Supplementary Information

Efficacy and Safety of Abrocitinib in Patients With Severe and/or Difficult-to-Treat Atopic Dermatitis: A Post hoc Analysis of the Randomized Phase 3 JADE COMPARE Trial

Journal: *American Journal of Clinical Dermatology*

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Funding

This study and the Open Access fee were sponsored by Pfizer Inc.

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Supplementary Figure 3 LSM change from baseline in POEM at week 16 in patients with baseline **a** IGA= 4, **b** EASI > 21, **c** EASI > 38, **d** failure or intolerance to prior systemic agents,[a] **e** %BSA > 50, **f** %BSA > 65 and **g** in the combined subgroup[b]

Supplementary Figure 4 LSM change from baseline in DLQI at week 16 in patients with baseline **a** IGA= 4, **b** EASI > 21, **c** EASI > 38, **d** failure or intolerance to prior systemic agents,[a] **e** %BSA > 50, **f** %BSA > 65 and **g** in the combined subgroup[b]

Supplementary Table 1 Patient demographics and baseline disease characteristics by treatment group for patients with IGA= 4, EASI > 21, and EASI > 38

	IGA= 4 ***n*** **= 296**				**EASI > 21** ***n*** **= 603**				**EASI > 38** ***n*** **= 225**			
	Pbo ***n*** **= 43**	**Abro 100 mg QD** ***n*** **= 85**	**Abro 200 mg QD** ***n*** **= 88**	**Dupi 300 mg Q2W** ***n*** **= 80**	**Pbo** ***n*** **= 97**	**Abro 100 mg QD** ***n*** **= 160**	**Abro 200 mg QD** ***n*** **= 171**	**Dupi 300 mg Q2W** ***n*** **= 175**	**Pbo** ***n*** **= 39**	**Abro 100 mg QD** ***n*** **= 63**	**Abro 200 mg QD** ***n*** **= 63**	**Dupi 300 mg Q2W** ***n*** **= 60**
Age, mean ± SD, years	37.7 ± 14.3	38.2 ± 14.9	38.0 ± 15.1	36.4 ± 14.1	37.0 ± 15.3	36.8 ± 14.6	37.5 ± 13.9	36.1 ± 14.0	35.2 ± 15.4	37.3 ± 14.2	36.8 ± 14.9	36.2 ± 13.2
Sex, *n* (%)												
Female	14 (32.6)	36 (42.4)	42 (47.7)	38 (47.5)	36 (37.1)	73 (45.6)	82 (48.0)	85 (48.6)	12 (30.8)	29 (46.0)	25 (39.7)	25 (41.7)
Race, *n* (%)												
White	23 (53.5)	58 (68.2)	54 (61.4)	48 (60.0)	58 (59.8)	119 (74.4)	115 (67.3)	123 (70.3)	22 (56.4)	47 (74.6)	48 (76.2)	44 (73.3)
Black or African American	4 (9.3)	4 (4.7)	5 (5.7)	5 (6.3)	5 (5.2)	4 (2.5)	6 (3.5)	11 (6.3)	4 (10.3)	3 (4.8)	1 (1.6)	2 (3.3)
Asian	14 (32.6)	23 (27.1)	27 (30.7)	22 (27.5)	27 (27.8)	36 (22.5)	47 (27.5)	35 (20.0)	11 (28.2)	13 (20.6)	14 (22.2)	11 (18.3)
Other[a]	2 (4.6)	0 (0.0)	2 (2.3)	5 (6.2)	7 (7.2)	1 (0.6)	3 (1.8)	6 (3.4)	2 (5.1)	0 (0.0)	0 (0.0)	3 (5.0)
IGA score, *n* %												
3 (moderate)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	55 (56.7)	81 (50.6)	88 (51.5)	98 (56.0)	13 (33.3)	13 (20.6)	17 (27.0)	21 (35.0)
4 (severe)	43 (100.0)	85 (100.0)	88 (100.0)	80 (100.0)	42 (43.3)	79 (49.4)	83 (48.5)	77 (44.0)	26 (66.7)	50 (79.4)	46 (73.0)	39 (65.0)
%BSA involvement, mean ± SD	65.6 ± 23.0	62.8 ± 23.0	60.6 ± 23.5	60.1 ± 20.8	56.9 ± 23.4	57.8 ± 21.0	58.6 ± 20.5	54.9 ± 19.7	78.8 ± 13.0	75.8 ± 15.2	76.4 ± 14.4	73.3 ± 13.4
EASI score, mean ± SD	40.7 ± 11.9	41.0 ± 13.8	40.7 ± 13.3	39.4 ± 12.1	35.5 ± 11.6	36.3 ± 12.7	36.6 ± 11.9	35.0 ± 11.0	47.7 ± 6.7	49.6 ± 8.7	49.7 ± 8.3	47.8 ± 7.7
PP-NRS score, mean ± SD	7.6 ± 1.8	7.7 ± 1.4	8.2 ± 1.5	7.7 ± 1.6[b]	7.4 ± 1.7	7.3 ± 1.7	7.7 ± 1.5	7.4 ± 1.6[c]	8.1 ± 1.7	7.8 ± 1.5	7.8 ± 1.6	8.0 ± 1.6[d]
POEM score, mean ± SD	22.2 ± 5.7	22.2 ± 4.3	23.4 ± 4.4	22.3 ± 5.5	20.9 ± 6.0	21.3 ± 5.0	22.3 ± 4.8	21.7 ± 5.1	22.8 ± 5.9	22.7 ± 4.2	23.8 ± 4.6	22.6 ± 5.1
DLQI score, mean ± SD	17.4 ± 6.3	16.7 ± 6.3	18.2 ± 6.1	17.1 ± 6.8	16.2 ± 6.8	15.4 ± 6.5	16.6 ± 6.3	15.9 ± 6.3	18.5 ± 6.3	17.5 ± 6.5	18.6 ± 5.9	18.0 ± 6.3

%BSA percentage of body surface area, *Abro* abrocitinib, *DLQI* Dermatology Life Quality Index, *Dupi* dupilumab, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *Pbo* placebo, *POEM* Patient-Oriented Eczema Measure, *PP-NRS* Peak Pruritus Numerical Rating Scale, *QD* once daily, *Q2W* once every 2 weeks

[a]American Indian or Alaska Native, multiracial, or race not reported

[b]*n* = 79 patients

[c]*n* = 174 patients

[d]*n* = 59 patients

Supplementary Table 2 Patient demographics and baseline disease characteristics by treatment group for patients with %BSA > 50 and %BSA > 65

	%BSA > 50 *n* = 360				**%BSA > 65 *n* = 214**			
	Placebo *n* = 58	**Abrocitinib 100 mg QD *n* = 100**	**Abrocitinib 200 mg QD *n* = 106**	**Dupilumab 300 mg Q2W *n* = 96**	**Placebo *n* = 37**	**Abrocitinib 100 mg QD *n* = 61**	**Abrocitinib 200 mg QD *n* = 62**	**Dupilumab 300 mg Q2W *n* = 54**
Age, mean ± SD, years	34.0 ± 13.9	36.3 ± 14.6	37.4 ± 14.7	35.4 ± 13.5	33.1 ± 12.5	38.0 ± 15.5	36.1 ± 13.7	36.5 ±13.0
Sex, *n* (%)								
Female	19 (32.8)	43 (43.0)	50 (47.2)	41 (42.7)	12 (32.4)	26 (42.6)	25 (40.3)	27 (50.0)
Race, *n* (%)								
White	33 (56.9)	76 (76.0)	69 (65.1)	64 (66.7)	20 (54.1)	45 (73.8)	43 (69.4)	33 (61.1)
Black or African American	5 (8.6)	2 (2.0)	1 (0.9)	6 (6.3)	4 (10.8)	1 (1.6)	1 (1.6)	4 (7.4)
Asian	18 (31.0)	21 (21.0)	35 (33.0)	22 (22.9)	11 (29.7)	14 (23.0)	18 (29.0)	13 (24.1)
Other[a]	2 (3.4)	1 (1.0)	1 (0.9)	4 (4.2)	2 (5.4)	1 (1.6)	0 (0.0)	4 (7.4)
IGA score, *n* (%)								
3 (moderate)	25 (43.1)	44 (44.0)	49 (46.2)	44 (45.8)	14 (37.8)	18 (29.5)	24 (38.7)	18 (33.3)
4 (severe)	33 (56.9)	56 (56.0)	57 (53.8)	52 (54.2)	23 (62.2)	43 (70.5)	38 (61.3)	36 (66.7)
%BSA involvement, mean ± SD	73.1 ± 14.4	70.9 ± 14.7	71.2 ± 14.2	69.5 ± 12.8	82.0 ± 9.5	80.4 ± 10.3	80.9 ± 10.3	78.8 ± 8.9
EASI score, mean ± SD	42.4 ± 9.8	42.0 ± 12.4	42.0 ± 11.8	41.4 ± 10.4	47.0 ± 7.8	48.4 ± 10.7	47.2 ± 11.7	45.9 ± 10.5
PP-NRS score, mean ± SD	7.6 ± 1.8	7.4 ± 1.6	7.6 ± 1.5	7.9 ± 1.6[b]	7.9 ± 1.8	7.5 ± 1.6	7.7 ± 1.5	7.8 ± 1.6[c]
POEM score, mean ± SD	21.4 ± 6.2	21.8 ± 4.9	22.7 ± 4.8	21.9 ± 5.2	22.1 ± 5.9	22.2 ± 4.4	23.4 ± 4.6	21.7 ± 5.4
DLQI score, mean ± SD	17.0 ± 6.9	16.3 ± 6.5	16.8 ± 6.2	16.6 ± 6.1	17.9 ± 6.3	17.4 ± 6.5	18.2 ± 6.3	17.8 ± 6.3

%BSA percentage of body surface area, *DLQI* Dermatology Life Quality Index, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *POEM* Patient-Oriented Eczema Measure, *PP-NRS* Peak Pruritus Numerical Rating Scale, *QD* once daily, *Q2W* once every 2 weeks

[a]American Indian or Alaska Native, multiracial, or race not reported

[b]*n* = 95 patients

[c]*n* = 53 patients

Supplementary Table 3 Patient demographics and baseline disease characteristics by treatment group for patients who failed or were intolerant to prior systemic agents[a]

	Failure or intolerance to prior systemic agents[a] *n* = 121			
	Placebo *n* = 19	**Abrocitinib 100 mg QD *n* = 28**	**Abrocitinib 200 mg QD *n* = 29**	**Dupilumab 300 mg Q2W *n* = 45**
Age, mean ± SD, years	33.3 ± 14.7	34.9 ± 13.0	38.5 ± 13.0	37.4 ± 13.9
Sex, *n* (%)				
Female	2 (10.5)	9 (32.1)	11 (37.9)	18 (40.0)
Race, *n* (%)				
White	12 (63.2)	23 (82.1)	19 (65.5)	31 (68.9)
Black or African American	1 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)
Asian	4 (21.1)	5 (17.9)	10 (34.5)	12 (26.7)
Other[b]	2 (10.5)	0 (0.0)	0 (0.0)	2 (4.4)
IGA score, *n* (%)				
3 (moderate)	10 (52.6)	18 (64.3)	8 (27.6)	22 (48.9)
4 (severe)	9 (47.4)	10 (35.7)	21 (72.4)	23 (51.1)
%BSA involvement, mean ± SD	60.1 ± 21.7	54.9 ± 22.0	60.9 ± 25.4	56.8 ± 22.0
EASI score, mean ± SD	36.0 ± 12.1	34.1 ± 14.6	40.2 ± 14.4	36.7 ± 13.0
PP-NRS score, mean ± SD	7.4 ± 2.0	7.0 ± 1.6	7.7 ± 1.3	7.5 ± 1.6[c]
POEM score, mean ± SD	21.1 ± 5.9	19.9 ± 5.6	22.8 ± 5.2	20.7 ± 5.6
DLQI score, mean ± SD	16.1 ± 6.6	16.1 ± 5.7	17.2 ± 5.7	15.6 ± 6.4

DLQI Dermatology Life Quality Index, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *POEM* Patient-Oriented Eczema Measure, *PP-NRS* Peak Pruritus Numerical Rating Scale, *QD* once daily, *Q2W* once every 2 weeks

[a]Excluding patients who took only corticosteroids

[b]American Indian or Alaska Native, multiracial, or race not reported

[c]*n* = 44 patients

Supplementary Table 4 Patient demographics and baseline disease characteristics by treatment group for the combined subgroup[a]

	Combined subgroup[a] *n* = 48			
	Placebo *n* = 7	**Abrocitinib 100 mg QD *n* = 8**	**Abrocitinib 200 mg QD *n* = 16**	**Dupilumab 300 mg Q2W *n* = 17**
Age, mean ± SD, years	27.9 ± 7.8	28.4 ± 8.0	35.1 ± 9.7	41.9 ± 16.0
Sex, *n* (%)				
Female	0 (0.0)	2 (25.0)	6 (37.5)	4 (23.5)
Race, *n* (%)				
White	3 (42.9)	6 (75.0)	10 (62.5)	8 (47.1)
Black or African American	1 (14.3)	0 (0.0)	0 (0.0)	0 (0.0)
Asian	2 (28.6)	2 (25.0)	6 (37.5)	7 (41.2)
Other[b]	1 (14.3)	0 (0.0)	0 (0.0)	2 (11.8)
IGA score, *n* (%)				
3 (moderate)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
4 (severe)	7 (100.0)	8 (100.0)	16 (100.0)	17 (100.0)
%BSA involvement, mean ± SD	77.1 ± 13.5	74.9 ± 14.8	78.4 ± 14.0	74.6 ± 11.7
EASI score, mean ± SD	45.6 ± 11.1	46.0 ± 12.6	50.6 ± 8.0	45.6 ±11.4
PP-NRS score, mean ± SD	7.6 ± 2.1	6.9 ± 1.5	8.1 ± 0.9	7.7 ± 1.7[c]
POEM score, mean ± SD	22.6 ± 6.3	20.9 ± 3.5	25.4 ± 2.7	20.4 ± 6.2
DLQI score, mean ± SD	18.3 ± 5.5	16.5 ± 6.2	18.8 ± 5.1	14.9 ± 6.8

DLQI Dermatology Life Quality Index, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *POEM* Patient-Oriented Eczema Measure, *PP-NRS* Peak Pruritus Numerical Rating Scale, *QD* once daily, *Q2W* once every 2 weeks

[a]Combined subgroup defined as patients with baseline IGA= 4, and EASI > 21, and %BSA > 50, and failure or intolerance to prior systemic agents (excluding patients who took only corticosteroids)

[b]American Indian or Alaska Native, multiracial, or race not reported

[c]*n* = 16 patients

Supplementary Table 5 Prior systemic therapies in patients who failed or were intolerant to prior therapy with systemic agents[a]

	Placebo ***n*** **= 19**	**Abrocitinib 100 mg QD** ***n*** **= 28**	**Abrocitinib 200 mg QD** ***n*** **= 29**	**Dupilumab 300 mg Q2W** ***n*** **= 45**
Systemic agents, *n* (%)[b]	19 (100)	28 (100.0)	29 (100.0)	45 (100.0)
Nonbiologic agents[c]	16 (84.2)	26 (92.9)	25 (86.2)	42 (93.3)
Cyclosporine	11 (57.9)	21 (75.0)	18 (62.1)	33 (73.3)
Corticosteroids	8 (42.1)	11 (39.3)	14 (48.3)	23 (51.1)
Other nonbiologic	8 (42.1)	9 (32.1)	9 (31.0)	19 (42.2)
Biologic agents (excluding dupilumab)[c]	3 (15.8)	2 (7.1)	4 (13.8)	3 (6.7)

QD once daily, *Q2W* every 2 weeks

[a]Excluding patients who took only corticosteroids

[b]Patients were exclusively counted in either the nonbiologic subcategory or biologic subcategory, with the latter taking precedence

[c]Patients could be counted more than once for each prior medication type; biologic agents included efalizumab, omalizumab, and tralokinumab

Supplementary Table 6 Reasons for discontinuation of prior systemic therapies by treatment group in patients who failed or were intolerant to prior systemic agents[a]

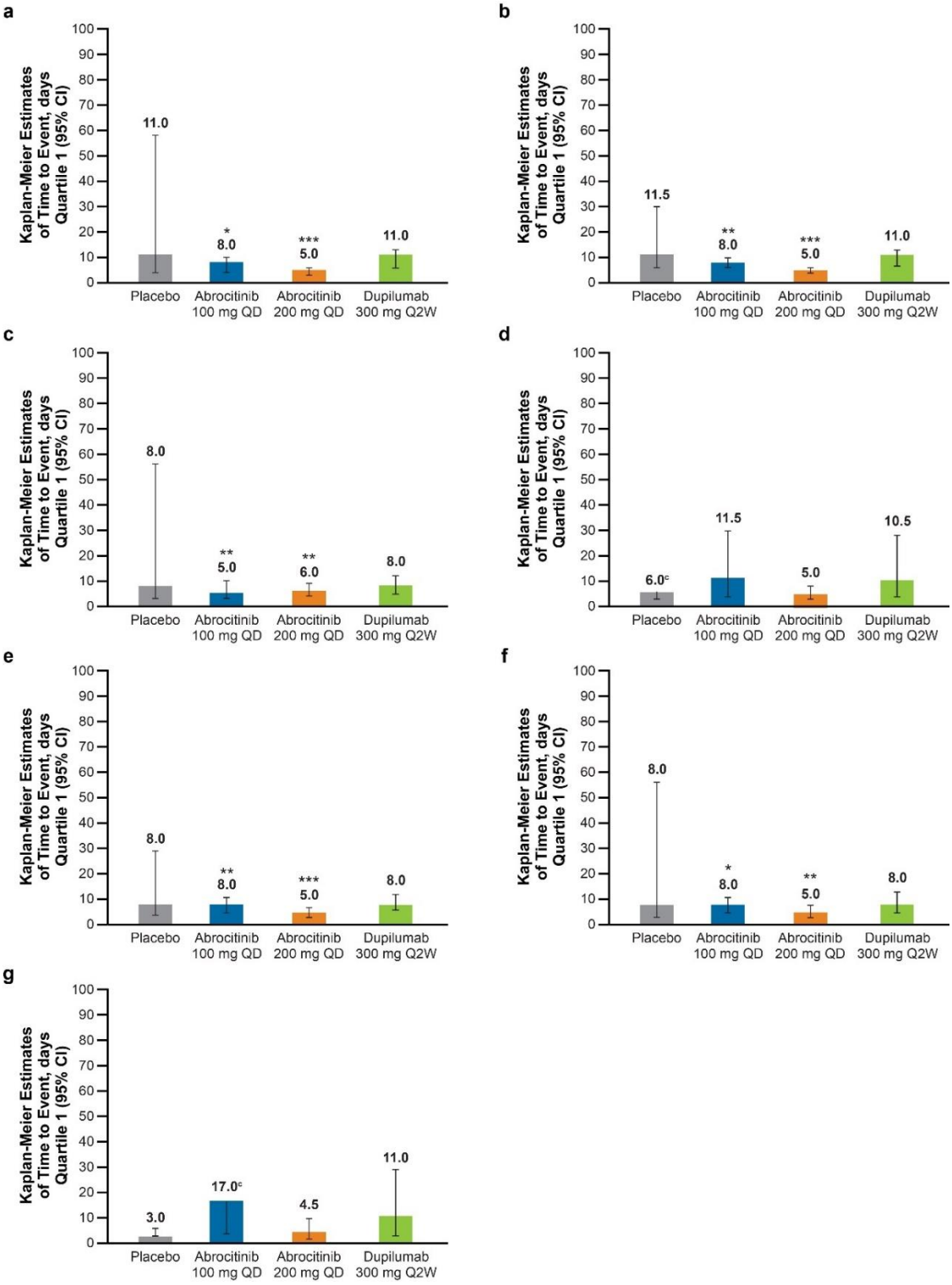
	Placebo ***n*** **= 19**	**Abrocitinib 100 mg QD** ***n*** **= 28**	**Abrocitinib 200 mg QD** ***n*** **= 29**	**Dupilumab 300 mg Q2W** ***n*** **= 45**
Reason for discontinuation, *n* (%)[b]				
Lack of efficacy	18 (94.7)	24 (85.7)	23 (79.3)	41 (91.1)
Intolerability	6 (31.6)	3 (10.7)	3 (10.3)	6 (13.3)
Adverse event	0 (0.0)	1 (3.6)	4 (13.8)	5 (11.1)
Other	0 (0.0)	1 (3.6)	0 (0.0)	0 (0.0)

QD once daily, *Q2W* every 2 weeks

[a]Excluding patients who took only corticosteroids. Included data up to 28 days after last dose of study

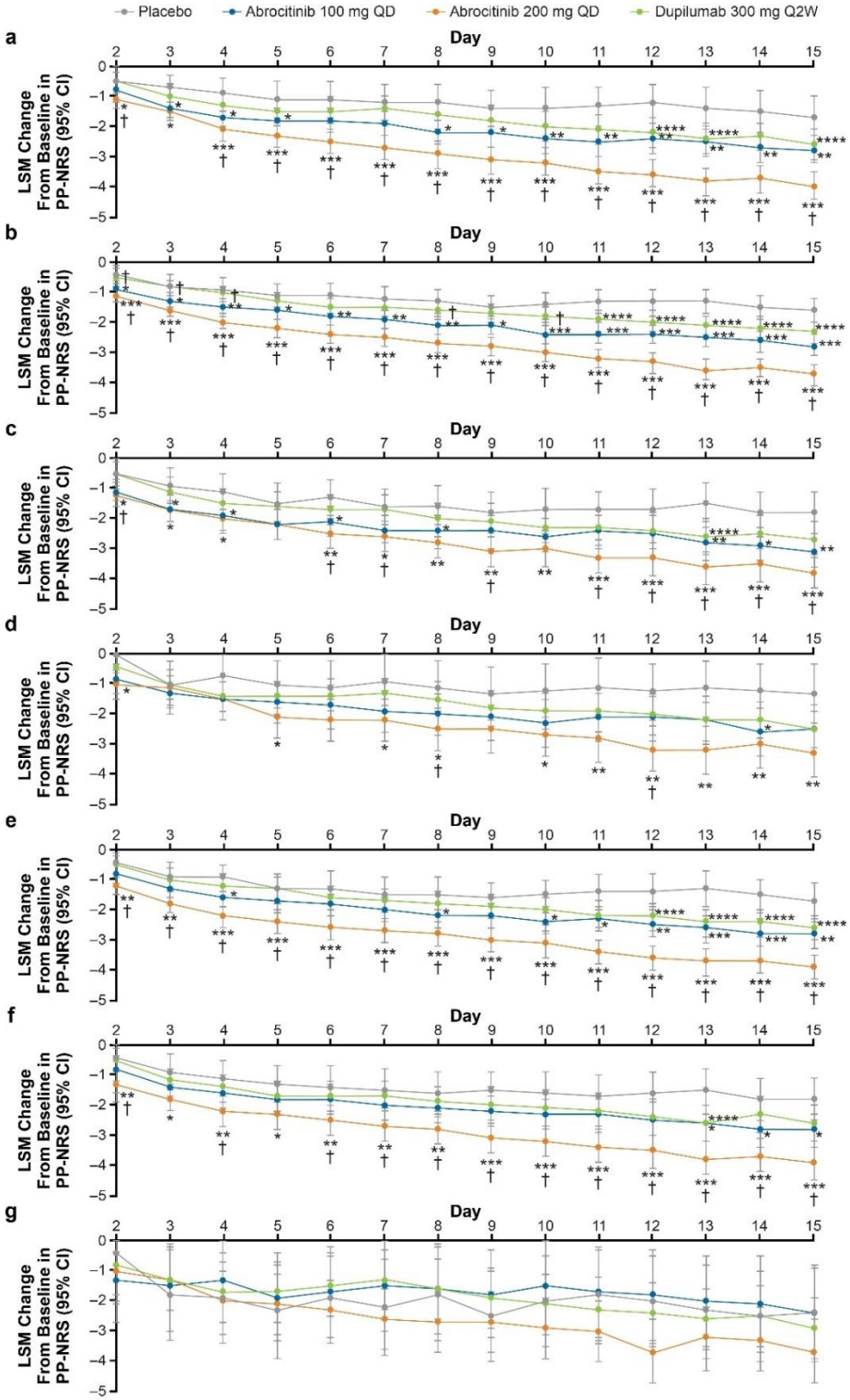
[b]Patients may be counted more than once across the unique discontinuation reasons

Supplementary Figure 1 Time (days) to first PP-NRS4 response in patients with baseline **a** IGA= 4, **b** EASI > 21, **c** EASI > 38, **d** failure of or intolerance to prior systemic agents,[a] **e** %BSA > 50, **f** %BSA > 65 and **g** in the combined subgroup[b]



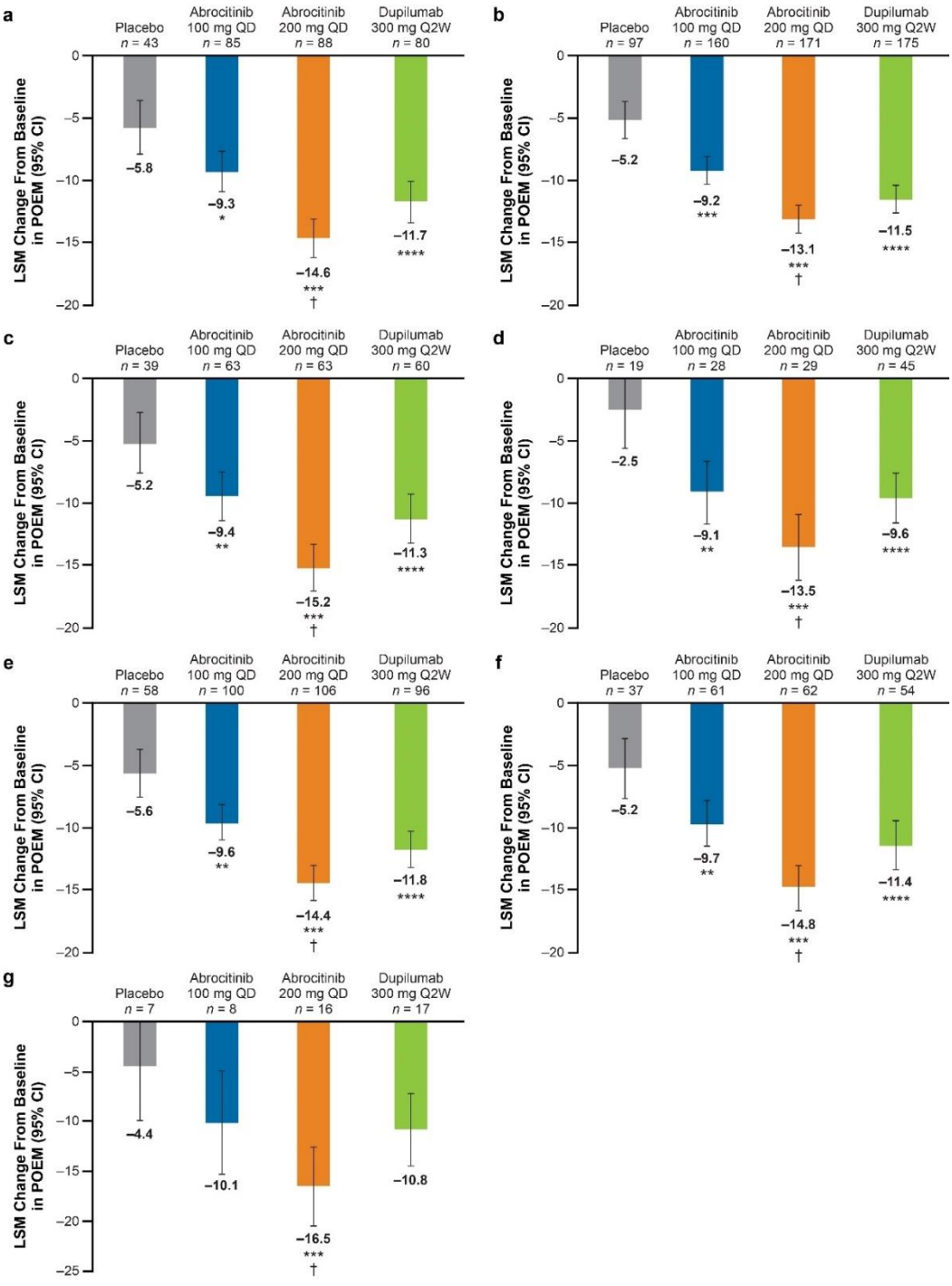
*$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$ for abrocitinib versus placebo. Comparison between dupilumab and placebo was not performed for this parameter. [a]Excluding patients who took only corticosteroids. [b]The combined subgroup was defined as patients with baseline IGA= 4, and EASI > 21, and %BSA > 50 and failure or intolerance to prior systemic agents (excluding patients who took only corticosteroids). [c]Upper bound of the 95% CI is not evaluable because too few events were observed. *%BSA* percentage of body surface area, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *PP-NRS4* ≥4-point improvement from baseline in Peak Pruritus-Numerical Rating Scale, *QD* once daily, *Q2W* once every 2 weeks

Supplementary Figure 2 LSM change from baseline in PP-NRS from day 2 to day 15 in patients with baseline **a** IGA = 4, **b** EASI > 21, **c** EASI > 38, **d** failure or intolerance to prior systemic agents,[a] **e** %BSA >50, **f** %BSA >65, and **g** in the combined subgroup[b]



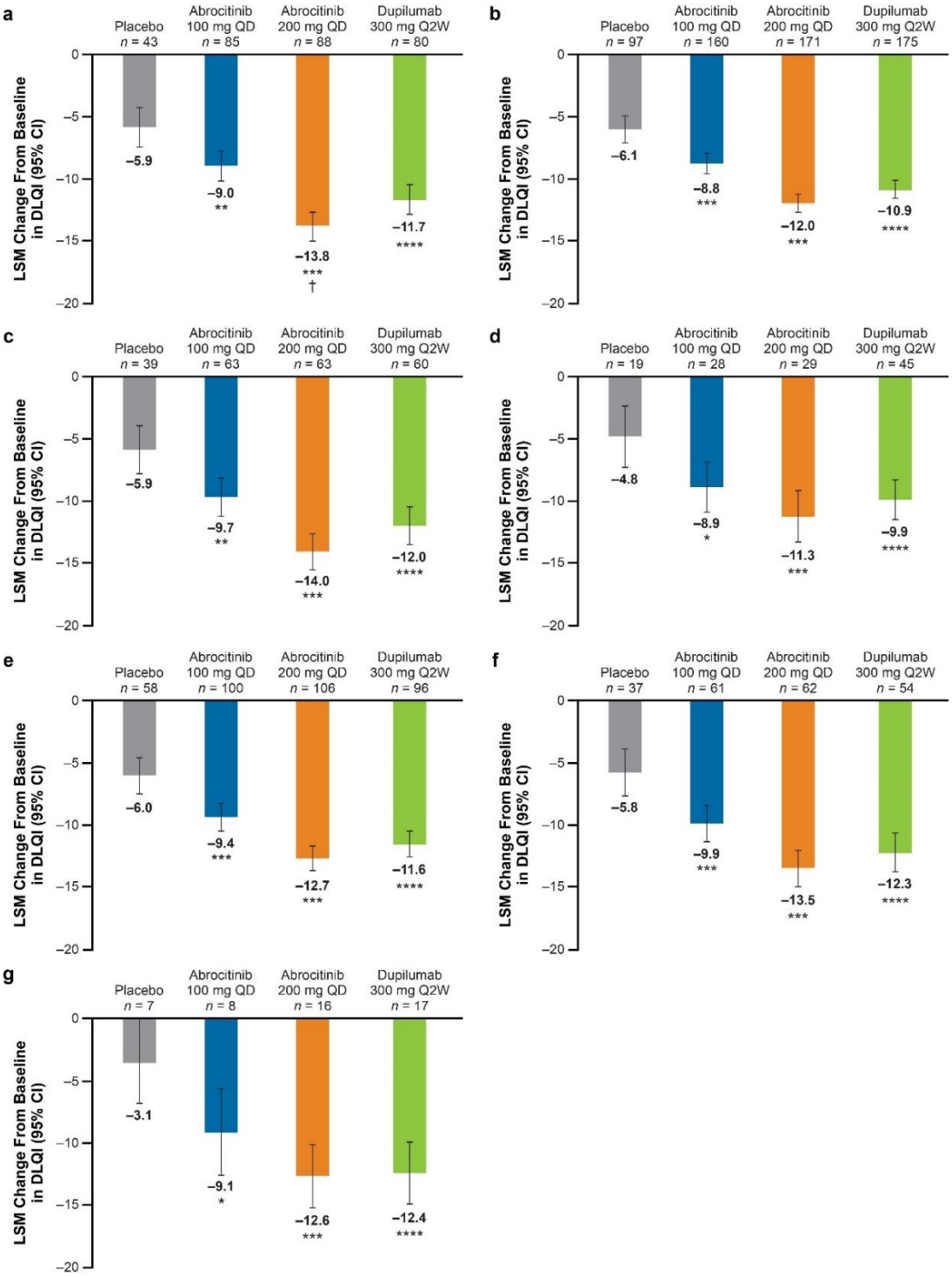
*p <0.05, **p <0.01, and ***p <0.001 for abrocitinib versus placebo. ****Significant difference between dupilumab versus placebo based on 95% CIs for the LSM difference. [†]Significant difference between abrocitinib versus dupilumab based on 95% CIs for the LSM difference. [a]Excluding patients who took only corticosteroids. [b]The combined subgroup was defined as patients with baseline IGA= 4, and EASI > 21, and %BSA > 50 and failure or intolerance to prior systemic agents (excluding patients who took only corticosteroids). *%BSA* percentage of body surface area, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *LSM* least squares mean, *PP-NRS* Peak Pruritus Numerical Rating Scale, *QD* once daily, *Q2W* once every 2 weeks

Supplementary Figure 3 LSM change from baseline in POEM at week 16 in patients with baseline **a** IGA= 4, **b** EASI > 21, **c** EASI > 38, **d** failure or intolerance to prior systemic agents,[a] **e** %BSA > 50, **f** %BSA > 65 and **g** in the combined subgroup[b]



*$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$ for abrocitinib versus placebo. ****Significant difference between dupilumab versus placebo based on 95% CIs for the LSM difference. [†]Significant difference between abrocitinib versus dupilumab based on 95% CIs for the LSM difference. [a]Excluding patients who took only corticosteroids. [b]The combined subgroup was defined as patients with baseline IGA = 4, and EASI > 21, and %BSA > 50 and failure or intolerance to prior systemic agents (excluding patients who took only corticosteroids). *%BSA* percentage of body surface area, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *LSM* least squares mean, *POEM* Patient-Oriented Eczema Measure, *QD* once daily, *Q2W* once every 2 weeks

Supplementary Figure 4 LSM change from baseline in DLQI at week 16 in patients with baseline **a** IGA= 4, **b** EASI > 21, **c** EASI > 38, **d** failure or intolerance to prior systemic agents,[a] **e** %BSA > 50, **f** %BSA > 65 and **g** in the combined subgroup[b]



*$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$ for abrocitinib versus placebo. ****Significant difference between dupilumab versus placebo based on 95% CIs for the LSM difference. [†]Significant difference between abrocitinib versus dupilumab based on 95% CIs for the LSM difference. [a]Excluding patients who took only corticosteroids. [b]The combined subgroup was defined as patients with baseline IGA= 4, and EASI > 21, and %BSA > 50 and failure or intolerance to prior systemic agents (excluding patients who took only corticosteroids). *%BSA* percentage of body surface area, *DLQI* Dermatology Life Quality Index, *EASI* Eczema Area and Severity Index, *IGA* Investigator's Global Assessment, *LSM* least squares mean, *QD* once daily, *Q2W* once every 2 weeks