Anchored Matching-Adjusted Indirect Comparison of Treatment Efficacy Between Dupilumab and Lebrikizumab in Patients With Moderate-to-Severe Atopic Dermatitis

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Learning objective

To compare the efficacy of dupilumab + topical corticosteroids (TCS) to lebrikizumab + TCS using anchored matching-adjusted indirect comparison

Takeaway message

Patients treated with dupilumab + TCS have a higher likelihood of achieving improvements in AD signs, symptoms, and quality of life compared with lebrikizumab + TCS

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Disclosures: **Ständer S:** Almirall, Galderma, Sanofi, Trevi Therapeutics – research grants; AbbVie, Almirall, Amgen, BMS, Beiersdorf, Clexio, Galderma, Kiniksa, Klinge Pharma, KliRNA, P.G. Unna Academy, Pfizer, Sanofi, Vifor – consultant; AbbVie, Almirall, Celldex, Galderma, Lilly, P.G. Unna Akademie e. V., Pfizer, Regeneron Pharmaceuticals Inc., Sanofi, Vifor – advisory boards; AbbVie, Almirall, Amgen, Beiersdorf, Focus Insight, FOMF, GCI Health, Galderma, LEO Pharma, Lilly, L'Oréal, MEDahead, Medicinske Tidsskrifter, Novartis, P.G. Unna Academy, Pfizer, Sanofi, STREAMED UP, touchIME, UCB, Vifor – speaker. **Pinter A:** AbbVie, Almirall Hermal, Amgen, Biogen Idec, BioNTech, Boehringer Ingelheim, Celgene, Celltrion, Eli Lilly, Galderma, GSK, Hexal, Janssen, Klinge Pharma, LEO Pharma, MC2 Pharma, Medac, Merck Serono, Mitsubishi Tanabe Pharma, MSD, Novartis, Pascoe, Pfizer, Regeneron Pharmaceuticals Inc., Roche, Sandoz, Sanofi, Schering-Plough, Tigercat Pharma, UCB Pharma, Zuellig Pharma – clinical trials; AbbVie, Almirall Hermal, Amgen, Boehringer Ingelheim, Celgene, Celltrion, Eli Lilly, Galderma, Janssen, Klinge Pharma, LEO Pharma, Medac, Novartis, Pfizer, Sanofi, UCB Pharma, Zuellig Pharma – speaker fees; AbbVie, Almirall – grants. **Xu Y, Wang Z:** Regeneron Pharmaceuticals Inc. – employees and shareholders. **Guyot P, Bastian M, Noonan K:** Sanofi – employees, may hold stock and/or stock options in the company. **Cabon Y:** Aixial – contractor (on behalf of Sanofi), may hold stock and/or stock options in the company.

Acknowledgments and funding sources: Research sponsored by Sanofi and Regeneron Pharmaceuticals Inc. ClinicalTrials.gov Identifier: NCT02260986. Medical writing/editorial assistance was provided by Sumitra Debina Mitra, PhD, of Excerpta Medica, and was funded by Sanofi and Regeneron Pharmaceuticals Inc., according to the Good Publication Practice guidelines.

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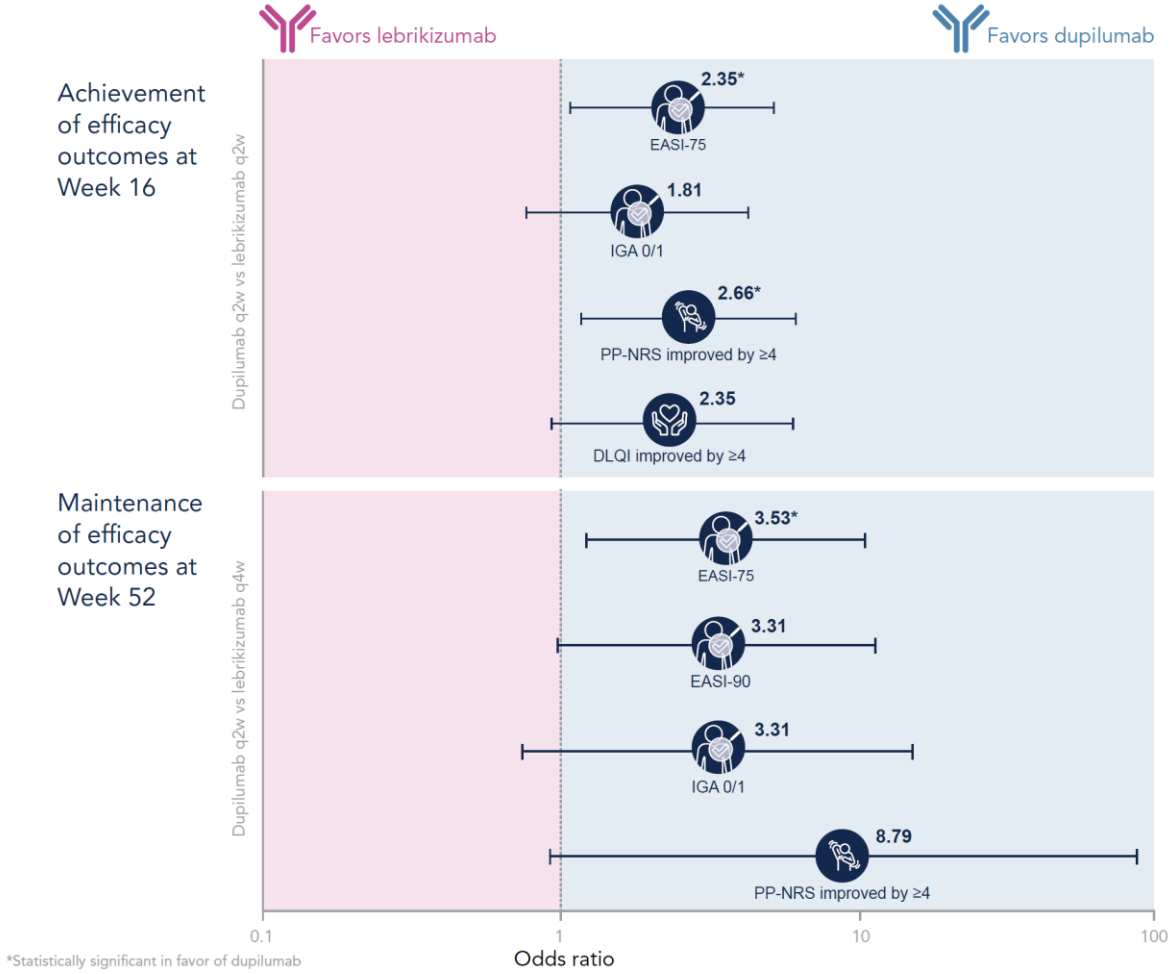
Presented at the 15th Georg RAJKA International Symposium on Atopic Dermatitis (ISAD 2025); Melbourne, Australia; October 24–26, 2025.

Background

Comparing dupilumab vs lebrikizumab for moderate-to-severe AD by placebo-adjusted Bucher ITC[1]



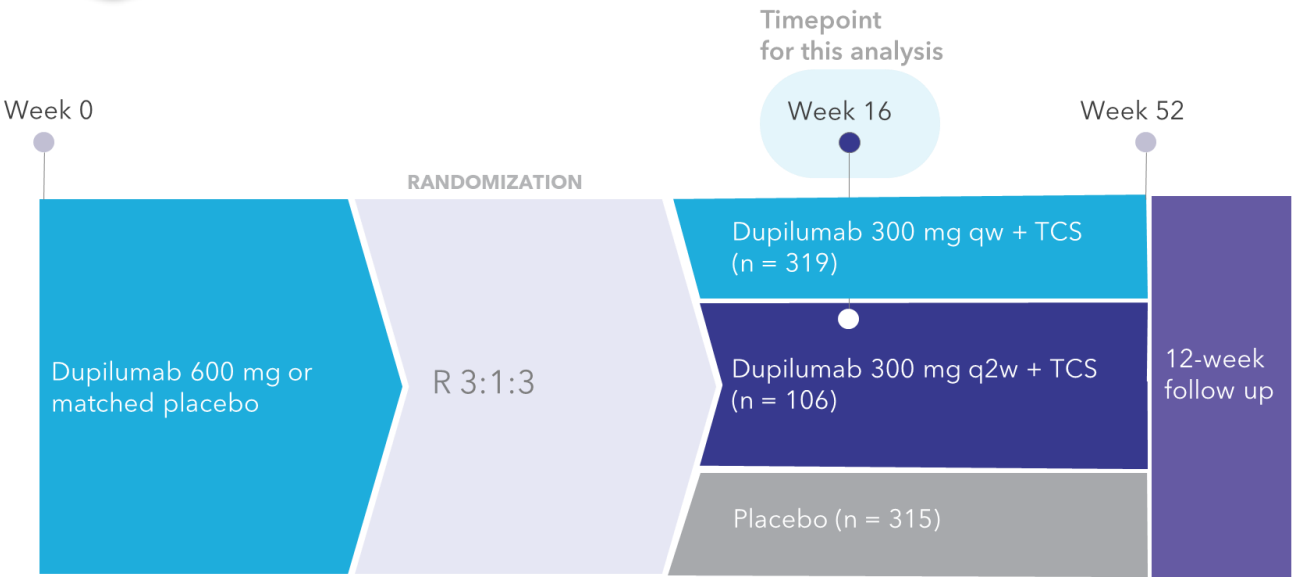
Placebo-adjusted Bucher ITC: likelihood of achieving AD efficacy outcomes at 16 weeks and maintaining efficacy at 52 weeks was higher for dupilumab compared with lebrikizumab[1]

- However, the Bucher ITC method does not account for differences in baseline characteristics between trial populations
- The anchored MAIC method provides weights to adjust individual patient data of one study to match the characteristics of another study[2]

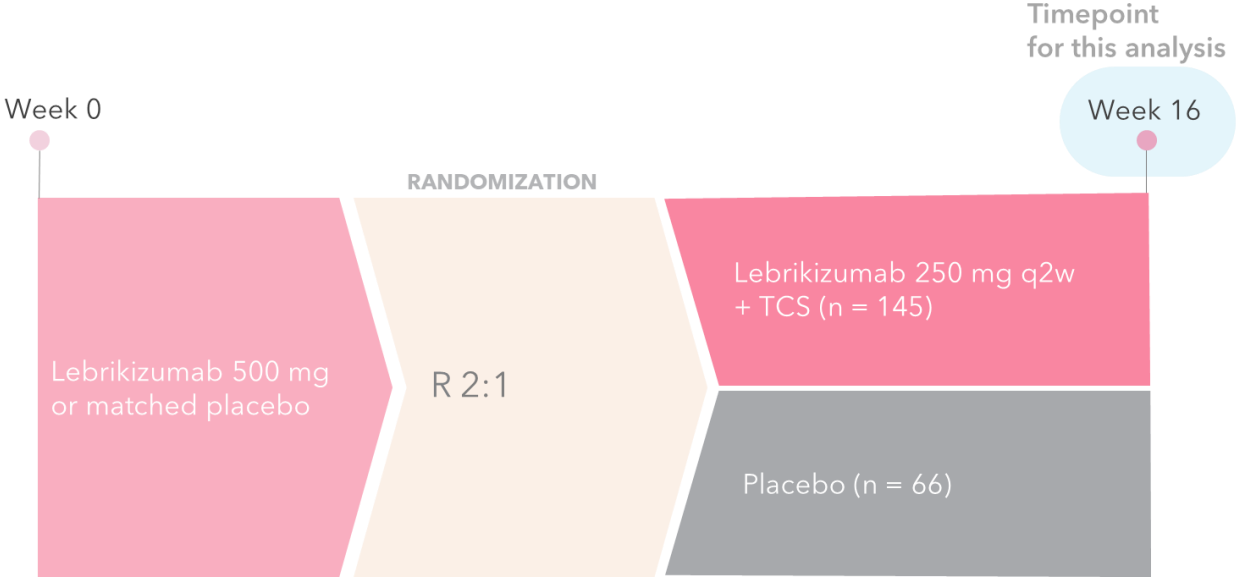
1. Ständer S. et al. Dermatol Ther. 2025;15:2537-51. 2. Signorovitch, JE, et al. Value Health. 2012;15(6):940-7.
AD, atopic dermatitis; DLQI, Dermatology and Life Quality Index; EASI-75/90, 75%/90% improvement from baseline in Eczema Area and Severity Index; IGA, Investigator's Global Assessment; ITC, indirect treatment comparison; MAIC, matching-adjusted indirect comparison; PP-NRS, Peak Pruritus Numeric Rating Scale; q4w, every 4 weeks; q2w, every 2 weeks.

Objective & Methods

To evaluate and indirectly compare the efficacy of dupilumab vs lebrikizumab in patients with moderate-to-severe AD using an anchored MAIC methodology



LIBERTY AD CHRONOS study[1]
NCT02260986



ADhere study[2]
NCT05916365

Variables used to adjust **CHRONOS** data to **ADhere** data for MAIC:

- Age, mean and SD
- Male, %
- White, %
- EASI, mean and SD
- IGA = 4, %

1. Blauvelt A. et al. Lancet. 2017;389:2287-303. 2. Simpson EL. et al. JAMA Dermatol. 2023;159(2):182-91.
EASI, Eczema Area and Severity Index; SD, standard deviation; TCS, topical corticosteroid(s); q2w, every 2 weeks; qw, every week.

Results

Baseline characteristics of the ADhere and LIBERTY AD CHRONOS populations

	ADhere*		LIBERTY AD CHRONOS	
	Placebo + TCS (n = 66)	Lebrikizumab 250 mg q2w + TCS (n = 145)	Placebo + TCS (n = 315)	Dupilumab 300 mg q2w + TCS (n = 106)
Baseline demographics				
Age, mean (SD)*, years	36.7 (17.9)	37.5 (19.9)	36.6 (13.0)	39.6 (14.0)
Race, n (%)				
White	40 (60.6)	90 (62.1)	208 (66.0)	74 (69.8)
Black or African American	9 (13.6)	19 (13.1)	19 (6.0)	2 (1.9)
Asian	13 (19.7)	18 (12.4)	83 (26.3)	29 (27.4)
Other	4 (6.1)	18 (12.4)	5 (1.6)	1 (0.9)
Male, n (%)	33 (50.0)	75 (51.7)	193 (61.3)	62 (58.5)
Disease characteristics				
Duration of AD, mean (SD), years	21.2 (13.9)	21.0 (17.4)	27.5 (14.3)	30.1 (15.5)
IGA 3:4, %, range 0–4	73:27	68:32	53:47	50:50
EASI total score, mean (SD), range 0–72	26.4 (10.6)	27.7 (11.1)	32.6 (12.9)	33.6 (13.3)
PP-NRS score, mean (SD), range 0–10	6.8 (2.0)	7.3 (1.8)	7.3 (1.8)	7.4 (1.7)
DLQI score, mean (SD), range 0–30	13.5 (7.5)	14.9 (7.2)	14.7 (7.4)	14.5 (7.3)

*The ADhere trial included adolescent patients: placebo + TCS, 14 (21.1%); lebrikizumab + TCS, 32 (22.1%).

Results

Baseline characteristics of the LIBERTY AD CHRONOS population before and after matching to the ADhere population

Variables	LIBERTY AD CHRONOS Placebo + TCS			LIBERTY AD CHRONOS Dupilumab 300 mg q2w + TCS		
	Unadjusted	Adjusted*	ADhere Placebo + TCS	Unadjusted	Adjusted*	ADhere Lebrikizumab 250 mg q2w + TCS
▶ Age, mean (SD), years	36.6 (13.0)	36.7 (17.9)	36.7 (17.9)	39.6 (13.9)	37.5 (19.9)	37. 5 (19.9)
Duration of AD, mean (SD), years	27.5 (14.3)	24.2 (15.1)	21.2 (13.9)	30.1 (15.5)	27.9 (18.1)	21.0 (17.4)
▶ White, n (%)	**208.0** (66.0)	**125.1** (60.6)	40.0 (60.6)	**74.0** (69.8)	**33.4** (62.1)	90.0 (62.1)
▶ Male, n (%)	**193.0** (61.3)	**103.2** (50.0)	33.0 (50.0)	**62.0** (58.5)	**27.8** (51.7)	75.0 (51.7)
▶ IGA = 4, n (%)	**147.0** (46.7)	**56.3** (27.3)	18.0 (27.3)	**53.0** (50)	**17.4** (32.4)	47.0 (32.4)
▶ EASI total score, mean (SD)	**32.6** (12.9)	**26.4** (10.6)	26.4 (10.6)	**33.6** (13.2)	**27.7** (11.1)	27.7 (11.1)
PP-NRS score, mean (SD)	7.3 (1.8)	7.1 (1.9)	6.8 (2.0)	7.4 (1.7)	7.4 (1.7)	7.3 (1.8)
DLQI, mean (SD)	14.7 (7.4)	13.0 (7.2)	13.5 (7.5)	14.5 (7.3)	13.7 (8.4)	14.9 (7.2)

▶ Variables used to adjust **CHRONOS** data to **ADhere** data for MAIC.
*Post-adjustment: ESS placebo population = 129.1; ESS treated population = 34.2.
Figures in bold highlight major differences in the unadjusted and adjusted values.
Adjusted LIBERTY AD CHRONOS population: baseline characteristics of the placebo and dupilumab populations in the LIBERTY AD CHRONOS trial were reweighted to match the baseline characteristics of the placebo and lebrikizumab populations, respectively, in the ADhere trial.
ESS, effective sample size.

Results

Proportion of patients achieving efficacy outcomes at Week 16 is similar in the unadjusted and adjusted LIBERTY AD CHRONOS populations

Efficacy outcomes	Placebo + TCS		Dupilumab 300 mg q2w + TCS	
	Unadjusted %	Adjusted* %	Unadjusted %	Adjusted* %
IGA (0/1) and ≥2-point improvement	12.4	10.6	38.7	38.8
EASI-75	23.2	22.4	68.9	71.7
PP-NRS ≥4-point improvement	18.7	15.1	56.6	64.8
DLQI ≥4-point improvement	41.6	39.3	76.4	69.9

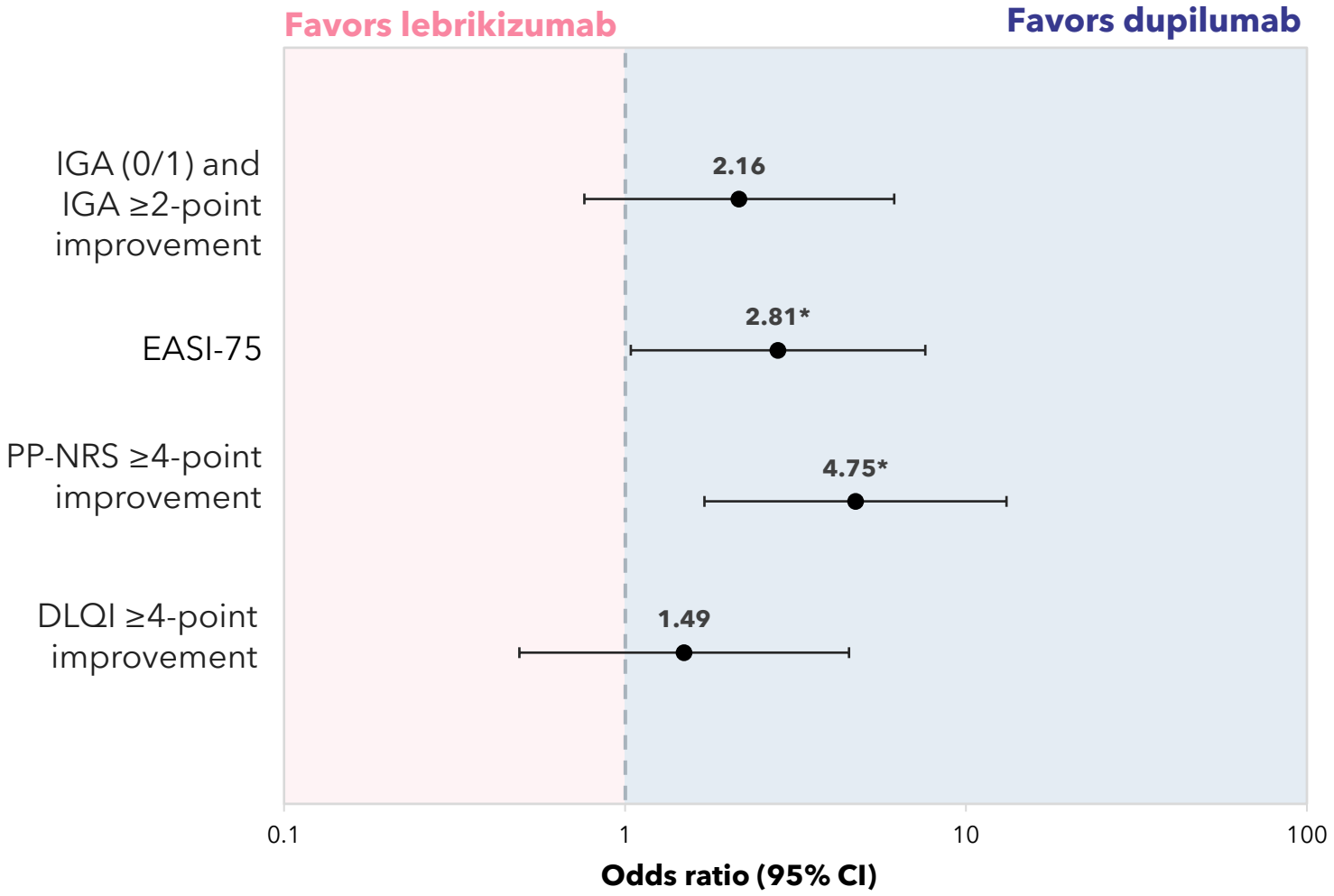
Results

Likelihood of achieving efficacy outcomes at Week 16 in dupilumab vs placebo LIBERTY AD CHRONOS populations remains high after adjusting against the ADhere populations

Efficacy outcomes	ADhere Lebrikizumab vs placebo	LIBERTY AD CHRONOS Dupilumab vs placebo	
	OR⁺ (95% CI)	**Unadjusted OR** (95% CI)	**Adjusted OR** (95% CI)*
IGA (0/1) and ≥2-point improvement	**2.47** (1.27, 4.82)	**4.46** (2.67, 7.46)	**5.33** (2.37, 11.96)
EASI-75	**3.12** (1.71, 5.7)	**7.33** (4.5, 11.94)	**8.78** (3.98, 19.36)
PP-NRS ≥4-point improvement	**2.19** (1.14, 4.21)	**5.82** (3.58, 9.46)	**10.38** (4.75, 22.66)
DLQI ≥4-point improvement	**2.41** (1.16, 5.02)	**5.65** (3.26, 9.79)	**3.58** (1.54, 8.31)

⁺ORs have been computed without adjustment based on the reported data. *Post-adjustment: ESS placebo population = 129.1; ESS treated population = 34.2.
CI, confidence interval; OR, odds ratio.

Results & Conclusion



Reweighted dupilumab + TCS population in our MAIC analysis demonstrated significantly improved treatment efficacy for EASI and PP-NRS outcomes vs lebrikizumab + TCS, with a numerically higher treatment efficacy for IGA and DLQI responses in favor of dupilumab; these results align with the placebo-adjusted Bucher ITC study[1]

*Statistically significant.

1. Ständer S. et al. Dermatol Ther. 2025;15:2537-51.