

Case Series

Role of topical corticosteroid therapy in various dermatoses

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ABSTRACT

Topical corticosteroids are the cornerstone in managing several dermatologic disorders, including plaque psoriasis. Managing plaque psoriasis warrants the use of an effective anti-inflammatory, antimetabolic, antipruritic, and immunosuppressive agent, such as clobetasol propionate (CP). Recently, CP 0.025% cream received approval by United States food and drug administration (US FDA) for the treatment of moderate-to-severe psoriasis in adult patients. CP 0.025% cream has proven efficacious in chronic skin diseases, including controlling inflammation and pruritus, in various steroid-responsive dermatoses. In contrast to prior CP formulations, this novel CP 0.025% cream formulation does not contain propylene glycol, short-chain alcohols, and sorbitol-based emulsifiers, which are known contact allergens. The other beneficial attributes of this CP 0.025% cream formulation are high penetration of active ingredients and a lower degree of systemic absorption. This case series discusses the experience of using CP 0.025% cream in terms of its efficacy and safety in various dermatologic conditions.

Keywords: Plaque psoriasis, CP 0.025%, Topical corticosteroid

INTRODUCTION

Topical corticosteroids (TCs) remain the mainstay in the treatment of several dermatologic disorders, namely for those characterized by dry, scaly, crusty, or erythematous skin and usually associated with inflammation and pruritus.^{1,2} Since 1952, TCs have been considered for treating psoriasis, atopic dermatitis, seborrheic dermatitis, contact dermatitis, and other inflammatory dermatoses.¹

Topical corticosteroids play an important role in the treatment of moderate-to-severe plaque psoriasis.³ The success or failure of any TC depends on several factors, such as potency, expected efficacy, vehicle formulation, and patient preference.¹

Clobetasol propionate (CP) is a fifth-generation corticosteroid considered the most potent topical steroid.² Recently, the United States Food and Drug Admini-

stration (US FDA) approved the CP 0.025% cream formulation to be applied twice daily for the treatment of moderate-to-severe psoriasis in adult patients. Unlike the previous CP formulations (0.05%), CP 0.025% cream formulation contains propylene glycol, short-chain alcohols, and sorbitol-based emulsifiers, which are common contact allergens.¹

The present case series discusses the use, efficacy, and safety CP 0.025% in various dermatological conditions.

CASE SERIES

Case 1: Role of CP 0.025% in mild-to-moderate plaque psoriasis

A 35-year-old male visited the clinic with complaints of skin itch and irritation on his hands. The skin appeared thick and dry. The symptoms and local examination indicated plaque psoriasis. The patient did not have any comorbidity, relevant family history, or occupational risk factors. Overall, the patient's history was unremarkable.

The patient appeared healthy with no signs of cachexia, and no conjunctival, mucosal, or genital lesions during physical examination. He had stable vital signs. Thick, hard, and painful lesions were noted on the palms. His systemic findings were unremarkable, and he had no psychological or social sequelae. When examined locally, lesions of approximately 2-3 cm were noted on the palms and sole. Skin rash, scaling, tenderness, warmth, and itching were present, while inflammation was absent. The lesions were crusty in morphology and covered 2% of the body surface area (Figure 1 A).

The patient was diagnosed with mild-to-moderate plaque psoriasis. The patient was prescribed Impoyz™ (CP) cream, 0.025% to be applied as a thin layer to the affected skin areas twice daily for 2 weeks. He was advised to wash his hands after each application. Additionally, Proven® cream (primarily composed of natural ingredients) was prescribed to be applied once or twice during the day.

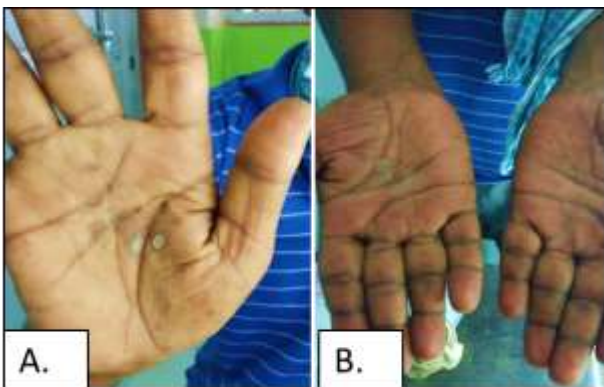


Figure 1: (A) Pretreatment image of lesions on the palm and (B) post-treatment image showing a reduction in lesion size.

At follow-up after 2 weeks, a reduction in scale size and plaque elevation was observed (Figure 1 B). Overall, the disease severity had reduced after 15 days with the use of Impoyz™ (CP) cream, 0.025%.

Expert opinion

Impoyz™ (CP) cream 0.025% is the first choice for symptoms indicating plaque psoriasis as it has similar efficacy and a better safety profile than CP 0.05%. It can also be prescribed for dermatitis, fungal infections, and allergic infections.

Case 2: Plaque psoriasis-related itch relief with CP, 0.025% cream and add-on levocetirizine

A 46-year-old female presented with complaints of itching over both legs around the ankle for the past 3 years. She had itchy, scaly, plaque-type lesions around the ankles. The patient had an unremarkable medical history. There were no occupational risk factors associated with her current condition. However, her sister had been diagnosed with hypothyroidism.

The patient appeared healthy with no signs of genital lesions. Her vital signs were stable. Discolored, dark, and hard skin localized at the ankle joints (dorsal aspect) was observed. The lesions measured approximately 20 cm. The affected areas were scaly, itchy, and inflamed. The rashes were plaque-type (Figure 2 A). The systemic findings were unremarkable. The patient had no psychological or social sequelae.

The patient was managed for plaque-psoriasis with levocetirizine dihydrochloride (5 mg) tablets, and Impoyz™ (CP), 0.025% cream, only to be applied over the lesion twice daily for 2 weeks. The patient was suggested to apply a moisturizer daily at other times of the day.



Figure 2: (A) Pretreatment image of discolored, hard skin with scaly rashes on the dorsal aspect of the ankle and (B) post-treatment image of lesions of reduced scaling and plaque elevation, and overall improved condition.

At follow-up after 2 weeks, there was a notable reduction in scaling, plaque elevation, and erythema. The itching reduced dramatically providing some relief to the patient. After 3 months, the patient arrived with a mild relapse. She was advised to use Impoysz™ (CP), 0.25% cream once daily for 2 weeks. In her next follow-up, the patient's condition had improved (Figure 2 B).

Expert opinion

Impoysz™ (CP) cream, 0.025% is at the top of the list as first-line therapy for plaque psoriasis as it has good penetration and provides faster results with minimal side effects.

Case 3: Effect of Impoysz™ 0.025% cream in psoriasis localized on arms

A 24-year-old female presented with discolored patches all over her both arms. The patch in its mild and reduced form had appeared 6 months before; however, with time the itch and patch had worsened. She had no comorbidities.

The physical and systemic examinations were unremarkable. The local examination revealed localized dark and itchy patches on the both arms from below the elbow to the wrist, which had covered 3% of the body surface area. The lesions were medium-sized with pink center and inflammation surrounding the affected area. The skin around the affected area was warm and scaly, and had vesicular rashes (Figure 3 A).

The patient was diagnosed with psoriasis of moderate-to-severe severity. She was prescribed Impoysz™ (CP) cream, 0.025%, twice daily and antihistamines for 15 days, and was advised to maintain skin hygiene and wash her hands before applying the cream. She was advised to keep her hands dry otherwise.



Figure 3: (A) Pretreatment image of dark patches on both arms and (B) post-treatment image of the lesions of clear skin after treatment with Impoysz™ (CP) cream, 0.025%.

On day 15, the patient arrived for a follow-up and reported a significant reduction in itch. The discoloration had reduced to a great extent and the skin looked clearer than before the presentation (Figure 3 B).

Expert opinion

Impoysz™ (CP) cream, 0.025% is the preferred choice for the treatment of psoriasis as it has the right concentration for optimal benefit from therapy. Treatment with Impoysz™ (CP) cream, 0.025% provided patient and clinician satisfaction.

Case 4: Plaque psoriasis in a middle-aged man with a family history of psoriatic arthritis

A 45-year-old male presented to the clinic with complaints of skin discoloration and rashes on the dorsal side of the hands with no itching. The patient had these symptoms for the past 5 months. He had no occupational risk factors or allergies that could have led to this condition. The patient reported a family history of psoriatic arthritis.

The physical and systemic findings were within normal limits. Local examination revealed that the lesions were present only on the dorsa of the hands at the posterior digital regions and the knuckles. The lesions were 1-3 cm in size, lichenified, and present as a crusty rash. The finger knuckles appeared swollen, especially at the distal interphalangeal joint (Figure 4 A). Overall, 1%–2% of the body surface area had been affected. The patient had a diminished quality of life with poor digital functions due to rigidity around the finger knuckles.



Figure 4: (A) Pretreatment image of lesions of crusty scales around the finger knuckles and (B) post-treatment image of a significant improvement in the skin lesions.

The patient was diagnosed with mild-to-moderate plaque psoriasis and prescribed Impoyz™ (CP) cream, 0.025% to be applied as a thin layer over the lesions twice daily for 2 weeks. Additionally, he was advised to apply a moisturizer once or twice during the day. The patient was also suggested to use a moisturizing soap.

At the follow-up visit on day 15, a significant improvement in the skin lesions was observed. The plaques had flattened and become less crusty (Figure 4 B). The condition had resolved with the use of Impoyz™ (CP) cream, 0.025%.

Expert opinion

Impoyz™ (CP) cream, 0.025% is safe and efficacious in the treatment of epidermal atrophy and lymphocyte suppression.

Case 5: Successful treatment of plaque psoriasis with CP, 0.025%

A 26-year-old male presented to the clinic with papulosquamous lesions on the back and arms. He had developed the lesions 2 years before. The patient did not have any comorbidity, relevant family history, or occupational risk factors. Overall, the patient's history was unremarkable.

His physical examination revealed stable vital signs but papulosquamous lesions on the back and forearms. The systemic findings were unremarkable, and he had not been affected by the condition psychologically or socially.

The lesions of varying sizes, up to 2 cm, were localized on the back and elbows (Figures 5 A and B). Inflammation was present around the lesions. The center of the lesions was scaly and accompanied by papular skin rash, scaling, warmth, and itch. The affected body surface area was around 10%.

The patient was managed for plaque psoriasis with Impoyz™ (CP) cream, 0.025%, which was prescribed to be applied as a thin layer on the affected skin areas twice daily for 2 weeks. He was advised to wash his hands after each application. The patient was advised to improve personal hygiene.

At follow-up on day 15, it was noted that the scaling, plaque elevation, erythema, and itching had reduced (Figures 5 C and D). There was a reduction of flares or relapses. Overall, the disease severity had reduced with the use of Impoyz™ (CP) cream, 0.025%.

Expert opinion

Impoyz™ (CP) Cream, 0.025% is safe for long-term use. It has good efficacy and better safety than CP, 0.05%.

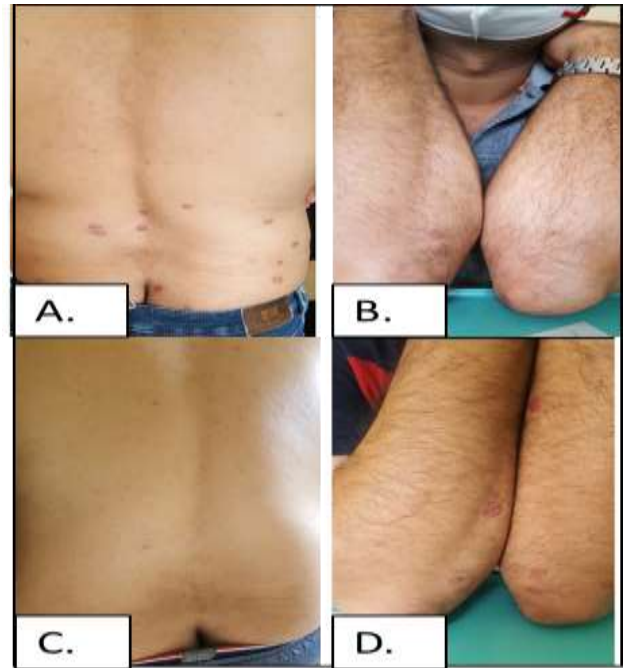


Figure 5: (A and B) Pretreatment images of lesions localized on the back and elbows and (C and D) post-treatment images of improved skin condition on the back and elbows.

Case 6: CP, 0.025% for mild-to-moderate plaque psoriasis

A 50-year-old female presented to the clinic with complaints of itching and rash on both legs. The lesions appeared scaly. The patient had a history of hypertension, but no relevant family history or occupational risk factors. Her skin condition had resulted in psychological and social sequelae.

The patient's physical examination revealed erythematous raised plaques on both legs (Figure 6 A). The systemic examination was unremarkable. On local examination, it was found that the lesions were approximately 1-2 cm in size, and accompanied by inflammation. The center of the lesions was clear. The skin showed rashes, scaling, tenderness, warmth, and itch. The lesions were crusty in morphology. The body surface area that was affected was 20%.

The patient was diagnosed with mild-to-moderate plaque psoriasis. The patient was prescribed Impoyz™ (CP) Cream, 0.025% to be applied as a thin layer to the affected skin areas twice daily for 2 weeks. The patient was advised to wash her hands after each application.

At the follow-up, there was a reduction in scaling, plaque elevation, erythema, and itching (Figure 6 B). Overall, Impoyz™ (CP) Cream, 0.025%, used as a first-line topical treatment, helped to reduce disease severity.

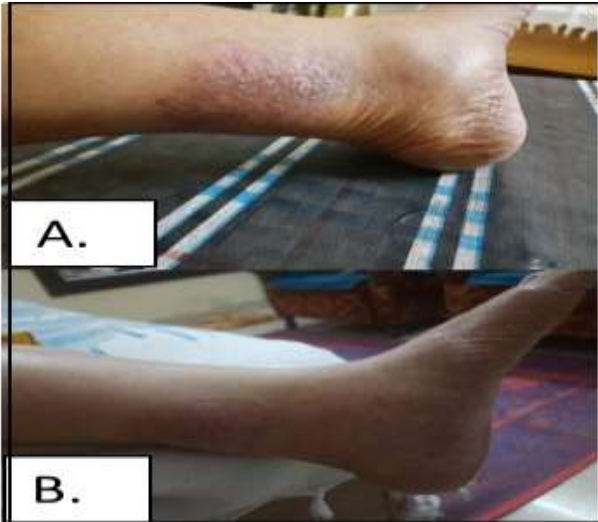


Figure 6: (A) Pretreatment images of erythematous raised plaques on the left leg and (B) post-treatment images of a reduction in erythema on the left leg with Impoyz™ (CP) cream, 0.025% at follow-up after 2 weeks of therapy.

Expert opinion

Impoyz™ (CP) cream, 0.025% can be used as a first-line topical treatment for mild-to-moderate plaque psoriasis due to good efficacy and improved safety profiles.

Case 7: Treatment of insect contact dermatitis with CP, 0.025%

A 34-year-old male presented to the clinic with a red, itchy, painful macule, which had appeared suddenly one morning. The patient had hypertension and a family history of diabetes. Occupational risk factors included sawdust exposure. The lesion seemed to aggravate in rainy weather.

On examination, the vital signs were within normal limits and systemic findings were unremarkable. The erythematous, itchy, painful macular lesions were localized on the dorsal aspect of the neck and measured 5 cm in diameter. The skin was inflamed and the center of the lesion appeared necrotic. The lesion was accompanied by vesicular rashes, tenderness, warmth, and itch but no scaling (Figure 7 A).

The patient was diagnosed with contact dermatitis from sawdust exposure. He was prescribed Impoyz™ (CP) cream, 0.025%, to be applied twice daily for 10 days on the affected area. He was advised to wash his hands after each application. Additionally, an oral antihistamine, levocetirizine 5 mg once daily, was prescribed for 7 days. He was called for a follow-up on day 15.

At follow-up, it was noted that erythema and itching had resolved completely (Figure 7 B) without any indication

of side effects. Overall, the disease severity had visibly reduced with the use of Impoyz™ CP cream, 0.025%.

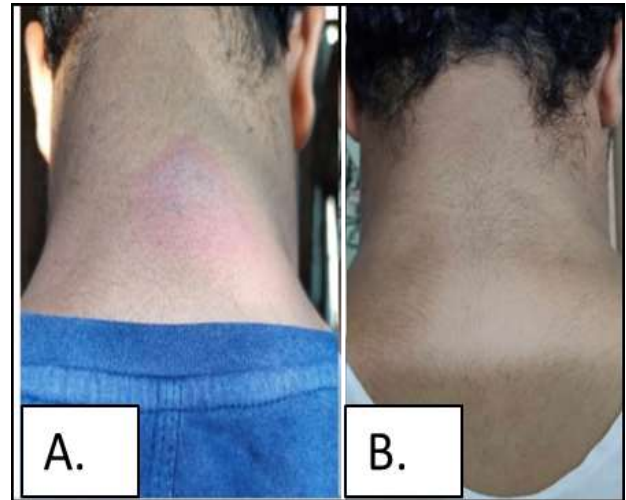


Figure 7: (A) Pretreatment image of red, erythematous macular lesion on the dorsal aspect of the neck and (B) post-treatment image of improved psoriasis with a visible reduction in the erythematous patch on the dorsal aspect of the neck.

Expert opinion

The patient had benefitted from good results from Impoyz™ (CP) cream, 0.025% in a short time of 2 weeks. This topical cream has excellent anti-inflammatory actions with no observed side effects.

Case 8: CP 0.025% in successful treatment of moderate-to-severe plaque psoriasis

A 45-year-old male presented to the clinic with complaints of itching and chronic plaques on his forearm. He had also developed a papular rash. The patient did not have any comorbidity, relevant family history, or occupational risk factors. Overall, the patient's history was unremarkable.

The patient's vital signs, systemic findings, and psychological and social sequelae were unremarkable. On local examination, the itchy, chronic plaques with papular rash were noted to be localized on the forearm. The lesions covered an area of 3×2 cm² accompanied by inflammation around it. The center of the lesion was raised. The lesion appeared scaly (Figure 8 A).

The patient was managed for moderate-to-severe plaque psoriasis with Impoyz™ (CP) cream, 0.025%, twice daily for 2 weeks. On day 15, the patient arrived for a follow-up. The patient reported no itching. Scaling, plaque elevation, and erythema had reduced. Overall, the disease severity had visibly reduced with the use of Impoyz™ CP cream, 0.025% (Figure 8 B).

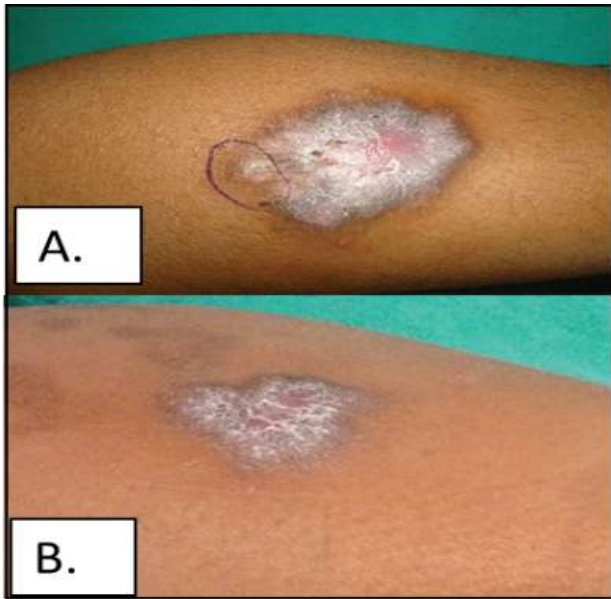


Figure 8: (A) Pretreatment image of chronic plaques on the forearm and (B) post-treatment image of a visible reduction in scaling, erythema, and plaque.

Expert opinion

Impoyz™ (CP) cream, 0.025% is safe and considered a good first-line drug choice for moderate-to-severe plaque psoriasis.

Case 9: CP 0.025% for resolution of mild-to-moderate plaque psoriasis

A 34-year-old male presented to the clinic with multiple well-defined erythematous plaques on the palms of the hands. The plaques had thick, white scaling and were also associated with mild pruritus. The patient had a history of obesity, with a sedentary lifestyle. No other comorbidities or relevant family history were reported. The lesions seemed to aggravate in winter.

On examination, the vital signs were within the normal range. Multiple erythematous plaques with thick white scaling and mild pruritus were localized on the palms of the hands (Figure 9 A). The lesion sizes varied and were accompanied by inflammation, scaling, and itch. The lesion's center appeared scaly. There were no signs of rash, tenderness, or warmth. Around 5-6% of the body surface area was affected. The systemic findings were unremarkable. Psychological and social sequelae were present.

The patient was diagnosed with mild-to-moderate plaque psoriasis. Impoyz™ (CP) cream, 0.025%, was prescribed to be applied as a thin layer on the affected area twice daily for 2 weeks, then once daily till symptoms resolved. Washing hands after each application was recommended, but without using harsh soaps. The patient was also prescribed oral vitamin A capsules and antihistamines.

At follow-up, scaling, erythema, and plaque elevation had decreased (Figure 9 B). The itching had resolved completely. Overall, the patient's condition had noticeably improved with the use of Impoyz™ (CP) cream, 0.025%.



Figure 9: (A) Pretreatment image of multiple erythematous plaques with white scaling and mild pruritus localized on the palms of the hands and (B) post-treatment image showing improved disease condition and reduced plaques on the palms.

Expert opinion

With good safety and efficacy profiles, Impoyz™ (CP) cream, 0.025% is indicated for the treatment of mild-to-moderate psoriasis.

Case 10: CP, 0.025% for treatment of vitiligo lesions

A 45-year-old female presented to the clinic with multiple whitish lesions on the dorsum of her hands. The patient had a history of vitiligo vulgaris for the past 2 years. The patient did not have any other comorbidity or relevant family history. The patient was a housewife. The use of sanitizers and detergents aggravated the lesions. Overall, the patient's history was unremarkable.

Physical examination revealed multiple white lesions on the dorsum of the hands. Her vital signs were within normal limits. The systemic findings were unremarkable. However, the condition caused psychological and social sequelae. On further examination of the hands, the center of the lesions appeared whitish (Figure 10 A). Overall, the lesions were not accompanied by inflammation, rash, tenderness, warmth, scaling, or itching.

The patient was diagnosed with aggravated vitiligo lesions from harsh detergents. She was prescribed Impoyz™ (CP) Cream, 0.025%, once daily at night for a week. She was advised to wash her hands after each application. In addition, antiseptic Placentrax® gel was prescribed to be applied daily every morning. She was

advised to get out often in the sun. The patient was also prescribed oral zinc and multivitamins.

At follow-up after 1 week, it was observed that the lesions had resolved without causing skin irritation (Figure 10 B). Overall, the patient's condition had improved visibly with the use of Impoyz™ (CP) cream, 0.025%.



Figure 10: (A) Pretreatment image of multiple whitish lesions on the dorsum aspect of hands and (B) post-treatment images of hands of improvement in vitiligo lesions with Impoyz™ (CP) cream, 0.025%.

Expert opinion

Impoyz™ (CP) cream, 0.025% is a safe formulation, which is less associated with side effects and provides a fast response with less irritation, compared to CP 0.05% formulation.

DISCUSSION

The pathophysiology of plaque psoriasis is multifactorial.⁴ The inflammatory actions of plaque psoriasis warrant the use of an effective anti-inflammatory, antimitotic, antipruritic, and immunosuppressive agent, such as CP.⁵ The new CP cream, 0.025% is indicated for the treatment of moderate-to-severe plaque psoriasis in adult patients.⁶ Moreover, the 0.025% CP formulation has demonstrated proven efficacy in many other chronic skin diseases, including controlling inflammation and pruritus in various steroid-responsive dermatoses.² CP is a highly potent fifth-generation corticosteroid recommended for the treatment of psoriasis and other corticosteroid-responsive dermatoses.^{1,2}

Two independent 15-day phase III, randomized, controlled trials demonstrated significantly better primary and secondary endpoint success using CP, 0.025% cream

formulation in patients with moderate-to-severe plaque psoriasis compared to the vehicle cream ($p < 0.001$).¹ CP cream, 0.025% significantly reduces body surface area and shows clear or almost clear skin at the end of the 15-day treatment in a high percentage of patients with moderate-to-severe plaque psoriasis.¹

CP, 0.025% cream formulation is devoid of propylene glycol, short-chain alcohols, and sorbitan sesquioleate, a common contact allergen used in the 0.05% formulation.¹ The use of diethylene glycol monoethyl ether in CP, 0.025% cream provides increased penetration of active ingredients without their systemic uptake.¹ CP cream, 0.025% is also associated with a lower degree of systemic absorption, as compared to CP, 0.05% cream. The 0.025% cream formulation suppresses the hypothalamic-pituitary-adrenal axis in patients with moderate-to-severe plaque psoriasis.³ CP 0.025% cream formulation leads to lower levels of plasma CP in patients, which indicates a lower degree of systemic corticosteroid exposure, compared to CP, 0.05% cream.³

Localized contact dermatitis lesions have also been successfully managed with mild or high-potency topical steroids, such as CP, 0.025% as first-line therapy.⁷ Immunosuppressive therapy with CP, 0.025% has been shown to provide excellent results in cases of localized stable vitiligo.⁸

CONCLUSION

Several new molecules and formulations for the treatment of various skin conditions are available in the market that have a clear advantage of improved risk/benefit ratio. CP, 0.025% cream is one such effective anti-inflammatory, antimitotic, antipruritic, and immunosuppressive agent, which has demonstrated its efficacy in treating plaque psoriasis and other corticosteroid-responsive dermatoses as first-line therapy. It provides sufficient penetration and has a better safety profile with respect to side effects than the CP, 0.05% formulation. Therefore, the use of CP, 0.025% may be considered for a safer treatment of patients with moderate-to-severe plaque psoriasis not candidates for systemic therapy or as an add-on therapy to systemic therapy.

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Ethical approval: Not required

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