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DOI: 10.1159/000496481**A Retrospective Review of Dupilumab for Hand Dermatitis**Nicole Lee^a Naina Chipalkatti^a Pedro Zancanaro^b
Courtney Kachuk^b Nicole Dumont^b David Rosmarin^b^aTufts University School of Medicine, Boston, MA, USA;^bDepartment of Dermatology, Tufts Medical Center, Boston, MA, USA**Keywords**

Dupilumab · Atopic dermatitis · Hand dermatitis

Dear Editor,

Hand dermatitis is a common condition affecting approximately 10% of the population in any given year [1]. Due to its location on the body, hand dermatitis can dramatically impact quality of life by affecting social functioning and the ability to perform activities of daily living. For patients with severe hand dermatitis, topical treatments are often not effective, and systemic therapies are associated with significant risks with long-term use.

Dupilumab is an emerging new therapy for atopic dermatitis that received FDA approval for treating moderate to severe atopic dermatitis in March 2017 [2]. Dupilumab is a human monoclonal antibody against the IL-4 receptor α subunit that functions by blocking the action of IL-4 and IL-13, which are inflammatory cytokines that mediate the pathogenesis of atopic dermatitis. Initial case reports have shown favorable results for the use of dupilumab for hand dermatitis, suggesting there may be similarities in the pathophysiology of atopic dermatitis and hand dermatitis. Oosterhaven et al. [3] first observed a female patient with very severe chronic atopic hand eczema and severe atopic dermatitis that had tried and failed alitretinoin, cyclosporine, azathioprine, mycophenolic acid, tacrolimus, and methotrexate showing “striking improvement” with dupilumab. At the beginning of treatment, her Hand Eczema Severity Index Score (HESI) was 244 out of 360, and by week 16, her hand eczema was “almost clear,” with a HESI of 16 out of 360. Another case report describes 3 patients with severe, chronic, recalcitrant hand eczema demonstrating substantial responses to dupilumab, ranging from 80% improvement to complete clearance [4]. While there are two publications of patients demonstrating improvement in hand dermatitis with dupilumab, a systemic review of patients with and without hand dermatitis has not yet been done.

We reviewed the records of all patients prescribed dupilumab at Tufts Medical Center between March 2017 and July 2018. Of the 126 patients prescribed dupilumab, we analyzed 66 patients after excluding those that had used the medication for fewer than 3

Table 1. Dupilumab for hand dermatitis versus non-hand dermatitis patients

	Any hand dermatitis (<i>n</i> = 38)	Non-hand dermatitis (<i>n</i> = 28)
Demographics		
Age, years	42.2±18.4	50.1±19.8
Sex, <i>n</i>		
Males	15	18
Females	23	10
Ethnicity, <i>n</i>		
White/non-Hispanic	17	14
Black/non-Hispanic	4	3
Hispanic	2	2
Asian	11	9
Other/not reported	4	0
Average time on dupilumab, days	153	190
BSA involvement, <i>n</i>	27	13
Average pre-dupilumab BSA, %	21.4±27.1	29.7±26.6
Average post-dupilumab BSA, %	5.5±9.6	5.1±9.2
IGA, <i>n</i>	25	11
Average pre-dupilumab IGA	3.26±0.72	3.45±0.69
Average post-dupilumab IGA	1.72±1.21	1.18±1.33
IGA of 0–1 post-dupilumab, %	40.0	63.6
Improved IGA post-dupilumab, %	72.0	90.9
Pruritus, <i>n</i>	30	24
Improvement, %	96.7	95.8
Resolution, %	26.7	25.0
Dermatitis-related pain, <i>n</i>	6	6
Improvement, %	100.0	83.3
Resolution, %	66.7	83.3
Sleep disturbances, <i>n</i>	5	5
Improvement, %	100.0	100.0
Resolution, %	60.0	20.0
Hand fissuring, <i>n</i>	11	N/A
Improvement, %	100.0	N/A

BSA, body surface area; IGA, Investigator Global Assessment.

months, those prescribed dupilumab for non-eczematous indications, and those with incomplete data. Patients were allowed to continue other therapies such as topical steroids while using dupilumab. Of these patients, 6 had dermatitis involving only the hands, 32 had dermatitis with hand and body involvement, and 28 had dermatitis on the body but not on the hands (Table 1). Diagnoses included dyshidrotic eczema, atopic dermatitis, and contact

dermatitis. On average, the patients tried over four other therapies prior to initiating dupilumab, the most common systemic therapies being prednisone (tried by 42% of patients), mycophenolate mofetil (32%), and cyclosporine (16%).

We found that after treatment with dupilumab, the Investigator's Global Assessment (IGA) of patients with hand dermatitis decreased by 1.54 points from 3.26 to 1.72, with 40.0% achieving an IGA of 0 and 1. In comparison, the average IGA of atopic dermatitis patients without hand involvement decreased by 2.27 points from 3.45 to 1.18 post-dupilumab, with 63.6% achieving an IGA of 0 or 1. The average body surface area (BSA) of patients with hand dermatitis decreased by 15.9%, while the average BSA of patients without hand involvement decreased by 24.6%. The reduction in IGA and BSA between patients with and without hand dermatitis was not statistically significant (Table 1).

Regarding patient-reported outcomes, 96.7% of patients with hand dermatitis reported improvement in pruritus; 6 out of 6 hand dermatitis patients who had dermatitis-related pain reported improvement, and 11 patients with hand fissuring reported improvement, with 10 out of 11 reporting complete resolution of fissures.

Limitations to this study include its small sample size and the fact that response rates may be confounded by patients that are continuing other dermatitis therapies due to extensive disease. Dupilumab may be a good treatment for patients with hand dermatitis with or without involvement of other parts of the body. Further investigations are needed to characterize the effects of dupilumab on patients with hand dermatitis due to different causes.

Key Message

Dupilumab may be a good treatment for patients with hand dermatitis for whom other therapies have failed.

Statement of Ethics

This study's protocol was reviewed and approved by the Tufts Health Sciences IRB (IRB #12948). Patients' informed consent was not required by the IRB.

Disclosure Statement

Dr. David Rosmarin serves as a consultant to Regeneron, Pfizer, AbbVie, Janssen, Celgene, Dermavant, and Novartis and as a speaker's bureau for Regeneron, Sanofi, Pfizer, AbbVie, Janssen, Celgene, Novartis, and Eli Lilly. The other authors have no conflicts of interest to declare.

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