To determine CAPB frequency in personal care products branded for children, we queried the online databases of the top 6 retailers by 2018 sales for "baby shampoo" and "baby soap," excluding retailers that do not sell individually packaged personal care products.[5] We ordered products by "best selling" except where there was a dedicated "best sellers" page (Amazon.com), where the most representative sorting option was "most viewed" (CVS.com), or where there was no best-selling filter and thus the first 20 products displayed meeting inclusion criteria were selected (Kroger.com). We cross-referenced product ingredients with the product's specific page on its respective company's website. To ensure appropriate product inclusion, products combined in "bundles" or not typically considered as children's shampoo or soap, such as dish soaps and diaper rash cream, were excluded.

The top 20 best-selling products for children's shampoo and soaps were analyzed for each retailer. Overall, 52.0% (39 of 75) of unique shampoo and 43.9% (29 of 66) of unique soap products contained CAPB. Of products found in more than 1 query, 61.9% (13 of 21) of shampoo and 78.6% (11 of 14) of soap products contained CAPB. Each of these products contained the term "hypoallergenic" on the product itself or in the product's description (Table I). The greatest proportion of purchased products containing CAPB came from the Walmart.com query (28 of 40 [70%]), whereas the Amazon.com query contained the least (18 of 40 [45%]) (Supplemental Fig 1, available via Mendeley v2, https://doi.org/10.17632/sfhsfzzxxt.2).

CAPB is a prevalent sensitizer in pediatric patients and should be avoided in patients with AD.[1-4] CAPB is not included on the T.R.U.E. test (SmartPractice Canada, Calgary, AB), a commonly used patch test containing 35 prevalent allergens, and therefore, expanded or custom patch testing is recommended for pediatric patients with AD.[3] Given the higher likelihood of CAPB sensitivity in patients with AD, we recommend pediatricians and dermatologists be aware of common products containing CAPB when counseling patients about their product choices.

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Funding sources: None.

Conflicts of interest: None disclosed.

IRB approval status: Not applicable.

Reprints not available from the authors.

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REFERENCES

1. Shaughnessy CN, Malajian D, Belsito DV. Cutaneous delayed-type hypersensitivity in patients with atopic dermatitis: reactivity to surfactants. *J Am Acad Dermatol*. 2014;70:704-708.
2. Kohli N, Nedorost S. Inflamed skin predisposes to sensitization to less potent allergens. *J Am Acad Dermatol*. 2016;75:312-317.e1.
3. Collis RW, Morris GM, Sheinbein DM, Coughlin CC. Expanded series and personalized patch tests for children: a retrospective cohort study. *Dermatitis*. 2019.
4. Ascha M, Irfan M, Bena J, Taylor JS, Sood A. Pediatric patch testing: a 10-year retrospective study. *Ann Allergy Asthma Immunol*. 2016;117:661-667.
5. *STORES Top 100 Retailers*. National Retail Federation; 2019. Available at: https://stores.org/stores-top-retailers-2019/. Accessed October 8, 2019.

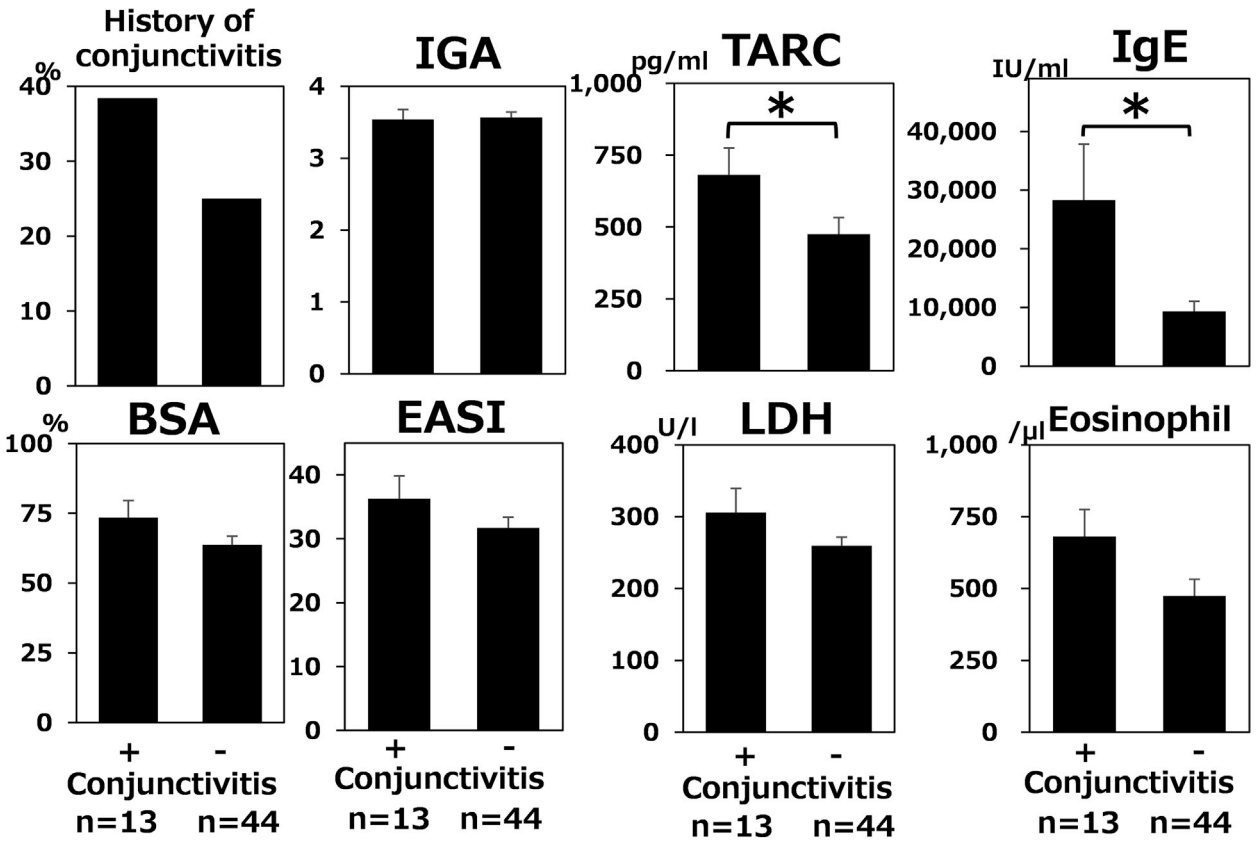
https://doi.org/10.1016/j.jaad.2019.12.036

Conjunctivitis in patients with atopic dermatitis treated with dupilumab is associated with higher baseline serum levels of immunoglobulin E and thymus and activation-regulated chemokine but not clinical severity in a real-world setting

To the Editor: Conjunctivitis has been observed as an adverse event in patients with atopic dermatitis (AD) receiving dupilumab. Its incidence rate ranges from 8.6% to 21.44% in clinical trials,[1] whereas real-world data have shown an even higher prevalence.[2] We analyzed our data to explore practical predictors of later development of conjunctivitis in patients with AD initiating dupilumab in a real-world setting.

The study included adult patients with AD who had been treated with dupilumab in our hospital for more than 3 months as of October 1, 2019. Other inclusion criteria were the same as those described in our previous report.[2] Baseline clinical severity, patents' history of conjunctivitis, and results from laboratory blood tests were compared between patients who developed conjunctivitis and those who did not.

Data on 57 Japanese adult patients (49 men, 8 women) with AD were analyzed. The mean ± standard deviation age at starting dupilumab was



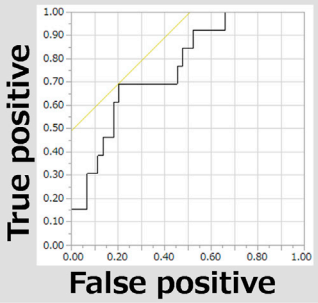
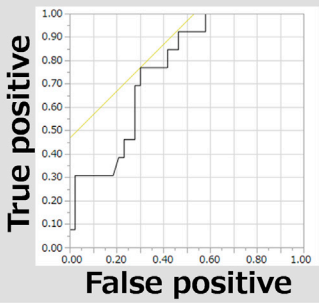
	TARC	IgE
ROC curve		
AUC	0.76399	0.76118
Cut-off value	3342	11200
Youden index	0.4878	0.4669
Sensitivity (%)	69.23	76.92
Specificity (%)	79.55	69.77

Fig 1. Comparison of the presence of a previous history of conjunctivitis, baseline atopic dermatitis severity, and certain biomarkers between patients with atopic dermatitis who did and did not develop conjunctivitis after starting dupilumab, and the receiver operating characteristic (*ROC*) curves of serum levels of thymus and activation-regulated chemokine (*TARC*) and IgE (*IgE*). Data are shown as the mean, with the *error bar* representing the standard error. *$P < .01$ between the 2 groups using the *t* test. *AUC*, Area under the ROC curve; *BSA*, affected body surface area; *EASI*, Eczema Area and Severity Index; *IGA*, Investigator's Global Assessment; *LDH*, serum lactate dehydrogenase level.

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