38.1 ± 11.8 years. Conjunctivitis was observed in 22.8% (13 of 57) of patients after starting dupilumab. The mean time to develop conjunctivitis after beginning dupilumab was 5.3 ± 3.9 weeks. Conjunctivitis developed at a higher frequency after starting dupilumab in patients who had a history of conjunctivitis at baseline than in those who did not.

Patients in whom conjunctivitis occurred after starting dupilumab had significantly higher serum levels of thymus and activation-regulated chemokine (TARC) and immunoglobulin E (IgE) at baseline than those who did not (Fig 1). The cutoff values at baseline were 3342 pg/mL (sensitivity, 69.23%; specificity, 79.55%) for TARC and 11,200 IU/mL (sensitivity, 76.92%; specificity, 69.77%) for IgE, with moderate accuracy. No significant differences were observed between them in clinical severity, including Investigator's Global Assessment, affected body surface area, the Eczema Area and Severity Index, and results of other laboratory blood tests.

Clinical trials have demonstrated that baseline disease-related factors, including AD severity, prior conjunctivitis history, and certain biomarkers (TARC, IgE, eosinophils), are associated with an increased incidence of conjunctivitis.[1] It is reasonable, because levels of certain biomarkers, such as TARC, IgE, and eosinophils, increase with AD severity.[3-5] However, our real-world data revealed that only baseline serum TARC and IgE levels were significantly higher in patients who developed conjunctivitis and that a history of conjunctivitis and eosinophils showed its tendency, whereas baseline clinical severity did not demonstrate any association with incidence of conjunctivitis.

Even in data from clinical trials, the difference in the incidence of conjunctivitis between patients with AD with a baseline score of 3 on the 5-point Investigator's Global Assessment scale and those with a baseline of 4 was quite small in CHRONOS (NCT02260986) (0.06 vs 0.09 per 100 patient-years) and in CAFÉ (NCT02755649) (0.22 vs 0.23).[1]

Distinguishing the subtle differences in disease severity of AD among patients with moderate to severe AD (not including mild AD) is difficult for physicians. Our study underscores that among those parameters, serum levels of TARC and IgE could reflect subtle differences in predisposition for conjunctivitis more accurately than the disease severity of AD evaluated by physicians, especially among patients with moderate to severe AD, indicating that these objective parameters are useful as practical predictors of later development of conjunctivitis.

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Funding sources: None.

Conflicts of interest: Drs Kamata and Tada received honoraria for lectures from Sanofi. Drs Uchida, Nagata, Fukaya, Hayashi, Fukuyasu, Tanaka, Ishikawa, and Ohnishi have no conflicts of interest to declare.

IRB approval status: This study was approved by IRB.

Reprints not available from the authors.

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REFERENCES

1. Akinlade B, Guttman-Yassky E, de Bruin-Weller M, et al. Conjunctivitis in dupilumab clinical trials. *Br J Dermatol*. 2019;181:459-473.
2. Uchida H, Kamata M, Mizukawa I, et al. Real-world effectiveness and safety of dupilumab for the treatment of atopic dermatitis in Japanese patients: a single-centre retrospective study. *Br J Dermatol*. 2019;181:1083-1085.
3. Beck LA, Thaci D, Hamilton JD, et al. Dupilumab treatment in adults with moderate-to-severe atopic dermatitis. *N Engl J Med*. 2014;371:130-139.
4. Hamilton JD, Suarez-Farinas M, Dhingra N, et al. Dupilumab improves the molecular signature in skin of patients with moderate-to-severe atopic dermatitis. *J Allergy Clin Immunol*. 2014;134:1293-1300.
5. Guttman-Yassky E, Bissonnette R, Ungar B, et al. Dupilumab progressively improves systemic and cutaneous abnormalities in patients with atopic dermatitis. *J Allergy Clin Immunol*. 2019;143:155-172.

https://doi.org/10.1016/j.jaad.2019.12.039

Effect of biologic drugs on renal function in psoriasis patients with chronic kidney disease

To the Editor: Patients with psoriasis are at an increased risk of chronic kidney disease (CKD) and end-stage renal disease, which may lead to higher risk of death.[1] CKD can worsen over time, and patients with progressive decline in estimated glomerular filtration rate (eGFR) and proteinuria are at a higher risk for progression to end-stage renal disease.[2] The estimated decline in eGFR in

Table I. Characteristics of psoriasis patients with chronic kidney disease

Age, y	eGFR prebiologic use	eGFR postbiologic use	% Change in GFR	Duration of biologic use, y	Medication	Diabetes	HTN
64	38	38	0	2	Adalimumab	Y	Y
68	43	34	−21	8	Adalimumab	Y	Y
70	57	57	0	2	Adalimumab	Y	Y
79	57	57	0	3	Adalimumab	Y	N
50	57	58	1.8	3	Adalimumab	Y	Y
72	58	58	0	3	Adalimumab	N	Y
60	59	55	−6.7	3	Adalimumab	Y	Y
63	60	60	0	2	Adalimumab	Y	Y
44	64	59	−8	2	Adalimumab	Y	Y
57	50	73	46	6	Infliximab	N	Y
69	53	58	9.4	8	Infliximab	Y	Y
72	70	70	0	3	Infliximab	N	Y
63	65	72	10.7	3	Infliximab	N	Y
69	19	16	−16	2	Ustekinumab	Y	Y
78	69	69	0	1	Ustekinumab	Y	Y
76	51	57	12	3	Ustekinumab	N	Y
62	58	58	0	3	Ustekinumab	Y	Y
62	54	54	0	4	Ustekinumab	N	Y
57	54	54	0	1	Ustekinumab	N	Y
51	58	58	0	2	Ustekinumab	Y	Y
70	45	45	0	3	Ixekizumab	Y	Y
62	41	44	7.3	3	Ixekizumab	Y	N
63	65	65	0	3	Ixekizumab	N	Y
57	50	50	0	3	Secukinumab	N	Y

eGFR, Estimated glomerular filtration rate; *GFR*, glomerular filtration rate; *HTN*, hypertension; *N*, no; *Y*, yes.

CKD patients is 2.83 and 1.66 mL/min/1.73 m^2 per year (8.8% ± 12.9%) in men and women, respectively, and an increased rate of decline is associated with male sex, proteinuria, and high systolic blood pressure.[3] Recent studies have shown the benefits of anti−tumor necrosis factor biologics on the stabilization of renal function in CKD patients with rheumatoid arthritis.[4] In this retrospective study, we investigated the effects of biologics on renal function in psoriasis patients with CKD.

The study was approved by the Tulane University institutional review board. Patients with psoriasis who were treated at Tulane Medical Center from 2011 to 2019 were analyzed. Patients included in the study had moderate to severe psoriasis and coexisting CKD before initiation of a biologic drug. Any patient with an eGFR persistently lower than 60 mL/min/1.73 m^2 during 3 months was categorized as having CKD and included in the study. Patients were excluded if they had been receiving more than 1 biologic drug. Data were analyzed with an equivalence-paired *t* test.

Of the 533 patients reviewed, 34 (6.53%) met the inclusion criteria. Thirty-two patients were biologic naive, and 2 (5.9%) switched biologic drugs during the examination period and were excluded. The overall mean age at baseline was 63.5 years, 41.2% of patients were men, 88.2% of patients were white, 10% were black, and 1.8% were Hispanic. Fifty-six percent of patients had concomitant diabetes and hypertension (Table I). The overall mean eGFR at baseline was 53.2 mL/min/1.73 m^2 per year (SD 10.5), corresponding to stage 3A CKD, whereas the overall mean eGFR after biologic treatment was 54.2 mL/min/1.73 m^2 per year (SD 12.1). The average length of biologic use was 3.0 years (SD 2.0 years). Statistical analysis revealed no significant difference between pre- and postbiologic treatment in eGFR measurements (90% confidence interval −2 to 5; $P < .001$). Eight patients had an improved eGFR over time. Four patients (50%) were treated with infliximab, 2 were treated with ustekinumab, and 1 patient each was treated with adalimumab and ixekizumab.

This study had limitations, including a small sample size and retrospective study design. The study did not evaluate the level of proteinuria over time, nor the degree of blood pressure or glucose control over time in patients with diabetes, hypertension, or both. The presence of psoriatic arthritis and exposure to long-term nonsteroidal anti-inflammatory drugs was also not assessed. Confounding from selective prescribing and a health adherer effect are both possible limitations to the data interpretation.

This limited-sample retrospective study suggests that biologics do not affect long-term renal function in psoriasis patients with CKD. Additional studies are needed to further investigate whether early intervention with biologics can reduce progression to end-stage renal disease.

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Funding sources: None.

Conflicts of interest: Dr Murina is a speaker for AbbVie, Celgene, Eli Lilly and Company, Janssen, and Novartis. She has served on advisory boards for Ortho Dermatologics and Janssen.

IRB approval status: Reviewed and approved by Tulane IRB (2019-183).

Reprints not available from the authors.

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REFERENCES

1. Abuabara K, Azfar RS, Shin DB, Neimann AL, Troxel AB, Gelfand JM. Cause-specific mortality in patients with severe psoriasis: a population-based cohort study in the U.K. *Br J Dermatol*. 2010;163(3):586-592.
2. Chang WX, Arai S, Tamura Y, et al. Time dependent risk factors associated with the decline of estimated GFR in CKD patients. *Clin Exp Nephrol*. 2016;20(1):58-70.
3. Chang WX, Asakawa S, Toyoki D, et al. Predictors and the subsequent risk of end-stage renal disease - usefulness of 30% decline in estimated GFR over 2 years. *PLoS One*. 2015;10(7):e0132927.
4. Kim HW, Lee CK, Cha HS, et al. Effect of anti-tumor necrosis factor alpha treatment of rheumatoid arthritis and chronic kidney disease. *Rheumatol Int*. 2015;35(4):727-734.

https://doi.org/10.1016/j.jaad.2019.12.043

Dupilumab for the treatment of dyshidrotic eczema in 15 consecutive patients

To the Editor: Dyshidrotic eczema is a subtype of hand/foot eczema characterized by recurrent episodes of pruritic vesicular and eczematous eruptions. Even though dyshidrotic eczema affects a limited body surface area, it is frequently refractory to superpotent topical corticosteroids and may require treatment with phototherapy or systemic immunosuppressants. Even with aggressive management, many patients do not achieve satisfactory disease control. Several case reports and small case series (≤3 patients) have reported using dupilumab in the treatment of refractory dyshidrotic eczema; however, data supporting dupilumab's use in this condition are still limited.[1-4] To highlight the role of dupilumab in dyshidrotic eczema, we report 15 consecutive patients from the Connecticut Veterans Affairs and University of Connecticut Departments of Dermatology who were treated with dupilumab for dyshidrosis.

Table I. Demographics and treatment characteristics

Demographics	No. (%)
Sex	
Men	10 (67)
Women	5 (33)
Age, y	Mean 56, range 32-76
Race	
White	14 (93)
Hispanic	1 (7)
Other	0
Treatment history	
Topical corticosteroid use	15 (100)
Systemic immunosuppressive use	7 (47)
Phototherapy use	1 (7)
Systemic immunosuppressive and phototherapy use	3 (20)
Psoriasis biologic use	7 (47)
Dupilumab-associated adverse events	
Facial redness	2 (13)
Ocular surface disease	1 (7)

Patients were excluded from this series if they had known atopic dermatitis or other eczematous eruptions elsewhere on their body. All patients initially received an atopic dermatitis dosing of dupilumab. Table I reports demographic data for these patients. All patients had previously failed topical corticosteroids, and 73% (11/15) had previously failed at least 1 oral immunosuppressive, phototherapy, or both. Forty-seven percent of patients (7/15) had previously received a diagnosis of having palmoplantar psoriasis, for which they had received other biologic medications. All patients demonstrated at least partial response to dupilumab, with decreased erythema and pruritus, whereas 6 of 15 patients (40%) had complete clearing. Ninety-three percent of patients (14/15) who began receiving dupilumab for dyshidrotic eczema are still receiving dupilumab, with an average treatment