Calcipotriol plus betamethasone dipropionate foam is effective in patients with moderate-to-severe psoriasis: post-hoc analysis of the PSO-ABLE study

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Introduction

- Most guidelines recommend that mild-to-moderate psoriasis be treated with topical therapies.[1,2] Use of topical therapies in severe/extensive psoriasis is not generally recommended
- Ointment and gel formulations of fixed combination calcipotriol 50 µg/g (Cal) plus betamethasone 0.5 mg/g (BD) are established first-line topical treatments.[3] A foam formulation has been developed with the aim of enhancing adherence and increasing the therapeutic options available
- Studies with Cal/BD foam have demonstrated greater *in vitro* drug penetration and a greater antipsoriatic effect over 4 weeks of treatment than Cal/BD ointment and vehicle, with a comparable tolerability profile[4–7]
- The Phase III PSO-ABLE study (NCT02132936) in patients with mild-to-severe psoriasis demonstrated that Cal/BD foam had superior efficacy at week 4 compared with Cal/BD gel at week 8 (based on the recommended treatment periods in the approved labels)[8]
- This analysis from PSO-ABLE assesses the efficacy of Cal/BD foam and gel in the subgroup of patients with moderate-to-severe psoriasis

Materials and methods

PSO-ABLE STUDY DESIGN

- Prospective, multicentre, investigator-blinded
- Patients were randomized 4:4:1:1 to once-daily Cal/BD foam, Cal/BD gel, foam vehicle or gel vehicle for up to 12 weeks[8]

PATIENTS

- Aged ≥18 years with mild-to-severe psoriasis according to the physician's global assessment of disease severity (PGA), involving 2–30% body surface area (BSA), and a modified (excluding the head, which was not treated) Psoriasis Area and Severity Index (mPASI) of ≥2
- For inclusion in this subgroup analysis, a patient was required to have 'moderate-to-severe' psoriasis based on the 'Rule of Tens'[9]:
  - BSA affected ≥10% *or* mPASI score >10 *or* Dermatology Life Quality Index (DLQI) score >10

ASSESSMENTS AND ENDPOINTS

- Efficacy was assessed at weeks 4, 8 and 12 by calculating:
  - Proportion of patients achieving a ≥75% or ≥90% reduction in mPASI
  - Change from baseline in BSA affected
  - Proportion of patients who were clear/almost clear of psoriasis, with a ≥2 grade improvement according to PGA (defined as 'treatment success')
- Patients completed the DLQI questionnaire at baseline and weeks 4, 8 and 12 (range 0–30). Quality of life was assessed by calculating the proportion of patients achieving:
  - DLQI score of 0/1 (ie no impact of psoriasis on the patient's life)
  - Decrease in DLQI score of ≥5 (ie the minimal clinically important difference)
- The amount of each product used throughout the study was also assessed

STATISTICAL ANALYSIS

- Analyses were conducted on the full analysis set, which comprised all patients with moderate-to-severe psoriasis
- Last observation carried forward (LOCF) was used to impute values for missing mPASI data. An observed case approach was used for other variables

Results

PATIENTS

- 463 patients were randomized to Cal/BD foam (n=185), Cal/BD gel (n=188), foam vehicle (n=47) and gel vehicle (n=43)
  - Seventy-seven Cal/BD foam patients and 82 Cal/BD gel patients were classified as having moderate-to-severe psoriasis (Table 1)

Table 1. Patient demographics and disease characteristics at baseline

	Cal/BD foam (n=77)	Cal/BD gel (n=82)
Males:females, n	49:28	47:35
Age, years	53.2 ± 12.9	52.1 ± 14.8
BSA, %	10.9 ± 6.8	10.4 ± 6.4
mPASI score	10.2 ± 5.2	8.9 ± 4.0
DLQI score	10.4 ± 5.7	12.0 ± 6.4

Note: All data are mean ± standard deviation (SD)

mPASI SCORES

- The proportion of patients achieving mPASI75 and mPASI90 was greater with Cal/BD foam than Cal/BD gel at weeks 4, 8 and 12 (Figure 1)
  - Percentage mean (± SD) reduction in mPASI from baseline to week 12 was 66.8 ± 37.6% with Cal/BD foam and 57.7 ± 34.4% with Cal/BD gel

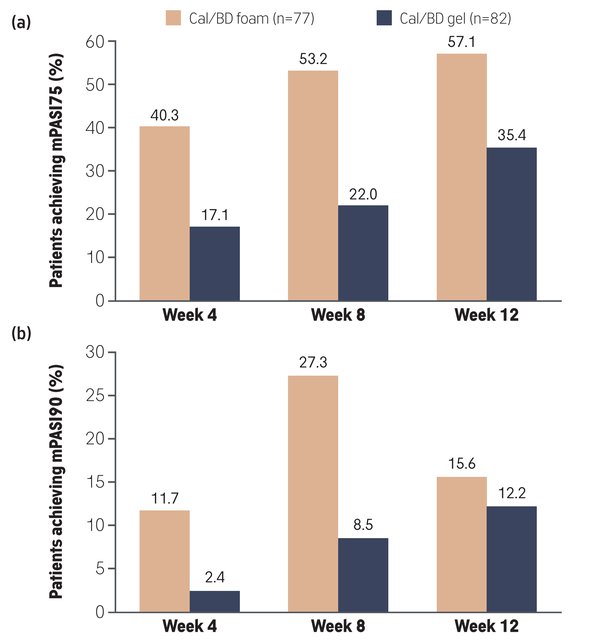

Figure 1. Proportion of patients with moderate-to-severe psoriasis achieving (a) mPASI75 and (b) mPASI90 (LOCF)

BSA AFFECTED BY PSORIASIS

- The proportion of BSA affected decreased throughout treatment in both Cal/BD foam and Cal/BD gel groups (Figure 2)
  - Percentage mean (± SD) reduction from baseline to week 12 was 50.2 ± 43.0% with Cal/BD foam and 39.2 ± 37.7% for Cal/BD gel

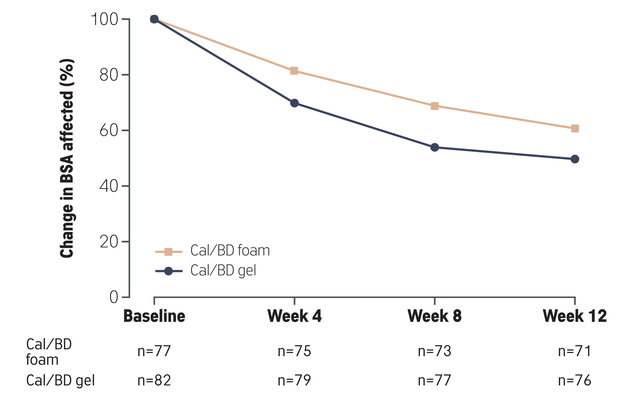

Figure 2. Reduction in BSA affected by psoriasis from baseline in moderate-to-severe patients (observed cases)

TREATMENT SUCCESS

- Treatment success rates increased throughout the first 6 weeks, reaching 32.0% by week 4 in the Cal/BD foam group; these rates continued to increase up to week 12 (Figure 3)
  - Success rates were higher with Cal/BD foam than Cal/BD gel at each time point

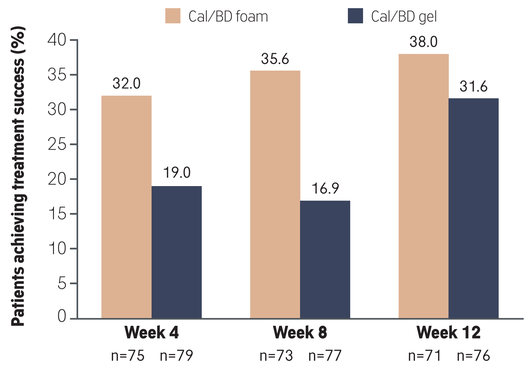

Figure 3. Proportion of moderate-to-severe patients achieving treatment success during treatment (observed cases)

DLQI SCORES

- A greater proportion of patients achieved a DLQI of 0/1 at weeks 4, 8 and 12 with Cal/BD foam than Cal/BD gel (Figure 4)
- The proportion of patients achieving a decrease in DLQI of ≥5 with Cal/BD foam was greater than with Cal/BD gel at week 4 (70.3% vs 56.4%), then similar at weeks 8 (68.5% vs 66.2%) and 12 (62.9% vs 64.0%)

AMOUNT OF PRODUCT USED

- The mean amount of Cal/BD foam used was 28.0 ± 20.3 g/week, compared with 22.6 ± 18.1 g/week of Cal/BD gel
  - The greatest usage of Cal/BD foam occurred in the first 6 weeks

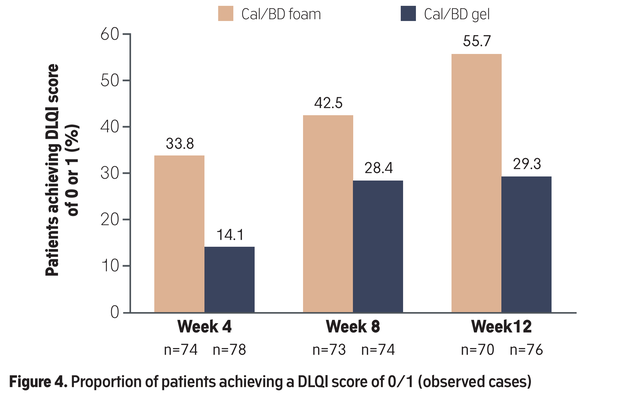

Figure 4. Proportion of patients achieving a DLQI score of 0/1 (observed cases)

Conclusions

- **This subgroup analysis demonstrates that Cal/BD foam is effective in patients with moderate-to-severe psoriasis; it should be noted however, that it is difficult to treat psoriasis patients who have large BSA involvement purely with topical therapy. The superior efficacy of Cal/BD foam over Cal/BD gel that was observed in the primary PSO-ABLE study[8] was maintained for up to 12 weeks in these patients**
- **Potential limitations of this analysis: the definition of moderate-to-severe (based on the 'Rule of Tens'[9]) differs from that used in studies of systemic therapies, where patients are typically required to have BSA ≥10% *and* PASI >10; mean BSA, mPASI score and DLQI scores in this study were close to 10, therefore on the threshold for moderate-to-severe psoriasis**
- **This subanalysis suggests Cal/BD foam may be a cost-saving alternative to systemic therapies, in some patients with moderate-to-severe psoriasis who are able to maintain adherence to topical therapy and do not want to be exposed to systemic therapy**

Acknowledgements

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