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Review Article

Relative Efficacy and Interchangeability of Various Clobetasol Propionate Vehicles in the Management of Steroid-Responsive Dermatoses

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ABSTRACT

Background: Topical corticosteroids have long been the cornerstone in the treatment of steroid-responsive dermatoses. Despite the effectiveness of these formulations, there is a misperception that drugs delivered via ointments are more potent than those delivered via other vehicles. Potency, however, is a complex function of the physical and chemical properties of both the active ingredient and its vehicle. Studies have determined that newer vehicles (eg, lotions), particularly those in the super-high–potency class, not only heighten the ability of the active ingredient to penetrate skin but also are preferred by patients over ointments and creams.

Objective: This review of the literature investigates the effectiveness and tolerability of a high-potency corticosteroid lotion compared with cream or emollient cream formulations in treating moderate to severe plaque-type psoriasis and atopic dermatitis.

Methods: A literature search was conducted of US and international published clinical trials (1975 to November 2004) comparing all potencies of topical corticosteroid cream and lotion formulations using MEDLINE and the Web sites of individual dermatologic journals. No specific study designs were excluded from this search. Search terms included *corticosteroid-responsive dermatoses, creams versus lotions, topical corticosteroid clinical trials, plaque-type psoriasis, atopic dermatitis, clobetasol propionate, drug bioavailability, Class I topical agents,* and *vasoconstriction.* The primary diagnoses were moderate to severe plaque-type psoriasis and atopic dermatitis. Two unpublished clinical investigations comparing clobetasol propionate lotion 0.05% with clobetasol propionate cream 0.05% and emollient cream 0.05% in a total of 421 patients were also included.

Results: In the 20 published and 2 unpublished trials identified and reviewed, the response rates were comparable between the lotion and cream formulations. In addition, in a psoriasis study, clobetasol lotion received significantly better cosmetic-acceptability ratings compared with clobetasol cream ($P < 0.05$).

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Conclusion: In the studies reviewed, the effectiveness and tolerability of clobetasol lotion were comparable to those of clobetasol cream and emollient cream in studies in adults with moderate to severe psoriasis or atopic dermatitis. (*Curr Ther Res Clin Exp.* 2005;66:154–171) Copyright © 2005 Excerpta Medica, Inc.

Key words: topical corticosteroids, potency, vehicle, vasoconstriction, anti-inflammatory, clobetasol propionate, Class I agents, plaque-type psoriasis, atopic dermatitis, efficacy, safety, duration of response, cosmetic acceptability.

INTRODUCTION

Clinical Applications of Topical Corticosteroid Creams and Lotions

Factors considered when selecting a topical corticosteroid for the treatment of psoriasis or atopic dermatitis include body site, disease state, drug concentration, method of application, and vehicle appropriateness.[1] The contribution of the vehicle to the bioavailability and potency of topical corticosteroid preparations was not fully appreciated until the mid-1970s.[1] Today the importance of an optimal vehicle in maximizing drug bioavailability is recognized. In addition, dose-response studies can be used to determine the maximum effective concentration associated with a given vehicle.[1]

A common misperception is that topical corticosteroid ointments are inherently more potent than other vehicle formulations because of increased drug penetration. However, although ointments moisturize dry psoriatic plaques, they are not necessarily more potent than other vehicles. In fact, potency is a complex function of several factors: the bioavailability of the active ingredient, chemical and physical stability of the vehicle to optimally deliver the active ingredient, area and state of diseased skin, and duration of use.[1–4]

The activity of a given topical agent can be enhanced by vehicle changes that result in the delivery of more drug. These changes often involve adding dimethyl sulfoxide, dimethylacetamide, *N*-methylpyrrolidine, urea, and propylene glycol,[2] penetration enhancers that increase the reservoir of corticosteroid in the stratum corneum. Although the mechanism of action of penetration enhancers is not well understood, these agents heighten the therapeutic activity of a topical formulation by (1) hydrating the stratum corneum to facilitate passage of the drug; (2) enhancing the thermodynamic activity of the active ingredient, increasing its ability to penetrate viable tissue; and (3) transiently increasing epidermal intracellular gaps that allow greater passive diffusion of the drug.

Because the vasoconstrictive activity of a corticosteroid generally correlates with its anti-inflammatory potency, vasoconstrictor assays can be used to predict the clinical activity of a given corticosteroid. Vasoconstriction scores are used to rank corticosteroids according to their potency. Class I agents are considered super-high–potency topical corticosteroids (**Table I**).[3,4]

The potency of a topical corticosteroid, in addition to its drug concentration and/or duration of exposure, determines the intensity of vasoconstriction.[5,6] The more potent the topical corticosteroid, the earlier the maximal effect is ob-

Table I. Class I corticosteroids: super-high–potency topical corticosteroids.[3,4]

Generic Name	Trade Name
Betamethasone dipropionate	Diprolene®* ointment, gel, lotion, 0.05%
Clobetasol propionate	Clobex®† lotion, 0.05%; Olux®‡ foam 0.05%; Temovate®§ cream, ointment, gel 0.05%; Temovate E®§ emollient 0.05%
Diflorasone diacetate	Psorcon E®‖ emollient ointment 0.05%
Halobetasol propionate	Ultravate®¶ cream, ointment 0.05%

*Schering-Plough Corporation, Kenilworth, New Jersey.
†Galderma Laboratories, LP, Fort Worth, Texas.
‡Connetics Corporation, Palo Alto, California.
§GlaxoSmithKline, Research Triangle Park, North Carolina.
‖Dermik Laboratories, Berwyn, Pennsylvania.
¶Bristol-Myers Squibb Company, Princeton, New Jersey.

served.[6] Thus, with a super-high–potency topical corticosteroid (eg, clobetasol propionate), topical exposure for a short time (eg, 1 hour) results in a vasoconstrictive response similar to that with exposures of as long as 16 hours.[5] Use of the super-high–potency agents on the face, groin, or axillae is contraindicated. Treatment should be limited to a maximum of 2 consecutive weeks, with ≤2 additional weeks for localized lesions.

Impact of Vehicle Technology on Skin Penetration

Advances in vehicle technology have allowed enhanced distribution of topical corticosteroids, as illustrated by the results of an in vitro trial comparing the amount of drug recovered after the application of 0.05% clobetasol propionate lotion,* cream,† or emollient cream.‡[7] Skin obtained by surgical excision was treated and stored. Levels of clobetasol were measured after centrifugation and extraction of the skin sample. Significantly more clobetasol was recovered in the epidermis (including the stratum corneum) with the lotion compared with the cream ($P = 0.013$) (**Table II**).[7] Likewise, significantly more drug was recovered from the epidermis and dermis with the lotion compared with the emollient cream ($P < 0.001$).

Target Disease States

The super-high–potency agents are used for treating dermatoses that are mildly or moderately responsive to topical corticosteroids (**Table III**).[3] Class I agents are used for treating significant inflammation or skin that is so thick (either inherently or as the result of disease) that penetration would likely be poor. Typical indications for Class I agents include plaque psoriasis of the body,

*Trademark: Clobex® (Galderma Laboratories, LP, Fort Worth, Texas).
†Trademark: Temovate® (GlaxoSmithKline, Research Triangle Park, North Carolina).
‡Trademark: Temovate E® (GlaxoSmithKline).

Table II. Cutaneous penetration of clobetasol propionate in vitro, as measured by percentage of applied clobetasol dose recovered.[7]

Skin Layer	Lotion 0.05%	Cream 0.05%	Emollient Cream 0.05%
Epidermis*	10†‡		
Dermis	2‡	3	0.1
Dermis + epidermis (total cutaneous penetration)	12	8	5

*Including stratum corneum.
†$P = 0.013$ versus cream.
‡$P < 0.001$ versus emollient cream.

Table III. Responsiveness of selected dermatoses to topical corticosteroids.

Highly responsive
Psoriasis (intertriginous)
Atopic dermatitis (children)
Seborrheic dermatitis
Intertrigo
Moderately responsive
Psoriasis (body)
Atopic dermatitis (adults)
Nummular eczema
Parapsoriasis
Lichen simplex chronicus
Primary irritant dermatitis
Papular urticaria
Least responsive
Palmoplantar psoriasis
Psoriasis of nails
Lichen planus
Lupus erythematosus
Allergic contact dermatitis, acute phase
Dyshidrotic eczema
Pemphigus
Granuloma annulare
Necrobiosis lipoidica diabeticorum
Sarcoidosis
Insect bites

Adapted with permission.[3]

palmoplantar psoriasis, lichen planus, lichen simplex chronicus, lupus erythematosus, and acute exacerbations of atopic dermatitis in adults.[3]

Psoriasis, not including psoriasis of the nails, is the most common dermatosis for which the Class I topical corticosteroids are prescribed.

COMPARISON OF CREAM AND LOTION FORMULATIONS OF TOPICAL CORTICOSTEROIDS

In November 2004, a literature search of US and international published clinical trials was conducted using MEDLINE and Web sites of individual dermatologic journals for the period 1975 to November 2004. Search terms included *corticosteroid-responsive dermatoses, creams versus lotions, topical corticosteroid clinical trials, plaque-type psoriasis, atopic dermatitis, clobetasol propionate, drug bioavailability, Class I topical agents,* and *vasoconstriction.*

The objective of this review was to investigate the effectiveness and tolerability of topical corticosteroid creams and lotions. Primary diagnoses were psoriasis and atopic dermatitis. Twenty investigations that included cream and/or lotion treatment arms were identified.[8–27] Only 1 published study compared Class I corticosteroid lotion and creams.[8] Two unpublished comparative trials of Class I lotions and creams are also presented in this review.[28,29] One study evaluated 229 patients with atopic dermatitis. The results were presented at the annual meetings of the World Congress of Dermatology (2002) and European Academy of Dermatology and Venereology (2003).[28] The second, unpublished investigation involved 192 patients with psoriasis who were also treated with a Class I lotion or cream.[29] The identified studies are presented in **Tables IV** to **VI**. Two psoriasis studies[8,29] and 1 atopic dermatitis study[28] involving lotions were identified. Although a variety of study designs were used, a review of the results revealed no evidence that topical corticosteroid cream formulations are inherently more potent than lotion formulations.

No notable differences were found in the overall treatment response rates for creams and lotions, regardless of the potency of the corticosteroid. In both psoriasis and atopic dermatitis, high response rates were achieved with Class I agents.

Patient Preference

In the United States, more than 1 million in 4.5 million patients diagnosed with psoriasis report substantial dissatisfaction with their treatment, even if skin involvement is not extensive.[30] According to the results of 2 patient preference studies in which this author participated, much of this dissatisfaction may be attributable to the vehicle used to deliver therapy.[31,32] In these 2 studies, based on a 7-parameter preference measure, patients indicated a preference for "less messy" foam and solution vehicles compared with cream, gel, and ointment vehicles (all, $P < 0.01$).[31] In addition, in another study, patients

Table IV. Psoriasis: response to topical corticosteroid creams and lotions in published clinical trials.

Study	Treatments	Design	Response Rate*
Decroix et al[8]	Clobetasol propionate cream vs clobetasol propionate lotion, BID for 4 wk	Multicenter, randomized, investigator-blinded, active- and lotion vehicle-controlled	Cream, 74/95 (78%); lotion, 70/94 (74%); vehicle, 5/33 (15%)
Duweb et al[9]	Betamethasone valerate lotion vs calcipotriol solution, BID for 6 wk	Randomized	Betamethasone valerate, 13/18 (72%); calcipotriol, 15/24 (63%)
James[10]	Fluticasone propionate cream vs hydrocortisone butyrate cream (control), BID for 4 wk	Multicenter, randomized, double-blind, active-controlled	Fluticasone, 50/63 (79%); hydrocortisone, 41/60 (68%)
Molin et al[13]	Betamethasone valerate cream vs calcipotriol cream, BID for 8 wk	Multicenter, randomized, double-blind, parallel-group	Betamethasone valerate, 95/210 (45%); calcipotriol, 99/207 (48%)
Bjornberg and Hellgren[15]	Clobetasol propionate cream BID for 2 wk	Double-blind	14/16 (88%)
Kanof and Blau[16]	Halcinonide cream vs betamethasone valerate cream, TID for 2–4 wk	Double-blind, active-comparator	Halcinonide, 48/60 (80%); betamethasone valerate, 39/60 (65%)
van Dijk et al[18]	Betamethasone dipropionate cream BID for 3 wk	Multicenter, open-label	39/73 (53%)
Parish and Witkowski[19]	Betamethasone valerate cream TID for 2 wk	Double-blind	6/14 (43%)
Svartholm et al[20]	Clobetasol propionate cream intermittent for 2 wk	Multicenter, open-label	196/316 (62%)

(continued)

Table IV. (Continued)

Study	Treatments	Design	Response Rate*
Afzelius and Jacobsen[22]	Betamethasone dipropionate cream vs fluocinolone acetonide cream, BID for 3 wk	Randomized, double-blind, active-comparator	Betamethasone, 17/30 (57%); fluocinolone, 8/32 (25%)
Cabrera[25]	Betamethasone dipropionate cream BID for 2 wk	Open-label	18/21 (86%)
Lodolo[26]	Betamethasone dipropionate cream BID for 2 wk	Open-label	83%
Franz et al[27]	Betamethasone valerate lotion vs betamethasone valerate foam, vehicle foam; BID for 4 wk	Multicenter, randomized, double-blind, active- and vehicle-controlled	Betamethasone valerate lotion, 27/58 (47%); betamethasone valerate foam, 41/57 (72%); vehicle foam, 6/28 (21%)

*Based on investigator's end-of-study assessment of response to therapy as "marked improvement" or "clearance."

Table V. Atopic dermatitis: response to topical corticosteroid creams and lotions in published clinical trials.

Study	Treatments	Design	Response Rate*
Lassus[11]	Alclometasone dipropionate cream vs hydrocortisone butyrate cream, BID for 2 wk	Double-blind, parallel-group	Alclometasone, 15/20 (77%); hydrocortisone, 14/20 (70%)
Lassus[12]	Alclometasone dipropionate cream vs clobetasone butyrate cream, BID for 2 wk	Randomized, double-blind, parallel-group	Alclometasone, 19/22 (86%); clobetasone, 18/21 (86%)
Yawalkar and Schwerzmann[14]	Halobetasol propionate cream vs betamethasone dipropionate cream, BID for 2 wk	Multicenter, double-blind, parallel-group	Halobetasol, 51/58 (88%); betamethasone, 53/59 (90%)
Yawalkar and Schwerzmann[14]	Halobetasol propionate cream vs clobetasol propionate cream, BID for 2 wk	Multicenter, double-blind, parallel-group	Halobetasol 56/63 (89%); clobetasol 63/68 (93%)
Bleehen et al[17]	Fluticasone propionate cream QD vs BID, for 4 wk	Randomized	QD, 108/137 (79%); BID, 110/133 (83%)
Pirozzi[21]	Halcinonide cream BID/TID for 2 wk	Open-label evaluation	85/100 (85%)
Viglioglia et al[23]	Mometasone furoate cream QD vs betamethasone valerate cream BID, for 3 wk	Randomized, investigator-blinded, parallel-group	Mometasone, 33/35 (94%); betamethasone, 33/34 (97%)
Freeman et al[24]	Desonide lotion vs vehicle, BID for 3 wk	Randomized, double-blind, vehicle-controlled	Desonide, 35/40 (88%); vehicle, 17/41 (41%)
Lodolo[26]	Betamethasone dipropionate cream BID for 2 wk	Open-label	23/25 (92%)

*Based on investigator's end-of-study assessment of response to therapy as "marked improvement" or "clearance."

Table VI. Overall rates of response (%) to topical corticosteroid creams versus lotions in published clinical trials.[8–27]

Corticosteroid Potency	Psoriasis		Atopic Dermatitis	
	Cream	Lotion	Cream	Lotion
All potencies	25–88	47–74	70–97	88
Non-Class I	43–88	47–72	70–97	88
Class I	62–88	74	88–93	N/A

reported a preference for corticosteroid lotions over creams in each of the following aspects: "satisfactory penetration time" ($P = 0.043$), "dries quickly" ($P = 0.002$), "greasy sensation" ($P = 0.001$), "pleasing aspect" ($P = 0.001$), "pleasing perfume" ($P = 0.001$), and "film on the skin" ($P = 0.017$).[8] In a fourth study,[33] 39% of patients with psoriasis indicated being noncompliant with therapy due to its "messiness" and "time-consuming nature"[33]; thus, further investigation may find that vehicle preferences significantly impact patient compliance.[32] Such preferences could explain greater clinical improvement in patients with atopic dermatitis treated with topical corticosteroid cream compared with ointment.[34] In 1 of these studies, patients with plaque-type psoriasis rated the cosmetic acceptability of clobetasol lotion higher compared with that of clobetasol cream.[8] This increased acceptability of the lotion might improve treatment compliance, which, in turn, might enhance patient outcomes.

Direct Comparison of the Effectiveness of Lotion Versus Cream Formulations of a Class I Corticosteroid: Results of 3 Clinical Studies

Psoriasis Studies

Two multicenter, randomized, active- and vehicle-controlled studies (1 published[8] and 1 unpublished[29]) compared clobetasol propionate lotion 0.05% with vehicle (control group) and with equal-strength formulations of clobetasol in a cream or emollient cream vehicle. Both studies included predominantly white male and female patients aged ≥18 years with moderate to severe plaque-type psoriasis involving at least 10% body surface area and with a total baseline dermatologic sum score (DSS) (scale: 0 = none to 4 = severe [for each sign of psoriasis]) ≥6 on the target area.

Psoriasis Study 1

In the first study, 222 patients applied clobetasol propionate lotion 0.05% (n = 94), clobetasol propionate cream 0.05% (n = 95), or lotion vehicle (control group) (n = 33) to the affected areas BID for 4 weeks. Patients were evaluated at baseline and at days 7, 14, and 28.[8]

Efficacy evaluations included a 6-point global severity score (GSS) (scale: 0, 0.5, 1.0 = success; 2, 3, 4 = failure); individual signs of erythema, plaque eleva-

tion, and scaling (each assessed on a 5-point Likert scale: 0 = none to 4 = very severe); a DSS (defined as the sum of severity scores for erythema, plaque elevation, and scaling; range, 0–12); a 5-point global improvement score (scale: 1 = worse to 5 = clear); and the percentage of body surface area involved.

The DSS and GSS scores were significantly lower with clobetasol lotion 0.05% compared with the lotion vehicle (both, $P < 0.001$). In addition, no significant differences in mean DSS or GSS were found between clobetasol lotion 0.05% and clobetasol cream 0.05% at any visit (**Figure 1**).[8]

Reductions in the DSS at the end of treatment were 81% with clobetasol propionate lotion 0.05% and 85% with clobetasol propionate cream 0.05%. The mean GSS at baseline, which was 2.6 in all 4 treatment groups, was decreased to 0.7 in the lotion group, to 0.6 in the cream group, and to 1.9 in the control group. At the end of treatment, 76% of patients who used clobetasol lotion and 77% of those who used clobetasol cream rated global improvement as 3 or 4 (almost clear/clear) compared with 9% of those who used the lotion vehicle (both, $P < 0.001$).[8] Treatment-related adverse events occurred in 2 patients treated with clobetasol lotion, in 2 patients treated with clobetasol cream, and in none of the patients treated with the lotion vehicle. No clinically significant local skin reactions were found with any of the study medications.

Compared with clobetasol cream, clobetasol lotion received significantly better ratings on 6 measures of cosmetic acceptability ("satisfactory penetration time," "dries quickly," "greasy sensation," "pleasing aspect," "pleasing perfume," and "film on the skin") (all, $P < 0.05$) (**Figure 2**).[8]

Psoriasis Study 2

In the second study,[29] 192 patients applied clobetasol propionate lotion 0.05% (n = 82), emollient cream 0.05% (n = 81), or lotion vehicle (control group) (n = 29) to the affected areas BID for 4 weeks. The primary end point was the success rate derived from the GSS (0 = best response to 4 = worst response). Treatment success was a GSS of 0, 0.5, or 1 (clear, almost clear, or mild overall severity, respectively [ie, success]), and failure was a GSS of 2, 3, or 4.

At the end of therapy, the mean GSS in the group receiving clobetasol lotion 0.05% was statistically similar to that of the group receiving clobetasol propionate 0.05% emollient cream and significantly lower compared with the control group ($P < 0.001$). Success rates were 41%, 37%, and 0% in the groups receiving the emollient cream, lotion, and vehicle, respectively. A total of 77% of patients treated with clobetasol lotion maintained success at the 4-week follow-up visit compared with 49% of those treated with clobetasol emollient cream (**Figure 3**).[29]

Treatment-related adverse events occurred in 5 patients treated with clobetasol lotion, 2 treated with clobetasol emollient cream, and 3 treated with lotion vehicle. One patient receiving clobetasol emollient cream discontinued treatment due to an adverse event (irritant contact dermatitis). Other adverse events included atrophy, telangiectasia, skin discomfort, and dryness.

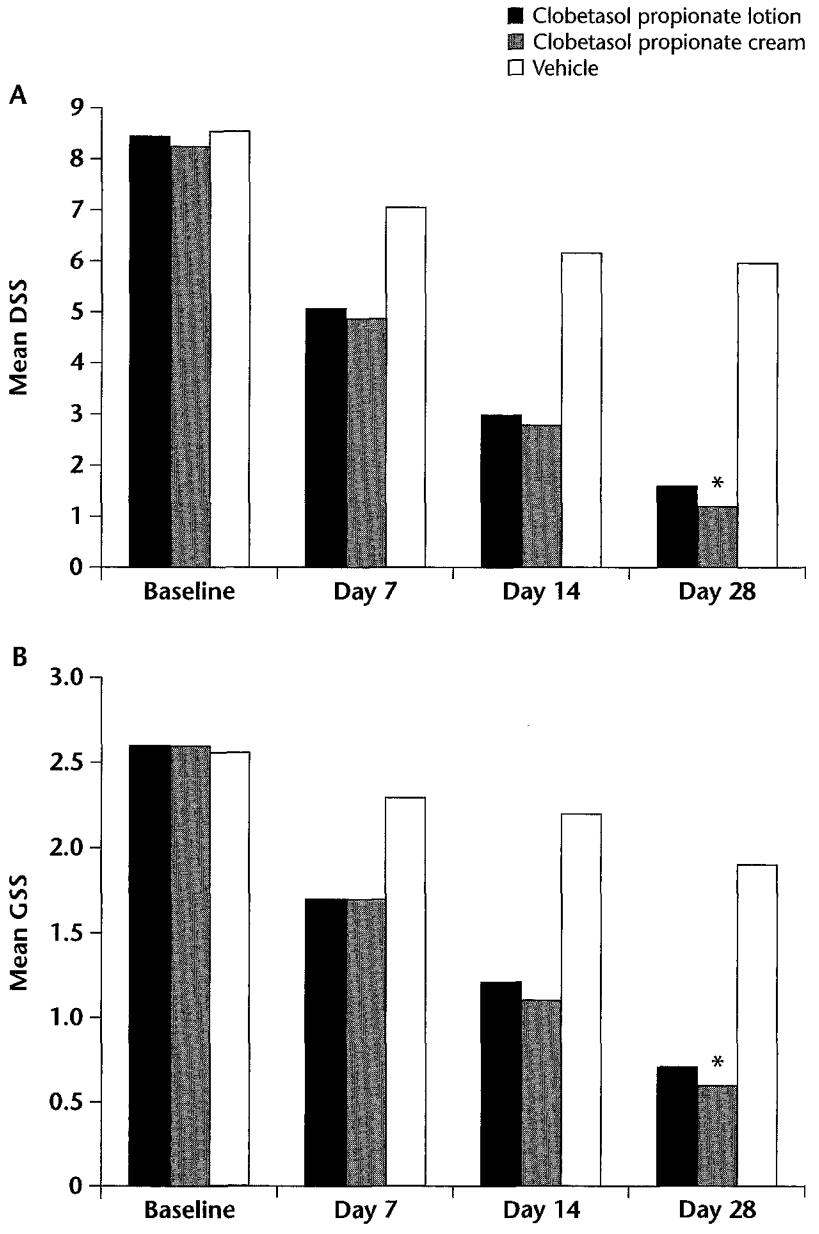

Figure 1. Effects of treatment with clobetasol propionate lotion 0.05%, cream 0.05%, or vehicle (control) on (A) dermatologic sum score (DSS) and (B) global severity score (GSS) (intent-to-treat population last observation carried forward).[8] DSS scale: sum of severity scores for erythema, plaque elevation, and scaling; range, 0–12. GSS scale: 0, 0.5, 1.0 = success; 2, 3, 4 = failure. *$P < 0.001$ versus vehicle.

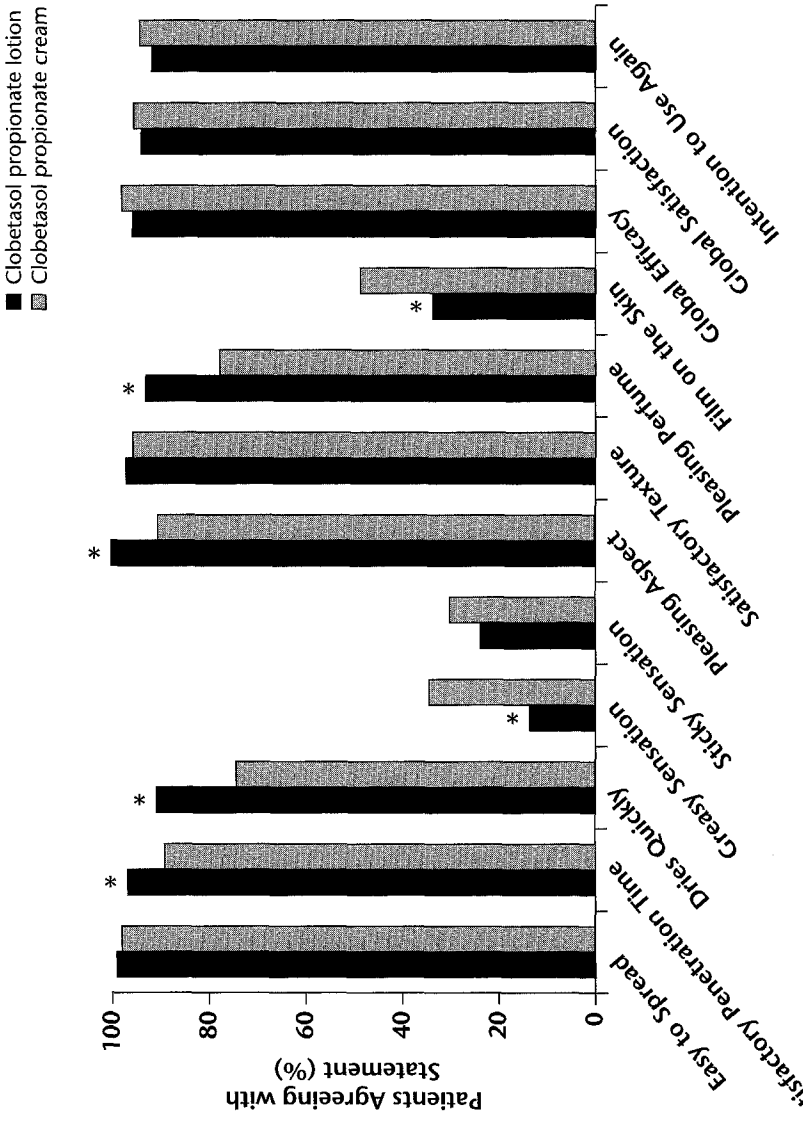

Figure 2. Cosmetic acceptability ratings for clobetasol propionate lotion 0.05% and cream 0.05%. *$P < 0.05$ versus cream.[8]

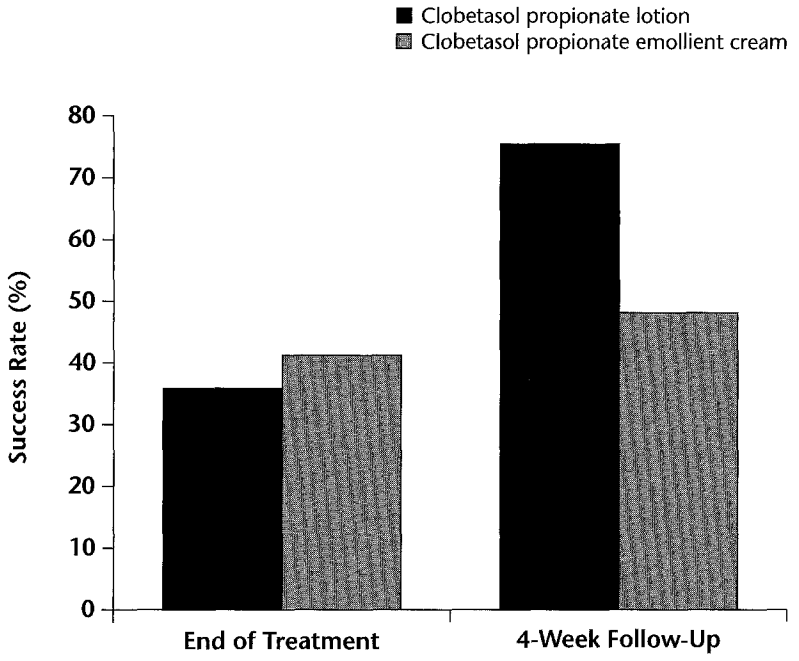

Figure 3. Comparison of rates of treatment success with clobetasol lotion 0.05% and emollient cream 0.05% at the end of treatment and at 4-week follow-up.[29]

Summary of Psoriasis Studies

In the 2 studies discussed previously, the effectiveness and tolerability of clobetasol propionate lotion 0.05% were found to be similar to those of equal-strength formulations of clobetasol propionate cream 0.05% or emollient cream in the treatment of moderate to severe plaque-type psoriasis.[8,29] However, compared with clobetasol cream, clobetasol lotion received significantly better ratings on 6 measures of cosmetic acceptability (all, $P < 0.05$).[8] Corticosteroid-related local skin reactions (ie, telangiectasia and skin atrophy) were not reported with short-term treatment with clobetasol propionate lotion in these studies.

Atopic Dermatitis Study

A total of 229 male and female patients aged ≥12 years with moderate to severe atopic dermatitis involving at least 20% of total body surface area and with a total baseline DSS at the target area of ≥6 were enrolled in this unpublished trial.[28] Patients applied clobetasol propionate lotion 0.05% (n = 96), clobetasol propionate emollient cream 0.05% (n = 100), or lotion vehicle (control group) (n = 33) to the affected areas BID for 2 weeks and were followed up for an additional 2 weeks after treatment. Patients were evaluated at baseline and at days 7, 14, and 28.

Efficacy evaluations included GSS and global improvement score, as described in the studies in patients with psoriasis.[8,29] The DSS was the sum of severity scores for erythema, excoriation, and induration/papulation; pruritus was assessed separately on a 5-point Likert scale (0 = none to 4 = very severe).[28] The percentage of body surface area involvement also was assessed. The primary end point was the success rate based on reduction from baseline in the GSS.

The GSS score was significantly lower with clobetasol propionate lotion 0.05% compared with vehicle ($P = 0.001$). Also, the success rates in the groups receiving clobetasol propionate lotion 0.05% and clobetasol propionate emollient cream 0.05% were statistically similar at day 14 (**Figure 4**).[28]

The incidences of adverse effects were comparable between all 3 treatment groups; no clinically significant local skin reactions (ie, telangiectasia, skin atrophy) were observed with any of the study medications. Treatment-related adverse events occurred in 4 patients treated with clobetasol lotion, 1 patient treated with clobetasol emollient cream, and 6 patients who received the lotion vehicle.

Summary of the Atopic Dermatitis Study

The effectiveness and tolerability of clobetasol propionate lotion 0.05% were similar to those of clobetasol propionate emollient cream 0.05% in the treatment of moderate to severe atopic dermatitis.[28] Corticosteroid-related local skin reactions were not observed with short-term treatment with clobetasol propionate lotion in this study.

DISCUSSION

Advances in vehicle technology have led to the development of new topical corticosteroid preparations that are less greasy, easier to apply, penetrate the skin more rapidly, and are more cosmetically acceptable compared with traditional creams, gels, and ointments.

Although only 1 direct comparison of Class I corticosteroid creams and lotions was found in the published literature,[8] these formulations achieved similar rates of clinical response in psoriasis[29] and atopic dermatitis[28] in unpublished reports. In addition, patients with psoriasis have reported substantial dissatisfaction with cream, gel, and ointment vehicles and, in fact, generally prefer vehicles that are less messy or more patient friendly.[32]

Large, multicenter, randomized, controlled trials comparing clobetasol propionate lotion 0.05% and its vehicle with clobetasol propionate 0.05% cream and emollient cream in patients with moderate to severe plaque-type psoriasis[8,29] or moderate to severe atopic dermatitis[28] found that the lotion was more effective compared with the lotion vehicle (control) and similarly or more effective than clobetasol propionate 0.05% cream and emollient cream. No clinically significant local skin reactions or adverse events were observed with any of the study medications.

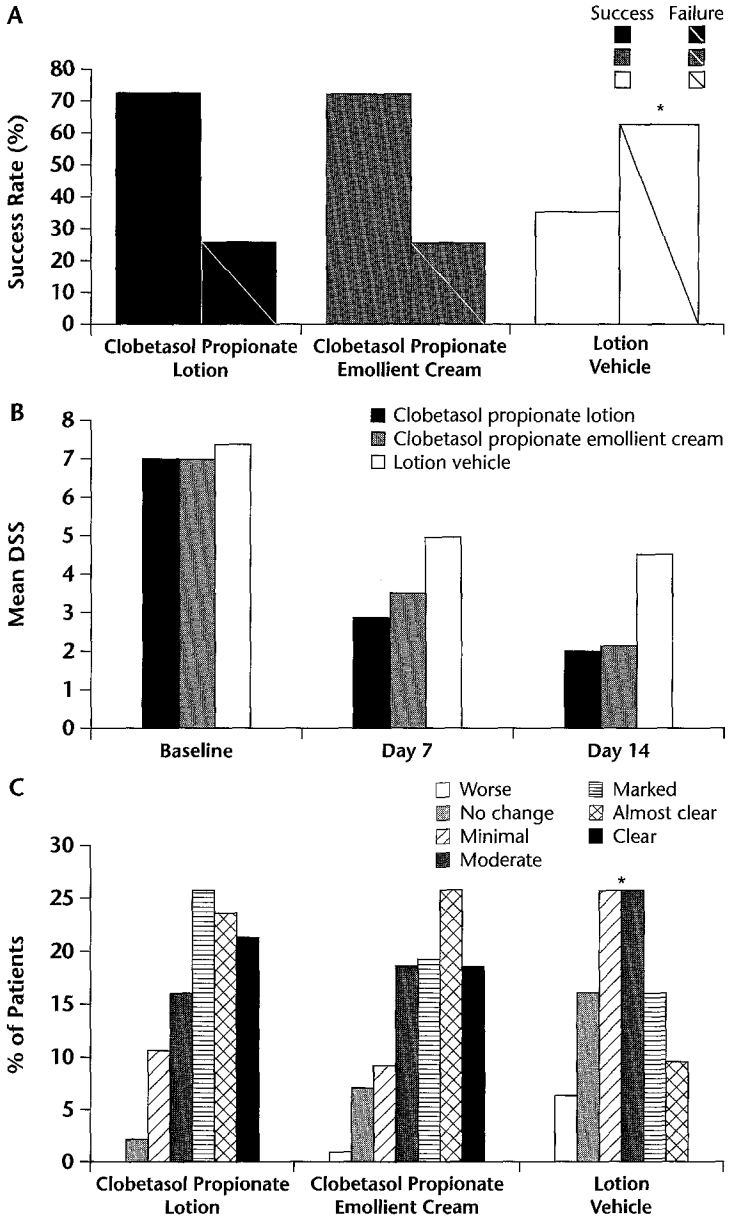

Figure 4. Effects of treatment with clobetasol propionate lotion 0.05% or emollient cream 0.05% on (A) success rate, (B) dermatologic sum score (DSS), and (C) global severity score (GSS) (intent-to-treat population last observation carried forward).[28] DSS scale: sum of severity scores for erythema, excoriation, induration/papulation, and scaling; range, 0–12. Pruritus was assessed separately on a 5-point Likert scale (0 = none to 4 = very severe). *$P = 0.001$ clobetasol lotion versus vehicle.

CONCLUSIONS

The vehicle chosen to deliver topical corticosteroid treatment has long been recognized as an important aspect of the effectiveness of this therapy for psoriasis and atopic dermatitis. Based on the findings of the present review, patients prefer less messy vehicles, such as lotions, to traditional creams, gels, and ointments. Further studies are needed to compare lotions with creams and to establish the impact of the vehicle on treatment compliance. The effectiveness and tolerability of clobetasol propionate lotion were similar to those of clobetasol cream and emollient cream in the 3 studies in patients with moderate to severe psoriasis or atopic dermatitis.

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