SKIN

BRIEF ARTICLE

Successful Tralokinumab Treatment for Hand and Foot Atopic Dermatitis in a Patient with Skin of Color: A Case Report

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ABSTRACT

Atopic dermatitis (AD) is a common chronic inflammatory skin condition that disproportionately affects skin of color patients. New targeted biological therapies such as tralokinumab are available for the management of AD, but real-world evidence of their clinical effectiveness in skin of color patients is limited, particularly in patients with difficult-to-treat hand and/or foot (H/F) involvement. In this report, we present a case of recalcitrant AD with hand and foot (HF) involvement in a skin of color patient successfully treated with tralokinumab.

INTRODUCTION

Atopic dermatitis (AD) is the most common chronic inflammatory skin condition known to disproportionately affect skin of color patients, impacting 19 percent of African American children.[1,2] In darker skin types, AD commonly presents as pruritic violaceous, ashen gray or dark brown patches and plaques on the extensor surfaces with secondary lichenification, edema and hyperpigmentation. Topical corticosteroids, calcineurin inhibitors, and phosphodiesterase-4 inhibitors with adjunctive use of emollients and antihistamines are the mainstay of therapy for mild-moderate AD flares.[1]

Tralokinumab is a human immunoglobulin (Ig) G4 monoclonal antibody that specifically targets interleukin (IL)-13, a dominant pro-inflammatory type 2 cytokine leading to skin barrier dysfunction in AD.[3] Tralokinumab is approved for the treatment of moderate-to-severe AD in adult patients who have failed prescribed topical therapies.[3]

We report a case of AD in a skin of color patient treated with tralokinumab resulting in approximately 80% improvement in body surface area after 8 weeks duration.

CASE REPORT

We present a case of a 21-year-old female with Fitzpatrick skin type (FST) V who presented with a one year history of pruritic hyperpigmented eczematous plaques on the bilateral palms and dorsal feet **(Figure 1A)**. She was noted to have previously failed topical tacrolimus, fexofenadine, and montelukast and was currently treating with topical triamcinolone, clobetasol and oral hydroxyzine. Past medical history was remarkable for hypertension, seasonal allergic rhinitis, and childhood AD.

The patient was continued on clobetasol 0.05% topical ointment five days weekly, triamcinolone 0.1% topical ointment twice weekly, oral cetirizine twice daily, oral hydroxyzine once daily as needed and ceramide-based moisturizers. After failed oral and topical therapy for six months duration, she was initiated on tralokinumab with an initial dose of 600 mg followed by 300 mg administered every other week.

After 2 months on tralokinumab monotherapy, she achieved improvement in itch and approximately 80% improvement in baseline body surface area involving the bilateral palms **(Figure 1B)**. She also noted some improvement of the dorsal feet with no major adverse events reported. She was continued on tralokinumab 300 mg every other week for maintenance.

Figure 1. (A) Baseline photograph of hyperpigmented eczematous plaques on the bilateral palms. **(B)** Comparison photo after treating with tralokinumab for eight weeks.

DISCUSSION

New emerging targeted biological and systemic therapies are improving the management of AD for patients representing diverse age groups and ethnicities. Ethnic populations have been shown to have complex immunologic variabilities manifesting in AD which may potentially impact response to treatment.[1]

Tralokinumab monotherapy and in combination with topical corticosteroids has demonstrated efficacy and safety in AD disease severity and symptoms by 16 weeks with sustained improvement.[3,4] Evaluation of tralokinumab monotherapy recipients in two phase 3 trials (ECZTRA 1 and ECZTRA 2) revealed up to 22.2% with Investigator's Global Assessment (IGA) score of 0 (clear) or 1 (almost clear), up to 33.2% with 75% improvement in Eczema Area and Severity Index scores (EASI-75) and up to 25% with reduction in weekly average worst daily pruritus. Among treatment groups, African Americans represented 6.8% and 7.3% in ECZTRA 1 and ECZTRA 2 respectively. H/F involvement data was not reported. Although generally well tolerated, most commonly reported adverse events included upper respiratory tract infections, injection site reactions and conjunctivitis.[3,5]

There is a paucity of literature discussing the impact of biological and systemic therapy on atopic H/F dermatitis particularly in skin of color. Existing data includes effectiveness of dupilumab (IL-4/13 antagonist), lebrikizumab (IL-13 antagonist) and upadacitinib (janus-associated kinase 1,2 and 3 antagonist) **(Table 1).**

Table 1. Published studies discussing biological and systemic therapies in hand and/or foot dermatitis.

Study Type	Ethnicity/FST	Hand/Foot Involvement	Treatment Response	Reference
Dupilumab				
Phase 3, randomized double-blind, placebo-controlled trial (LIBERTY-AD-HAFT)	• White (79.7%) • Black or African American (5.3%) • Asian (12.8%) • Other Race (2.3%)	• Hand and foot (53.4%) • Foot only (3%) • Hand only (43.6%)	16 Weeks • HF-IGA score 0 or 1: 40.3% Dupilumab vs 16.7% placebo (p=.003)	[6]
Real world study	Not reported	• Hand (55%)	104 Weeks • EASI-75: 79.2 % • EASI-90: 58.7% • Reported hand dermatitis: 24%	[7]
*Additional studies including case reports/series, prospective observational studies and retrospective review [8,9]				
Lebrikizumab				
Phase 3 clinical trials (ADvocate1, ADvocate2 and ADhere)	Not reported	• ADvocate1: 72.1% Hand (LEBQ2W) and 73% Hand (placebo) • ADvocate2: 73.3% Hand (LEBQ2W) and 72.6% Hand (placebo) • ADhere: 71.0% Hand (LEBQ2W) and 66.7% Hand (placebo)	16 weeks • ADvocate1:67.2% LEBQ2W vs 29.1% placebo improved or cleared • ADvocate2: 61.7% LEBQ2W vs 18.9% placebo improved or cleared • ADhere: 72.8% LEBQ2W vs 43.2% placebo improved or cleared	[10]
Upadacitinib				
Prospective observational cohort study	Not reported	• Hand (84.2%)	16 Weeks • EASI-75: 50% • EASI-90: 25%	[11]
Phase 3 clinical trials (Measure Up 1 and 2)	Not reported	• Measure Up 1: 100% Hand (UPA 15 and 30) and 99.6% (placebo) • Measure Up 2: 99.6% Hand (UPA 15); 100% Hand (UPA 30) and 99.3% Hand (placebo)	16 Weeks • Greater proportions (p≤0.001) of UPA-treated vs placebo achieved HECSI-75	[12]

HF-IGA, Hand and Foot Investigator's Global Assessment; *EASI*, Eczema Area and Severity Index; *LEBQ2W*, Lebrikizumab 250 mg every 2 weeks; *UPA 15/30*, Upadacitinib 15 mg/30mg; *HECSI*, Hand Eczema Severity Index.

A multicenter phase 3 trial (LIBERTY-AD-HAFT) included 133 patients with moderate-to-severe H/F dermatitis, including 5.3% Black or African American and 12.8% Asian. Dupilumab treatment vs placebo demonstrated statistically significant

improvement from baseline at week 16 in primary and secondary endpoints assessed. 40.3% patients receiving dupilumab vs 16.7% placebo achieved HF Investigator's Global Assessment (IGA) score 0 or 1 at week 16.[6]

In a real word study of dupilumab in adults with AD, 78.3% and 58.7% achieved EASI 75 and EASI 90 respectively. Reported hand dermatitis improved from 55% at baseline improved to 24% at 104 weeks. FST was not reported among results.[7]

Further published data on dupilumab in HF dermatitis is limited to case reports/series, retrospective review and prospective observational studies for which FST and ethnicity were not consistently reported. Waldman et al reported 7% Hispanic with dyshidrotic hand/foot eczema who achieved at least partial response to dupilumab.[8] Lee et al reported 17% patients with skin of color including 11% Asian, 4% Black and 2% Hispanic with hand dermatitis demonstrating improvement in pruritus, pain and hand fissuring after more than 4 months of dupilumab.[9]

In phase 3 clinical trials (ADvocate1, ADvocate2 and ADhere), 62-73% of patients with hand dermatitis were improved or cleared compared to 19-43% placebo at week 16 of Lebrikizumab 250 mg every 2 weeks. FST was not reported among results.[10]

A prospective observational cohort study including 84% with HE demonstrated significant improvement in both clinical and patient reported outcomes at week 4 and 16 of treatment with upadacitinib.[11] In an analysis from two randomized phase 3 trials (Measure Up 1 and 2 studies) of upadacitinib monotherapy on atopic hand eczema, patients demonstrated rapid and sustained improvement in HECSI scores through week 16.[12]

Based on the presented data, other FDA-approved biologic and systemic therapies have demonstrated good effectiveness in atopic H/F dermatitis. Additional clinical trials focused in skin of color and atopic H/F dermatitis are needed to confirm safety and effectiveness of emerging therapies across diverse patient populations.

CONCLUSION

In conclusion, this case demonstrates successful treatment with tralokinumab in a skin of color patient with AD. Tralokinumab may be considered as monotherapy or in combination with topical therapy for patients with recalcitrant AD with hand-foot involvement.

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