION

CP 0.025% cream reduces the clinical signs and symptoms of moderate-to-severe psoriasis with high effectiveness and safety. Clinical trials of CP 0.025% cream demonstrate that the formulation is equally effective as CP 0.05%. In the therapeutic context, physicians may consider CP 0.025% to be the first-line topical treatment for various kinds of psoriasis.

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REFERENCES

1. Das A, Panda S. Use of topical corticosteroids in dermatology: An evidence-based approach. *Indian J Dermatol.* 2017;62(3):237-50.
2. Sidgiddi S, Naqvi SM, Shenoy M, Balraj DN, Kothari J, Gupta S, et al. Efficacy and safety of novel formulation of clobetasol propionate 0.025% cream in Indian moderate-to-severe psoriasis patients: Phase-2a, randomized 3-arm study. *Dermatol Ther (Heidelb).* 2021;11(5):1717-32.
3. Vishwanath V, Chaudhary A, Agarwal A, Jyothi B, Chitharanjan C, Killur LRB, et al. Role of clobetasol propionate 0.025% topical therapy in various dermatoses. *Int J Res Med Sci.* 2021;9(11):1.
4. Goldberg B, Hartdegen R, Presbury D, Smith EH, Yawalkar S. A double-blind, multicenter comparison of 0.05% halobetasolpropionate ointment and 0.05% clobetasol propionate ointment in patients with chronic, localized plaque psoriasis. *J Am Acad Dermatol.* 1991;25(6):1145-8.
5. Brandon A, Mufti A, Sibbald RG. Diagnosis and management of cutaneous psoriasis: A review. *Adv Skin Wound Care.* 2019;32(2):58-69.
6. Draelos ZD, Fowler JF, Cornelison R. A randomized, parallel group, open label, multicenter study to assess

the potential for adrenal suppression and systemic drug absorption following multiple dosing with clobetasol propionate cream (Impoyz™), 0.025% versus clobetasol propionate (Temovate®). *J Cutan Med Surg.* 2018;2(6):410-20.

7. Jing M, Yu Q, Zhu B, Yuan F, Zhang J, Peng L, et al. Topical 0.05% clobetasol cream in the treatment of chronic hand eczema: A protocol for systematic review and meta-analysis. *Medicine.* 2021;100(10).

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