

SUPPLEMENTARY MATERIALS

Long-term efficacy of abrocitinib is not impacted by the baseline severity of atopic dermatitis: Post-hoc analysis of 2 randomized trials

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Contents

	Page
Figure S1. Study design of JADE COMPARE	3
Figure S2. Study design of JADE EXTEND	4
Figure S3. CONSORT flow diagram for JADE COMPARE	5
Figure S4. CONSORT flow diagram for JADE EXTEND	6
Figure S5. Responses at week 16 in patients with moderate AD at baseline.	8
Figure S6. Responses at week 16 in patients with severe AD at baseline.	9
Figure S7. Responses at week 112 in patients with moderate AD at baseline.	10
Figure S8. Responses at week 112 in patients with severe AD at baseline.	11
Figure S9. Responses at weeks 2 through 16 in patients with moderate AD at baseline	12
Figure S10. Responses at weeks 2 through 16 in patients with severe AD at baseline	14
Figure S11. Patient-reported outcomes through week 112 in patients with moderate or severe AD at baseline.	16
Table S1. Summary of baseline AD severity in JADE COMPARE and JADE EXTEND studies	17
Table S2. Proportion of patients with moderate and severe AD at baseline who achieved IGA 0/1, EASI-75, PP-NRS4, and EASI-90+PP-NRS 0/1 responses at week 16 in JADE COMPARE	21
Table S3. Proportion of patients with moderate and severe AD at baseline who achieved IGA 0/1, EASI-75, PP-NRS4, EASI-90+PP-NRS 0/1, and (C)DLQI responses at week 112 in JADE EXTEND	22
Table S4. Summary of TEAEs in JADE COMPARE and JADE EXTEND Studies by Baseline AD Severity	24
Table S5. TEAEs occurring in $\geq 5\%$ patients in any group in JADE EXTEND by baseline AD severity	27
Reference	28

Figure S1. Study design of JADE COMPARE

^aActive comparator control arm; after 600 mg SC loading dose of dupilumab. %BSA, percentage of body surface area; EASI, Eczema Area and Severity Index; IGA, Investigator's Global Assessment; PP-NRS, Peak Pruritus Numerical Rating Scale; QD, once daily; Q2W, every 2 weeks; R, randomization; SC, subcutaneous.

JADE COMPARE (NCT03720470)

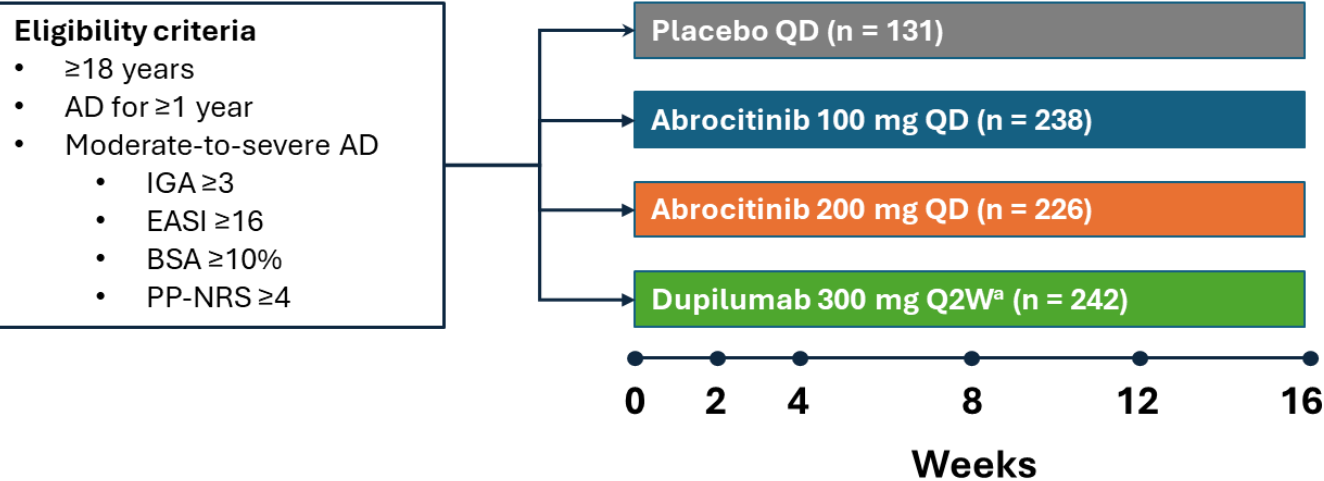


Figure S2. Study design of JADE EXTEND

Efficacy was assessed at week 112 and the data cutoff date for safety was September 5, 2022. ^aJADE EXTEND also included patients from JADE REGIMEN (NCT03627767) and the dupilumab arm from JADE COMPARE and JADE DARE; however, these patients were not included in this post-hoc analysis. ^bPatients who were previously randomly assigned to abrocitinib 100 mg or 200 mg in the qualifying trial were allocated to the same dose in JADE EXTEND, with blinding maintained; patients who had received placebo in the qualifying trial were randomly assigned to double-blind treatment with abrocitinib 100 mg or 200 mg in JADE EXTEND. ^cPatients from JADE DARE who were enrolled in JADE EXTEND received known dose of abrocitinib (200 mg) in JADE EXTEND. R, randomization.

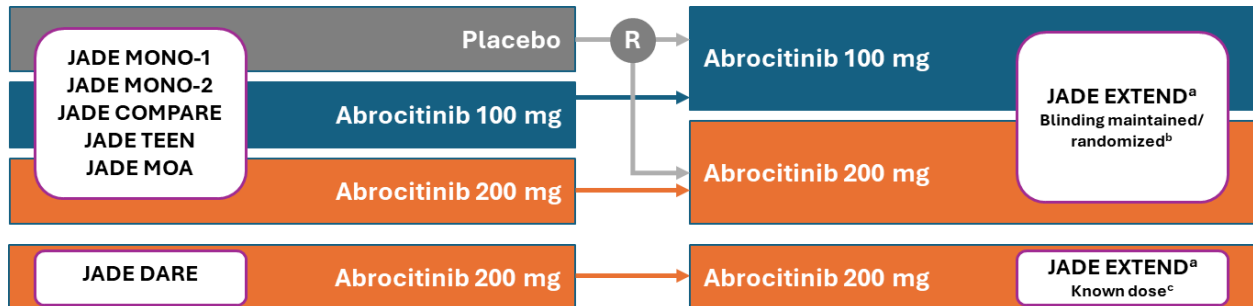


Figure S3. CONSORT flow diagram for JADE COMPARE

Flow of patients through the JADE COMPARE study. Figure reproduced with permission from Bieber et al, 2021.¹

^aOne patient randomly assigned to the dupilumab arm was not treated and was not included in the analysis sets. AE, adverse event; FAS, full analysis set; PPAS, per protocol analysis set; SAF, safety analysis set.

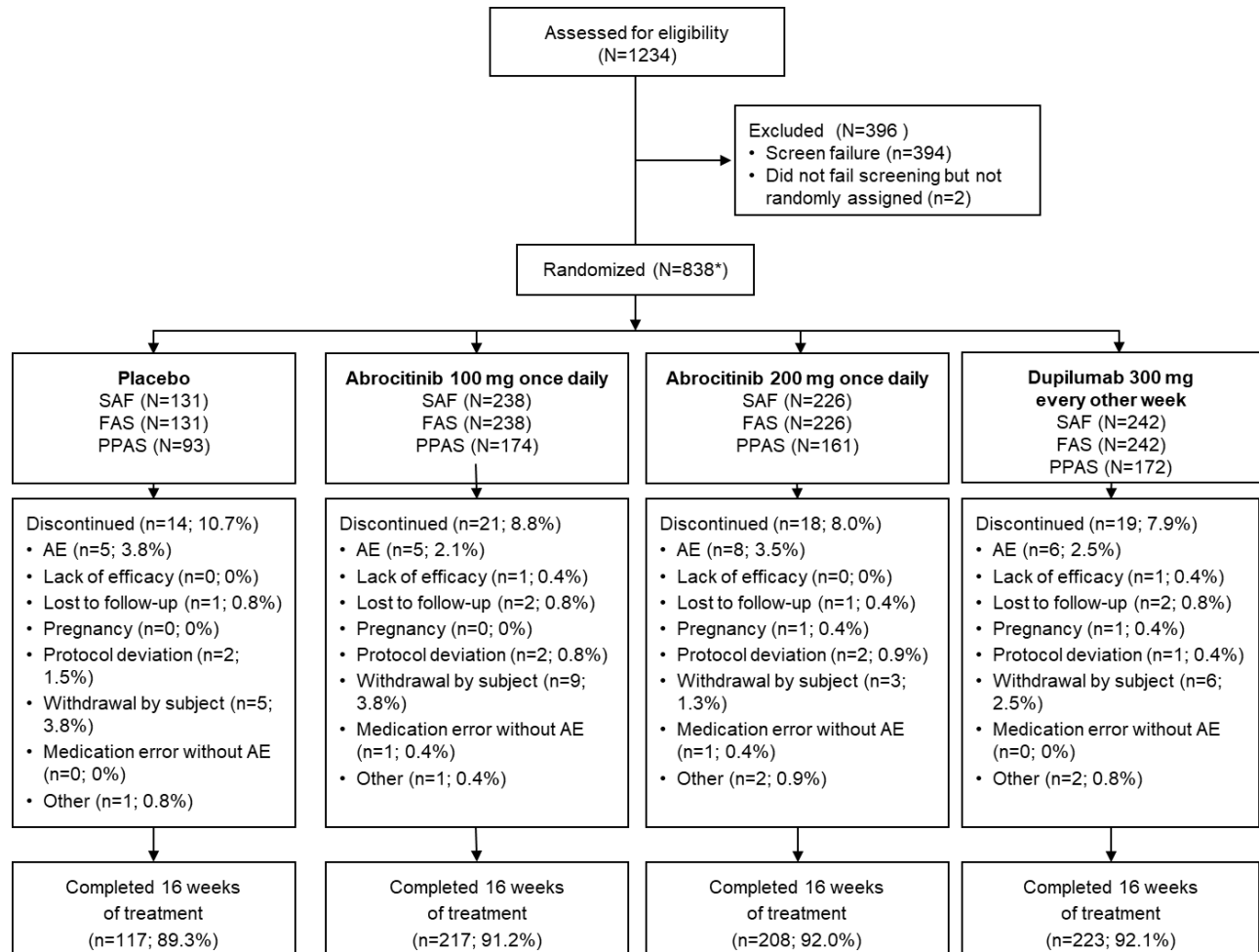
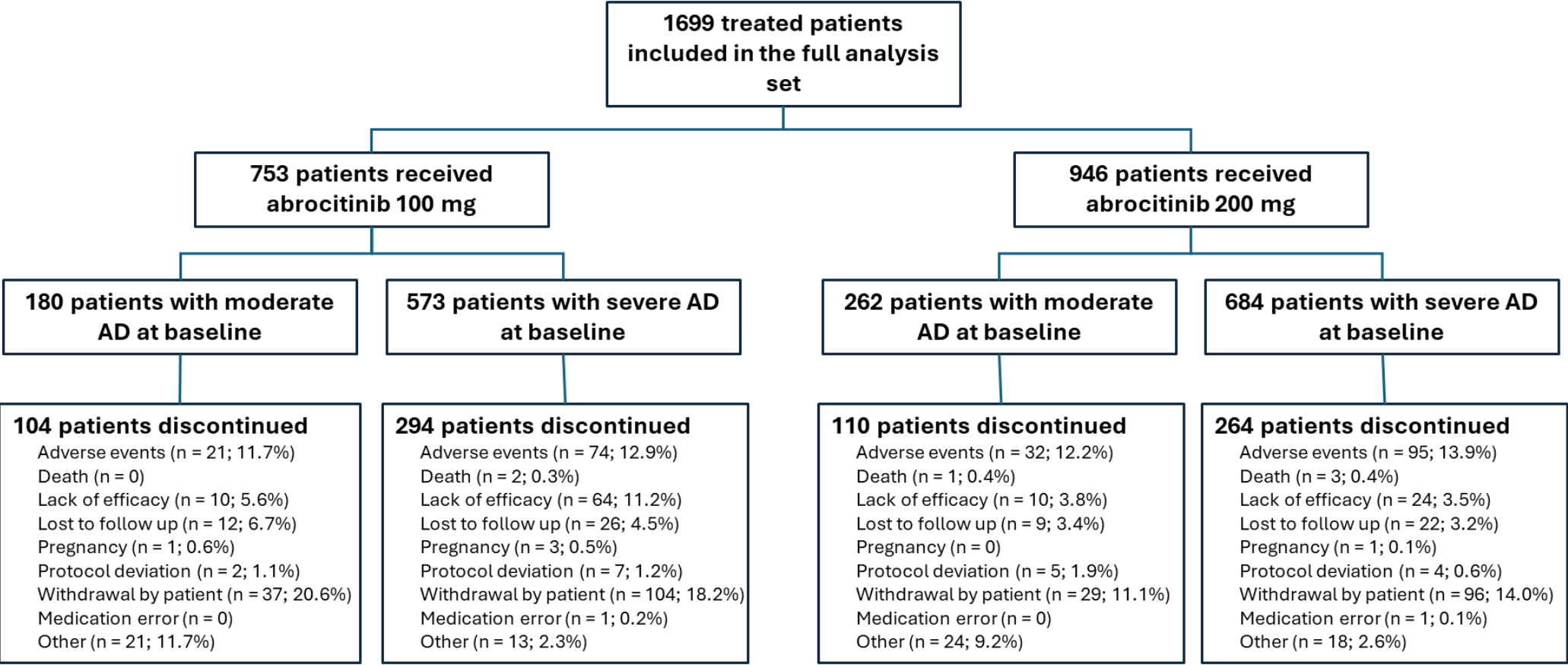


Figure S4. CONSORT flow diagram for JADE EXTEND

Flow of patients through the JADE EXTEND study by AD severity at baseline as assessed by (A) %BSA and (B) combined IGA and EASI score. Moderate AD was defined as combined IGA 3 and EASI 16–25, or BSA 10–30% at baseline. Severe AD was defined as IGA 4 and EASI >25, or BSA >30% at baseline. Data cutoff date for safety was September 5, 2022. %BSA, percentage of body surface area; AD, atopic dermatitis; EASI, Eczema Area and Severity Index; IGA, Investigator's Global Assessment.

A. Baseline severity by %BSA



B. Baseline severity by combined IGA and EASI

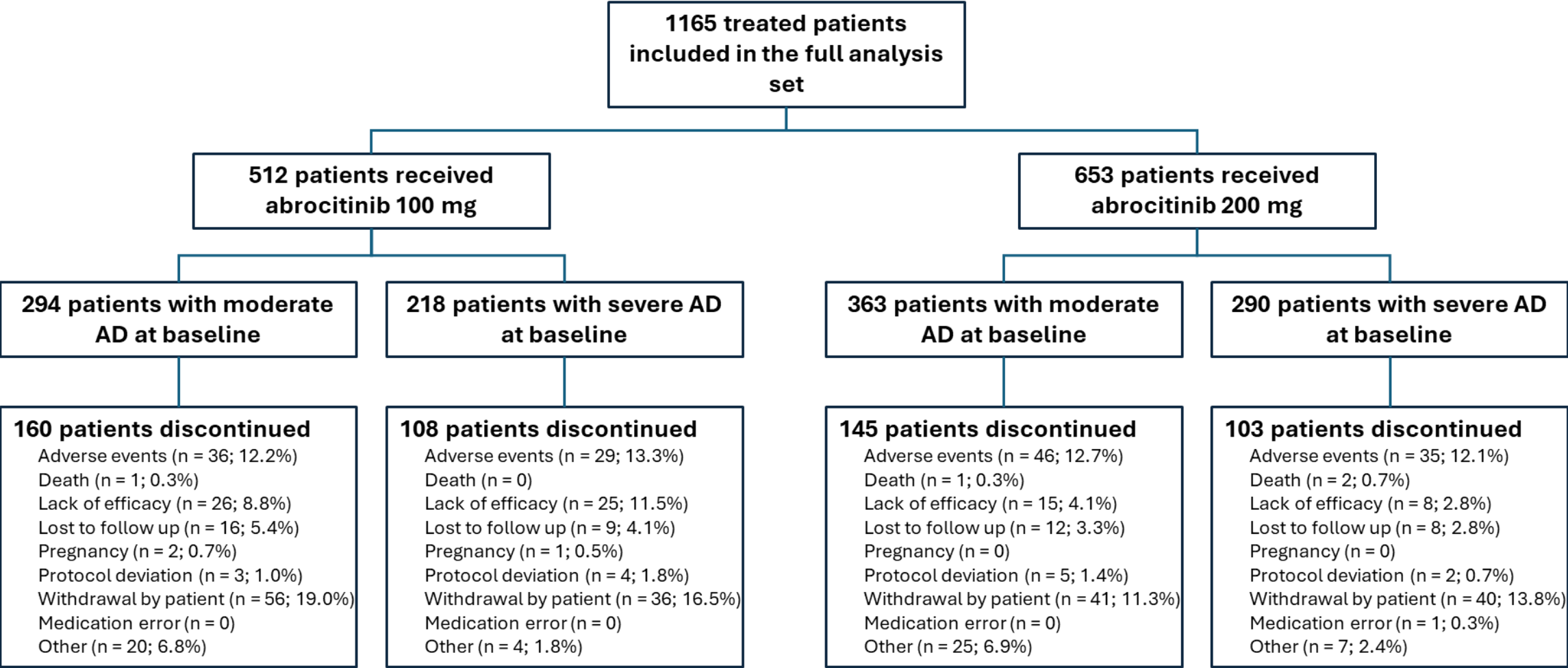


Figure S5. Responses at week 16 in patients with moderate AD at baseline.

Proportion of patients with moderate AD at baseline who achieved (A) IGA 0/1, (B) EASI-75, (C) PP-NRS4, and (D) EASI-90+PP-NRS 0/1 responses at week 16 in JADE COMPARE. Baseline disease severity was assessed by combined IGA and EASI scores, %BSA, or PtGA score. Moderate AD was defined as IGA 3 and EASI 16–25, BSA 10–30%, or PtGA 3 at baseline. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; EASI, Eczema Area and Surface Index; EASI-75, $\geq 75\%$ improvement on the EASI; EASI-90, $\geq 90\%$ improvement on the EASI; IGA, Investigator’s Global Assessment; IGA 0/1, IGA score of 0 (clear) or 1 (almost clear) with a ≥ 2 -point improvement from baseline; PP-NRS 0/1, Peak Pruritus Numerical Rating Scale score of 0 (no itch) or 1 (little itch); PP-NRS4, Peak Pruritus Numerical Rating Scale improvement of ≥ 4 points.

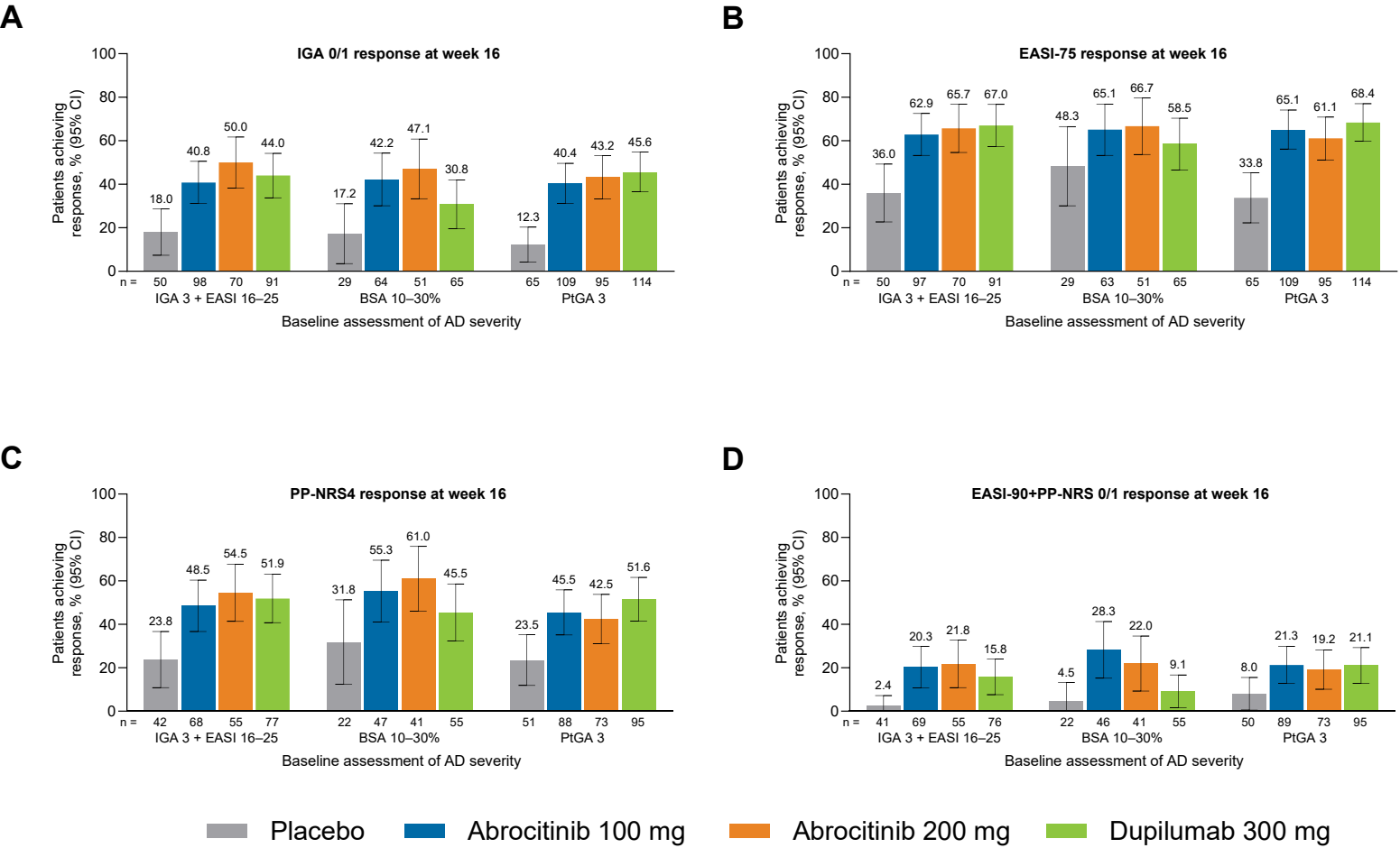


Figure S6. Responses at week 16 in patients with severe AD at baseline.

Proportion of patients with severe AD at baseline who achieved (A) IGA 0/1, (B) EASI-75, (C) PP-NRS4, and (D) EASI-90+PP-NRS 0/1 responses at week 16 in JADE COMPARE. Baseline disease severity was assessed by combined IGA and EASI scores, %BSA, or PtGA score. Severe AD was defined as IGA 4 and EASI >25, BSA >30%, or PtGA 4 at baseline. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; EASI, Eczema Area and Surface Index; EASI-75, $\geq 75\%$ improvement on the EASI; EASI-90, $\geq 90\%$ improvement on the EASI; IGA, Investigator's Global Assessment; IGA 0/1, IGA score of 0 (clear) or 1 (almost clear) with a ≥ 2 -point improvement from baseline; PP-NRS 0/1, Peak Pruritus Numerical Rating Scale score of 0 (no itch) or 1 (little itch); PP-NRS4, Peak Pruritus Numerical Rating Scale improvement of ≥ 4 points.

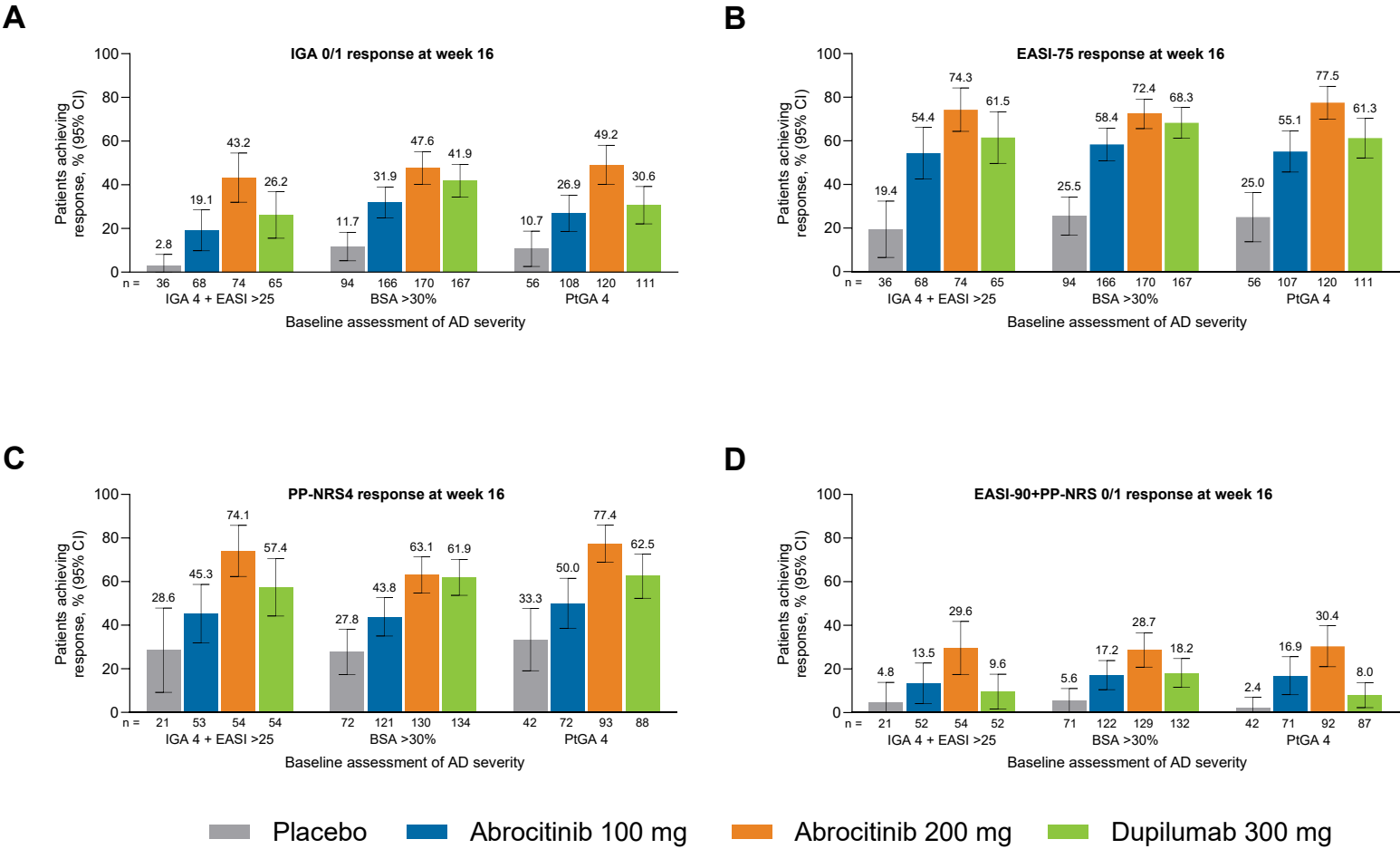


Figure S7. Responses at week 112 in patients with moderate AD at baseline.

Proportion of patients with moderate AD at baseline who achieved (A) IGA 0/1, (B) EASI-75, (C) PP-NRS4, and (D) EASI-90+PP-NRS 0/1 responses at week 112 in JADE EXTEND. Responses are shown for the overall population and the adolescent subpopulation. Baseline disease severity was assessed by combined IGA and EASI scores or %BSA. Moderate AD was defined as IGA 3 and EASI 16–25, or BSA 10–30% at baseline. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; EASI, Eczema Area and Surface Index; EASI-75, $\geq 75\%$ improvement on the EASI; EASI-90, $\geq 90\%$ improvement on the EASI; IGA, Investigator’s Global Assessment; IGA 0/1, IGA score of 0 (clear) or 1 (almost clear) with a ≥ 2 -point improvement from baseline; PP-NRS 0/1, Peak Pruritus Numerical Rating Scale score of 0 (no itch) or 1 (little itch); PP-NRS4, Peak Pruritus Numerical Rating Scale improvement of ≥ 4 points.

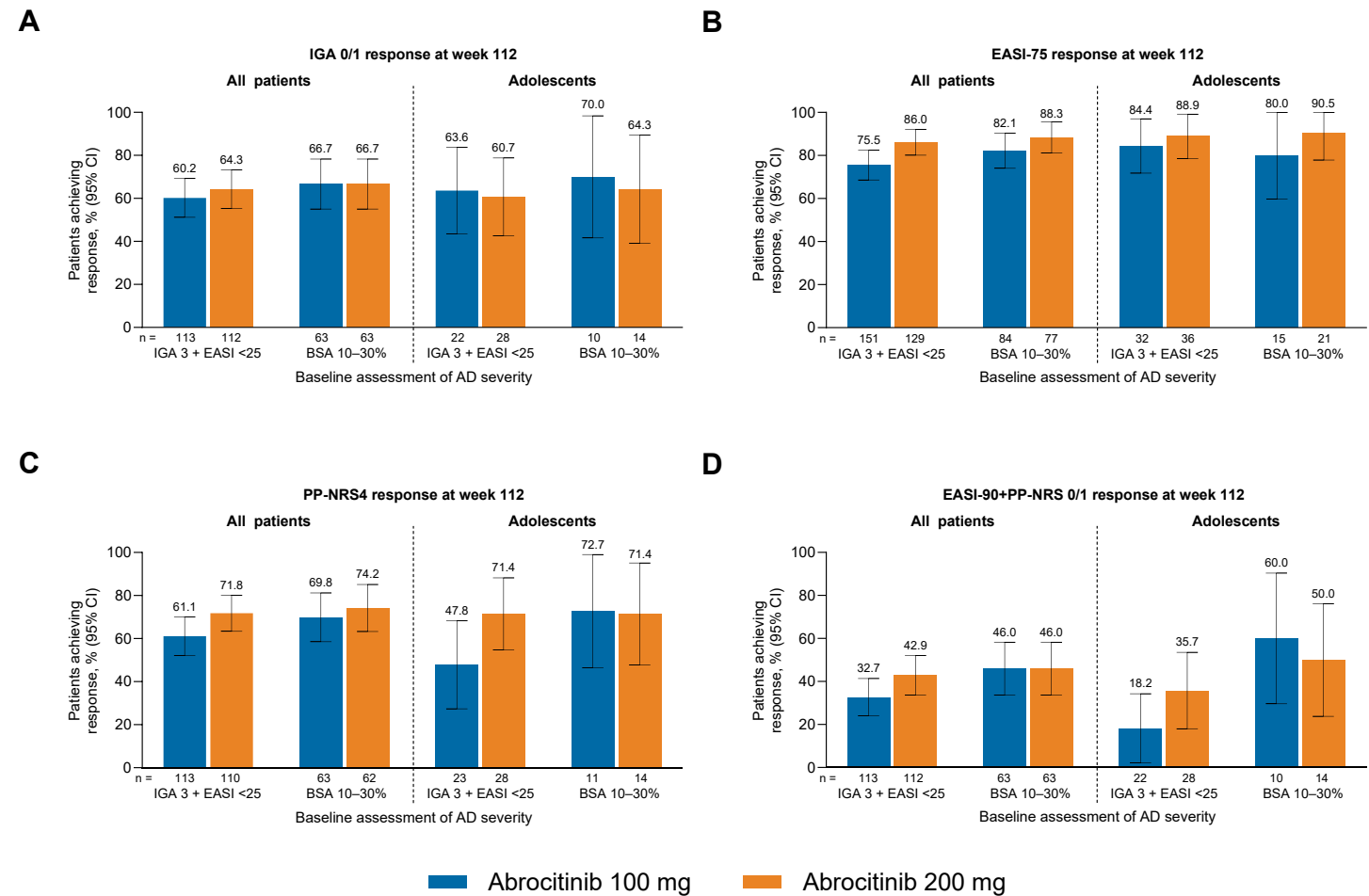


Figure S8. Responses at week 112 in patients with severe AD at baseline.

Proportion of patients with severe AD at baseline who achieved (A) IGA 0/1, (B) EASI-75, (C) PP-NRS4, and (D) EASI-90+PP-NRS 0/1 responses at week 112 in JADE EXTEND. Responses are shown for the overall population and the adolescent subpopulation. Baseline disease severity was assessed by combined IGA and EASI scores or %BSA. Severe AD was defined as IGA 4 and EASI >25, or BSA >30% at baseline. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; EASI, Eczema Area and Surface Index; EASI-75, ≥75% improvement on the EASI; EASI-90, ≥90% improvement on the EASI; IGA, Investigator’s Global Assessment; IGA 0/1, IGA score of 0 (clear) or 1 (almost clear) with a ≥2-point improvement from baseline; PP-NRS 0/1, Peak Pruritus Numerical Rating Scale score of 0 (no itch) or 1 (little itch); PP-NRS4, Peak Pruritus Numerical Rating Scale improvement of ≥4 points.

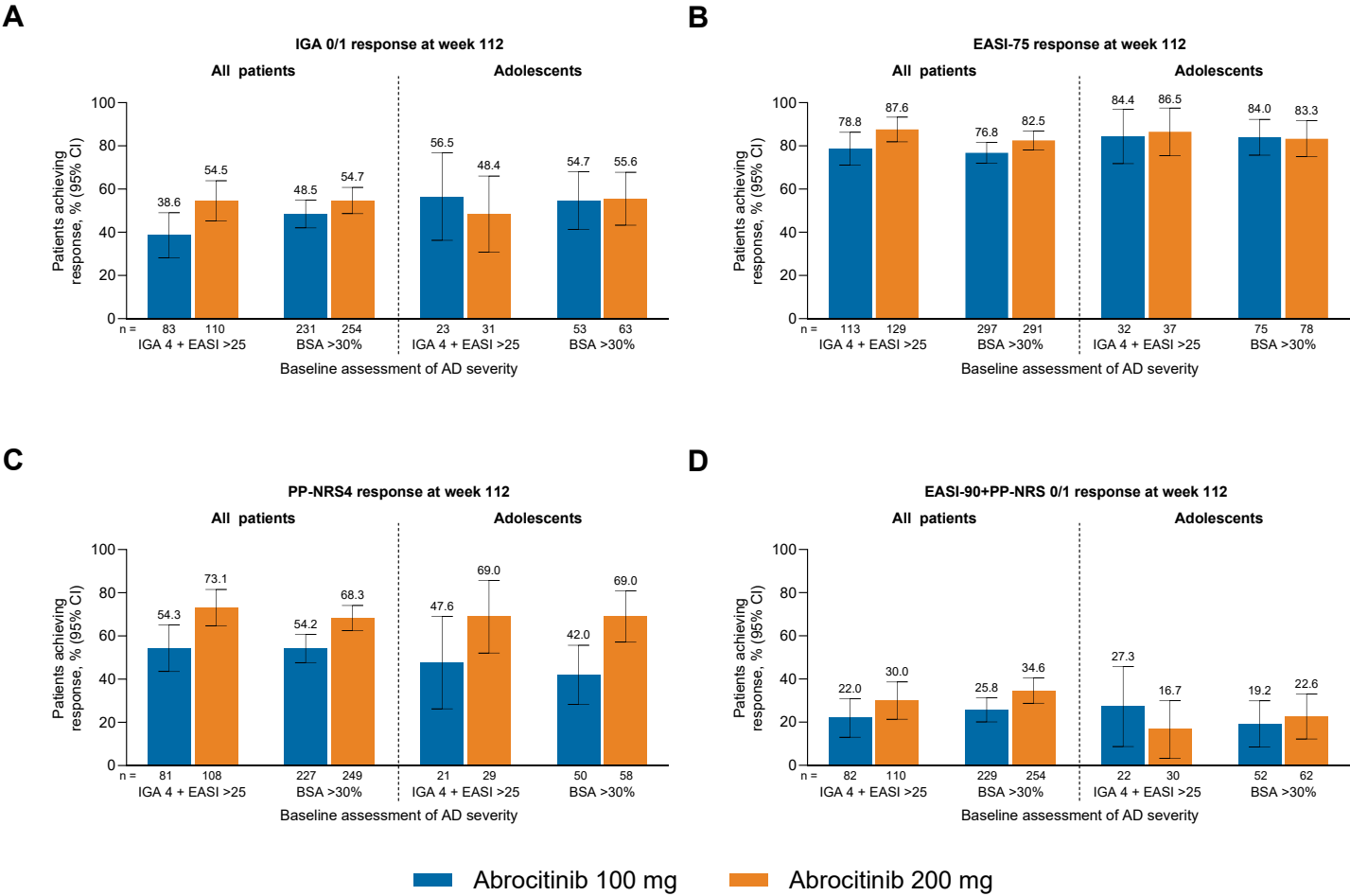
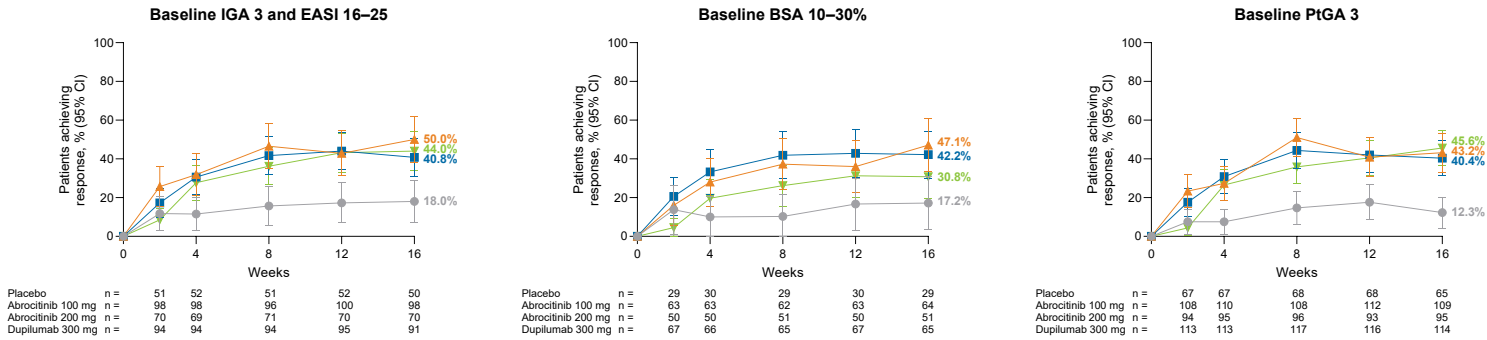


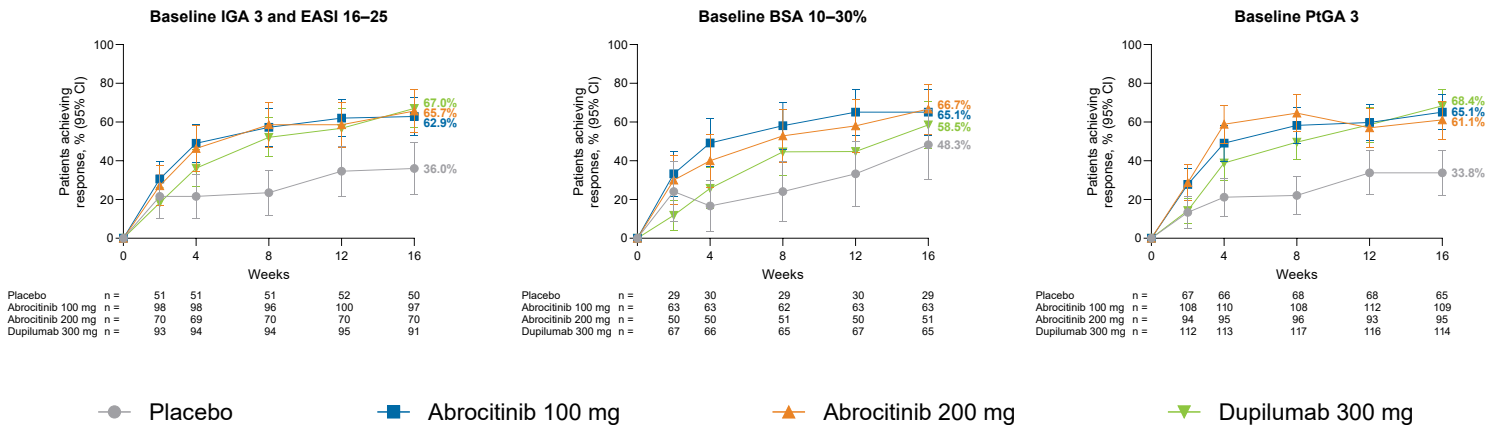
Figure S9. Responses at weeks 2 through 16 in patients with moderate AD at baseline

Proportion of patients with moderate AD at baseline who achieved (A) IGA 0/1, (B) EASI-75, (C) PP-NRS4, and (D) EASI-90+PP-NRS 0/1 responses at weeks 2 through 16 in patients from JADE COMPARE. Baseline disease severity was assessed by combined IGA and EASI scores, %BSA, or PtGA Score. Moderate AD was defined as IGA 3 and EASI 16–25, BSA 10–30%, or PtGA 3 at baseline. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; EASI, Eczema Area and Surface Index; EASI-75, ≥75% improvement on the EASI; IGA, Investigator's Global Assessment; IGA 0/1, IGA score of 0 (clear) or 1 (almost clear) with a ≥2-point improvement from baseline; PP-NRS, Peak Pruritus Numerical Rating Scale; PtGA, Patient Global Assessment; PP-NRS4, Peak Pruritus Numerical Rating Scale improvement of ≥4 points.

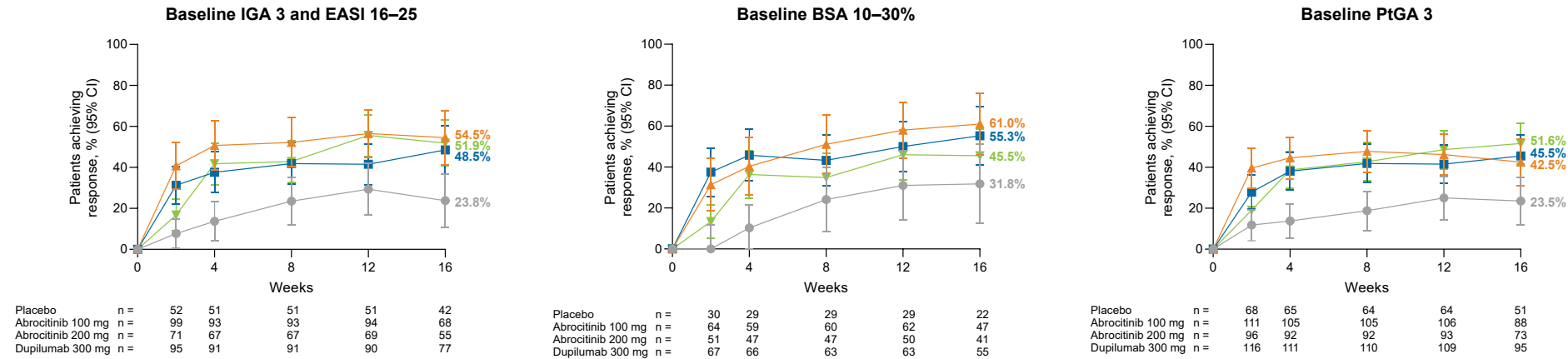
A. IGA 0/1 response



B. EASI-75 response



C. PP-NRS 4 response



D. EASI-90 + PP-NRS 0/1 response

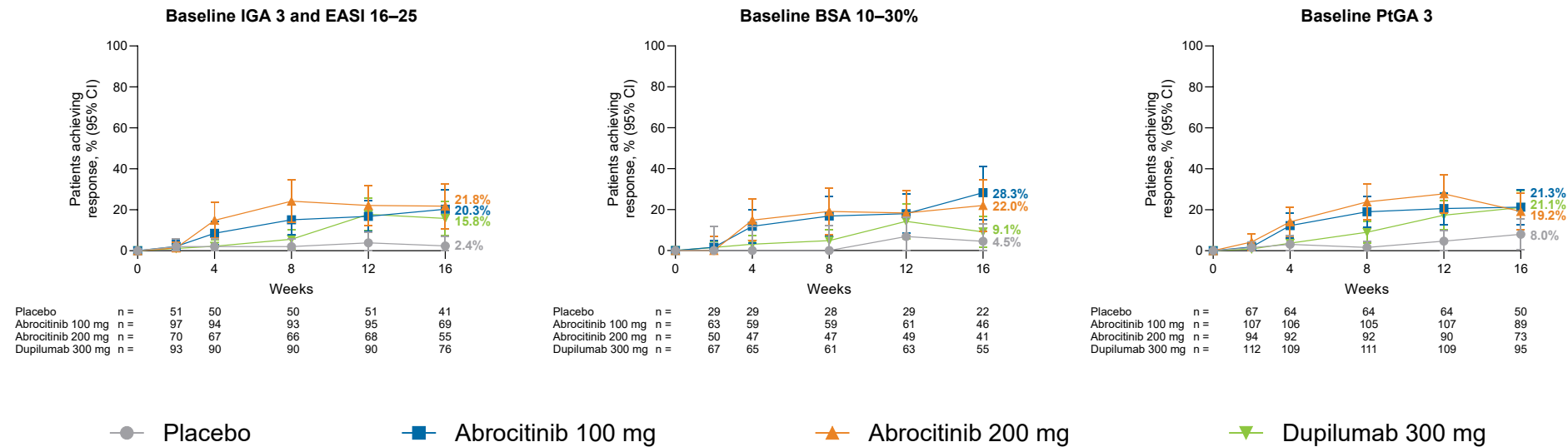
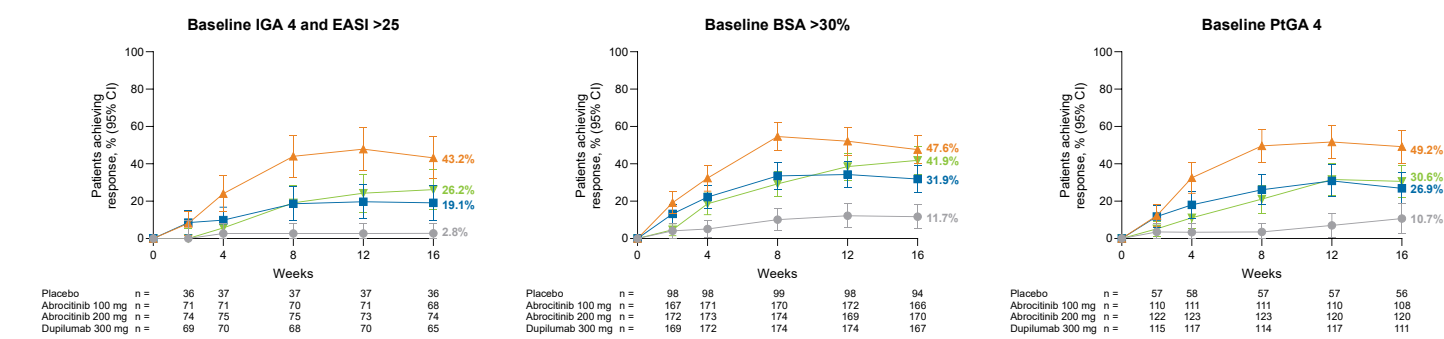


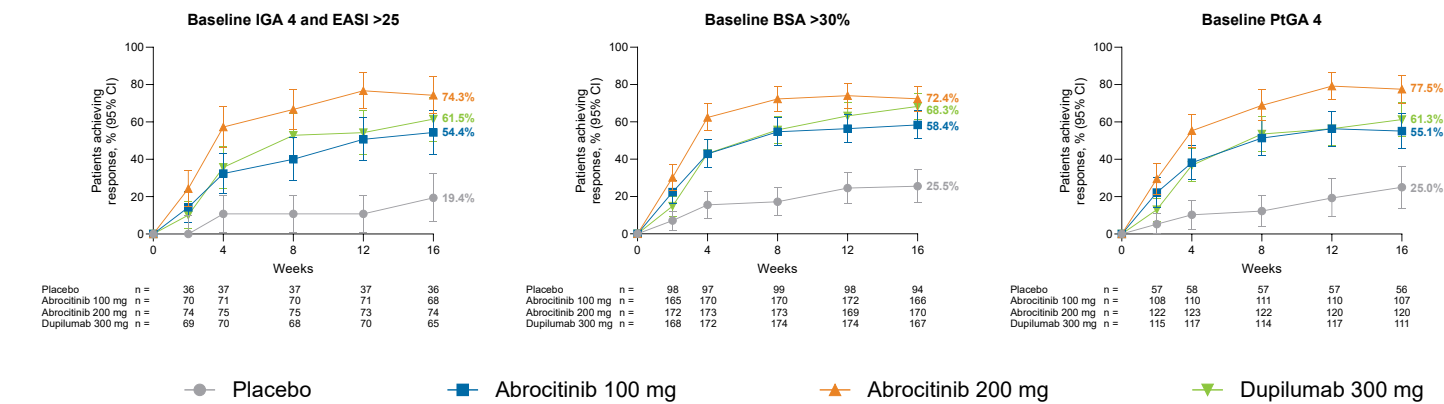
Figure S10. Responses at weeks 2 through 16 in patients with severe AD at baseline

Proportion of patients with severe AD at baseline who achieved (A) IGA 0/1, (B) EASI-75, (C) PP-NRS4, and (D) EASI-90+PP-NRS 0/1 responses at weeks 2 through 16 in patients from JADE COMPARE. Baseline disease severity was assessed by combined IGA and EASI scores, %BSA, or PtGA Score. Severe AD was defined as IGA 4 and EASI >25, or BSA >30% or PtGA 4 at baseline. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; EASI, Eczema Area and Surface Index; EASI-75, ≥75% improvement on the EASI; IGA, Investigator's Global Assessment; IGA 0/1, IGA score of 0 (clear) or 1 (almost clear) with a ≥2-point improvement from baseline; PP-NRS, Peak Pruritus Numerical Rating Scale; PtGA, Patient Global Assessment.

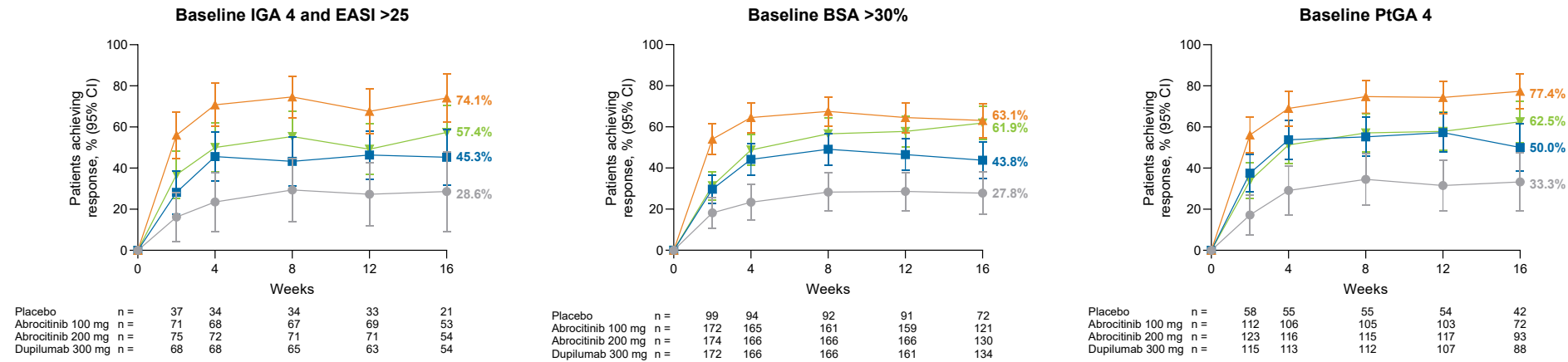
A. IGA 0/1 response



B. EASI-75 response



C. PP-NRS 4 response



D. EASI-90+PP-NRS 0/1 response

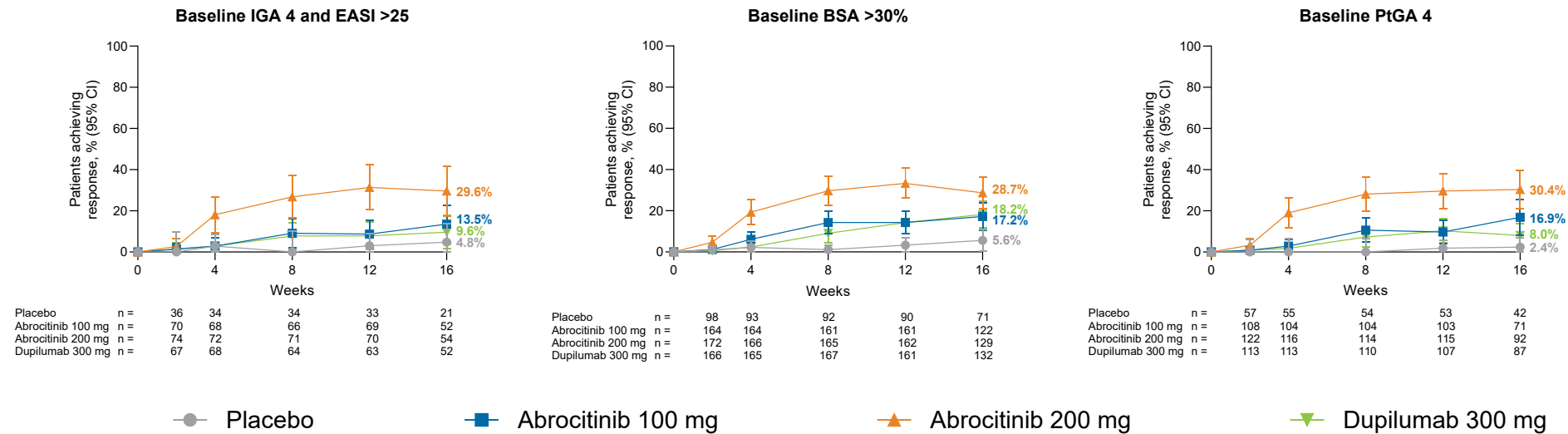
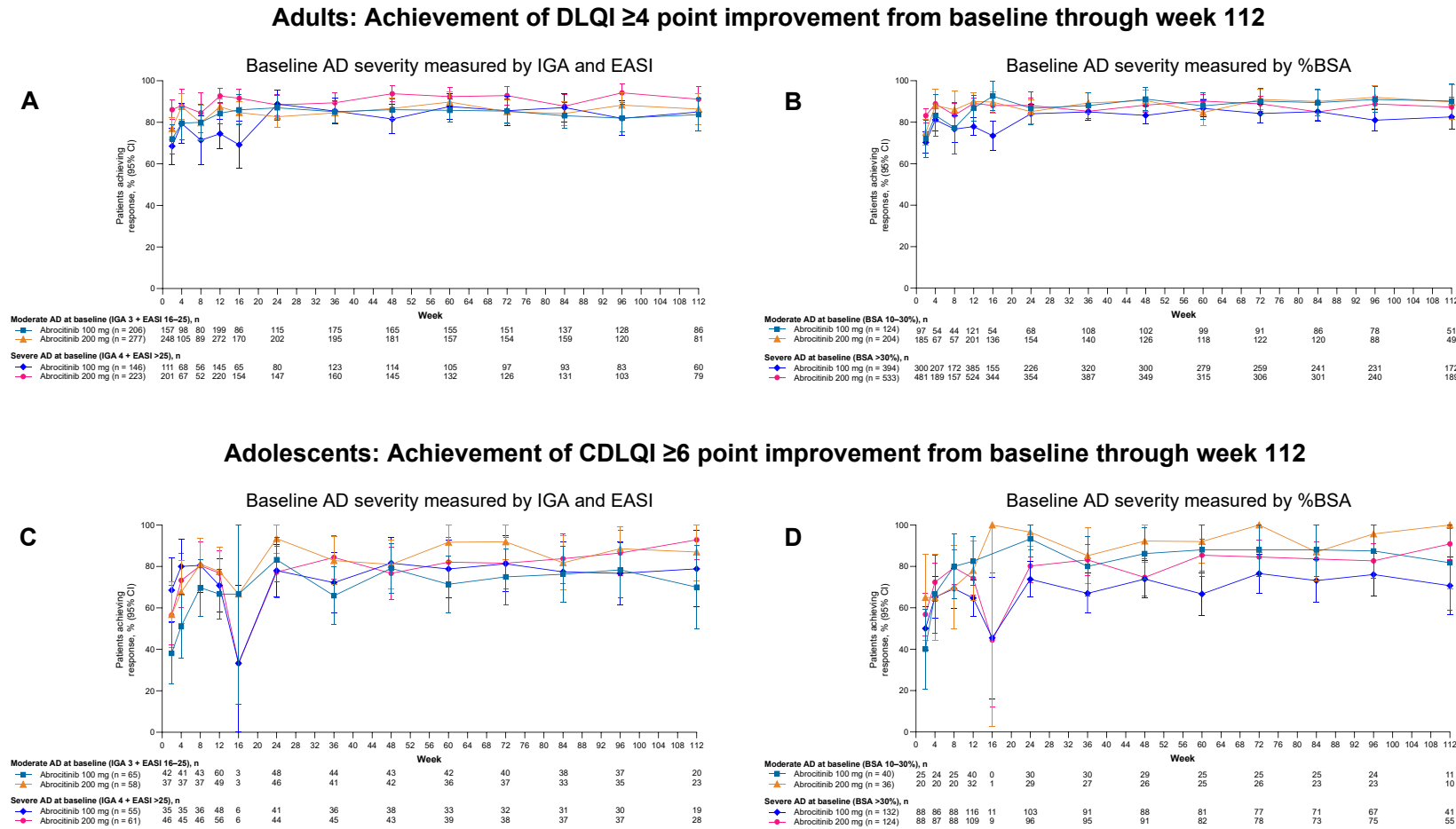


Figure S11. Patient-reported outcomes through week 112 in patients with moderate or severe AD at baseline.

Proportion of adult patients with DLQI score at baseline of at least 4 achieving an improvement of at least 4 points with baseline AD severity measured by (A) IGA + EASI or (B) %BSA. Proportion of adolescent patients with CDLQI score at baseline of at least 6 achieving an improvement of at least 6 points with baseline AD severity measured by (C) IGA + EASI or (D) %BSA. Responses are shown through week 112 in the JADE EXTEND study. Moderate AD was defined as combined IGA 3 and EASI 16–25, or BSA 10–30% at baseline. Severe AD was defined as IGA 4 and EASI >25, or BSA >30% at baseline. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; CDLQI, Children’s Dermatology Life Quality Index; DLQI, Dermatology Life Quality Index; EASI, Eczema Area and Surface Index; IGA, Investigator’s Global Assessment.



1 **Table S1. Summary of baseline AD severity in JADE COMPARE and JADE EXTEND studies**

	JADE COMPARE							
	Moderate Disease				Severe Disease			
	Placebo	Abrocitinib 100 mg	Abrocitinib 200 mg	Dupilumab 300 mg	Placebo	Abrocitinib 100 mg	Abrocitinib 200 mg	Dupilumab 300 mg
By IGA/EASI, N	53	101	71	95	37	71	75	70
%BSA, median (IQR)	30.6 (20.1, 36.0)	29.0 (19.1, 40.0)	29.1 (22.0, 41.9)	26.0 (18.8, 36.1)	75.0 (58.4, 86.5)	70.2 (52.8, 84.6)	65.9 (50.0, 83.5)	66.3 (49.4, 78.9)
EASI, median (IQR)	20.2 (18.0, 22.3)	19.0 (17.4, 21.6)	18.9 (17.0, 22.0)	19.8 (18.0, 21.8)	45.7 (35.1, 48.7)	42.8 (36.6, 53.2)	44.2 (33.9, 52.9)	39.5 (32.7, 49.8)
PP-NRS (IQR)	7.0 (5.0, 8.0)	7.0 (5.0, 8.0)	8.0 (7.0, 8.0)	7.0 (5.0, 8.0)	8.0 (7.0, 9.0)	8.0 (7.0, 9.0)	8.0 (7.0, 9.0)	8.0 (6.0, 9.0)
PtGA, n (%)								
1 (almost clear)	0 5 (9.4)	0 8 (7.9)	0 5 (7.0)	0 3 (3.2)	0 0	0 1 (1.4)	0 0	0 1 (1.4)
2 (mild)	38 (71.7)	68 (67.3)	44 (62.0)	66 (69.5)	8 (21.6)	1 (1.4)	13 (17.3)	16 (22.9)
3 (moderate)	10 (18.9)	25 (24.8)	22 (31.0)	25 (26.3)	29 (78)	14 (19.7)	62 (82.7)	53 (75.7)
4 (severe)						55 (77.5)		
By %BSA, N	30	64	51	67	100	174	174	175
IGA, n (%)								
3 (moderate)	26 (86.7)	54 (84.4)	40 (78.4)	59 (88.1)	61 (61.0)	99 (56.9)	97 (55.7)	103 (58.9)

4 (severe)	4 (13.3)	10 (156)	11 (21.6)	8 (11.9)	39 (39.0)	75 (43.1)	77 (44.3)	72 (41.1)
EASI, median (IQR)	20.1 (17.0, 22.3)	18.4 (16.9, 21.1)	18.6 (17.0, 21.9)	19.2 (17.8, 21.2)	32.9 (24.1, 44.9)	31.9 (22.8, 44.0)	33.6 (26.1, 44.2)	32.4 (24.8, 42.4)
PP-NRS (IQR)	7.0 (7.0, 8.0)	7.0 (6.0, 8.0)	8.0 (7.0, 8.0)	7.0 (6.0, 8.0)	7.0 (6.0, 8.5)	7.0 (6.0, 8.0)	8.0 (7.0, 9.0)	7.5 (6.0, 9.0)
PtGA								
1 (almost clear)	0	0	0	0	0		0	0
	3 (10.0)	3 (4.7)	1 (2.0)	1 (1.5)	2 (2.0)	1 (0.6)	5 (2.9)	6 (3.4)
2 (mild)	21 (70.0)	39 (60.9)	28 (54.9)	46 (68.7)	46 (46.0)	9 (5.2)	68 (39.1)	71 (40.6)
3 (moderate)	6 (20.0)	22 (34.4)	22 (43.1)	19 (28.4)	52 (52.0)	74 (42.5)	101 (58.0)	98 (56.0)
4 (severe)						90 (51.7)		
By PtGA, N	68	113	96	117	58	112	123	117
IGA, n (%)								
3 (moderate)	56 (82.4)	95 (84.1)	80 (83.3)	98 (83.8)	27 (46.6)	47 (42.0)	51 (41.5)	57 (48.7)
4 (severe)	12 (17.6)	18 (15.9)	16 (16.7)	19 (16.2)	31 (53.4)	65 (58.0)	72 (58.5)	60 (51.3)
%BSA, median (IQR)	36.5 (25.9, 53.1)	39.0 (24.9, 51.0)	45.5 (26.5, 58.0)	36.6 (23.0, 49.0)	59.2 (39.9, 80.0)	54.7 (36.5, 81.0)	54.1 (37.1, 76.0)	57.0 (35.0, 76.2)
EASI, median (IQR)	22.3 (19.4, 29.4)	21.4 (17.8, 28.0)	25.6 (20.1, 33.6)	23.1 (19.1, 31.0)	38.0 (27.0, 47.5)	35.1 (22.0, 46.8)	33.9 (24.3, 46.1)	32.4 (24.2, 45.2)
PP-NRS (IQR)	6.0 (5.0, 8.0)	7.0 (5.0, 8.0)	7.0 (6.0, 8.0)	7.0 (6.0, 8.0)	8.0 (7.0, 9.0)	8.0 (7.0, 9.0)	8.0 (7.0, 9.0)	8.0 (7.0, 9.0)

	JADE EXTEND							
	Moderate Disease				Severe Disease			
		Abrocitinib 100 mg	Abrocitinib 200 mg	TOTAL		Abrocitinib 100 mg	Abrocitinib 200 mg	TOTAL
By IGA/EASI, N		294	363	657		218	290	508
IGA, n (%)								
3 (moderate)		294 (100)	363 (100)	657 (100)		0	0	0
4 (severe)		0	0	0		218 (100)	290 (100)	508 (100)
%BSA, median (IQR)		32.0 (23.0, 40.0)	30.0 (22.0, 40.0)	31.0 (22.5, 40.0)		68.0 (50.8, 83.0)	65.0 (50.0, 79.9)	66.0 (50.0, 80.8)
EASI, median (IQR)		19.6 (17.5, 21.7)	19.6 (17.6, 22.0)	19.6 (17.6, 22.0)		41.2 (33.8, 51.7)	40.4 (33.6, 50.2)	40.5 (33.7, 51.2)
PP-NRS (IQR)		7.0 (6.0, 8.0)	7.0 (6.0, 8.0)	7.0 (6.0, 8.0)		8.0 (7.0, 9.0)	8.0 (7.0, 9.0)	8.0 (7.0, 9.0)
PtGA, n (%)								
0 (clear)		1 (0.3)	0	1 (0.2)		0	0	0
1 (almost clear)		3 (1.0)	1 (0.3)	4 (0.6)		0	0	3 (0.6)
2 (mild)		17 (5.8)	18 (5.0)	35 (5.3)		3 (1.4)	3 (1.0)	9 (1.8)
3 (moderate)		171 (58.2)	158 (43.5)	329 (50.1)		6 (2.8)	49 (16.9)	102 (20.1)
4 (severe)		94 (32.0)	67 (18.5)	161 (24.5)		53 (24.3)	145 (50.0)	293 (57.7)
						148 (67.9)		

By %BSA, N		180	262	442		573	684	1257
IGA, n (%)								
3 (moderate)		139 (77.2)	208 (79.4)	347 (78.5)		335 (58.5)	370 (54.1)	705 (56.1)
4 (severe)		41 (22.8)	54 (20.6)	95 (21.5)		238 (41.5)	314 (45.9)	552 (43.9)
%BSA, median (IQR)		23.0 (18.0, 27.0)	22.6 (19.0, 27.0)	22.8 (18.6, 27.0)		53.0 (40.0, 71.3)	53.0 (41.0, 70.0)	53.0 (41.0, 70.2)
EASI, median (IQR)		18.8 (17.0, 21.3)	18.5 (17.0, 21.4)	18.6 (17.0, 21.3)		29.8 (23.0, 40.5)	30.8 (23.8, 41.6)	30.6 (23.4, 41.0)
PP-NRS (IQR)		7.0 (6.0, 8.0)	7.0 (6.0, 8.0)	7.0 (6.0, 8.0)		7.0 (6.0, 8.0)	7.0 (6.0, 8.0)	7.0 (6.0, 8.0)
PtGA, n (%)								
0 (clear)		0	0	0			0	1 (<0.1)
1 (almost clear)		1 (0.6)	1 (0.4)	2 (0.5)		1 (0.2)	2 (0.3)	7 (0.6)
2 (mild)		5 (2.8)	9 (3.4)	14 (3.2)		5 (0.9)	18 (2.6)	43 (3.4)
3 (moderate)		98 (54.4)	94 (35.9)	192 (43.4)		25 (4.4)	199 (29.1)	427 (34.0)
4 (severe)		67 (37.2)	54 (20.6)	121 (27.4)		228 (39.8)	260 (38.0)	553 (44.0)
						293 (51.1)		

Moderate disease was defined as IGA 3 and EASI 16–25, BSA 10-30%, or PtGA 3 (JADE COMPARE only) at baseline. Severe disease was defined as IGA 4 and EASI >25, BSA >30%, or PtGA 4 (JADE COMPARE only) at baseline.

Abbreviations: %BSA, percentage of body surface area; AD, atopic dermatitis; EASI, Eczema Area and Surface Index; IGA, Investigator's Global Assessment; IQR, interquartile range; PP-NRS, Peak Pruritus Numerical Rating Scale; PtGA, Patient Global Assessment.

8 **Table S2. Proportion of patients with moderate and severe AD at baseline who achieved IGA 0/1, EASI-75, PP-**
9 **NRS4, and EASI-90+PP-NRS 0/1 responses at week 16 in JADE COMPARE**

Response at week 16, N/n, % (95% CI)	Moderate AD				Severe AD			
	Placebo	Abrocitinib 100 mg	Abrocitinib 200 mg	Dupilumab 300 mg	Placebo	Abrocitinib 100 mg	Abrocitinib 200 mg	Dupilumab 300 mg
IGA 0/1 response								
Baseline assessment: IGA + EASI ^a	9/50	40/98	35/70	40/91	1/36	13/68	32/74	17/65
%BSA ^b	18.0 (7.4, 28.6)	40.8 (31.1, 50.5)	50.0 (38.3, 61.7)	44.0 (33.8, 54.2)	2.8 (0.0, 8.1)	19.1 (9.8, 28.5)	43.2 (32.0, 54.5)	26.2 (15.5, 36.8)
PtGA ^c	17.2 (3.5, 31.0)	42.2 (30.1, 54.3)	47.1 (33.4, 60.8)	30.8 (19.5, 42.0)	11.7 (5.2, 18.2)	31.9 (24.8, 39.0)	47.6 (40.1, 55.2)	41.9 (34.4, 49.4)
	8/65	44/109	41/95	52/114	6/56	29/108	59/120	34/111
	12.3 (4.3, 20.3)	40.4 (31.2, 49.6)	43.2 (33.2, 53.1)	45.6 (36.5, 54.8)	10.7 (2.6, 18.8)	26.9 (18.5, 35.2)	49.2 (40.2, 58.1)	30.6 (22.1, 39.2)
EASI-75 response								
Baseline assessment: IGA + EASI ^a	18/50	61/97	46/70	61/91	7/36	37/68	55/74	40/65
%BSA ^b	36.0 (22.7, 49.3)	62.9 (53.3, 72.5)	65.7 (54.6, 76.8)	67.0 (57.4, 76.7)	19.4 (6.5, 32.4)	54.4 (42.6, 66.2)	74.3 (64.4, 84.3)	61.5 (49.7, 73.4)
PtGA ^c	48.3 (30.1, 66.5)	65.1 (53.3, 76.9)	66.7 (53.7, 79.6)	58.5 (46.5, 70.4)	25.5 (16.7, 34.3)	58.4 (50.9, 65.9)	72.4 (65.6, 79.1)	68.3 (61.2, 75.3)
	22/65	71/109	58/95	78/114	14/56	59/107	93/120	68/111
	33.8 (22.3, 45.3)	65.1 (56.2, 74.1)	61.1 (51.2, 70.9)	68.4 (59.9, 77.0)	25.0 (13.7, 36.3)	55.1 (45.7, 64.6)	77.5 (70.0, 85.0)	61.3 (52.2, 70.3)
PP-NRS 4 response								
Baseline assessment: IGA + EASI ^a	10/42	33/68	30/55	40/77	6/21	24/53	40/54	31/54
%BSA ^b	23.8 (10.9, 36.7)	48.5 (36.7, 60.4)	54.5 (41.4, 67.7)	51.9 (40.8, 63.1)	28.6 (9.2, 47.9)	45.3 (31.9, 58.7)	74.1 (62.4, 85.8)	57.4 (44.2, 70.6)
PtGA ^c	31.8 (12.4, 51.3)	55.3 (41.1, 69.5)	61.0 (46.0, 75.9)	45.5 (32.3, 58.6)	27.8 (17.4, 38.1)	43.8 (35.0, 52.6)	63.1 (54.8, 71.4)	61.9 (53.7, 70.2)
	12/51	40/88	31/73	49/95	14/42	36/72	72/93	55/88
	23.5 (11.9, 35.2)	45.5 (35.1, 55.9)	42.5 (31.1, 53.8)	51.6 (41.5, 61.6)	33.3 (19.1, 47.6)	50.0 (38.5, 61.5)	77.4 (68.9, 85.9)	62.5 (52.4, 72.6)
EASI-90 + PP-NRS 0/1 response								
Baseline assessment: IGA + EASI ^a	1/41	14/69	12/55	12/76	1/21	7/52	16/54	5/52
%BSA ^b	2.4 (0.0, 7.2)	20.3 (10.8, 29.8)	21.8 (10.9, 32.7)	15.8 (7.6, 24.0)	4.8 (0.0, 13.9)	13.5 (4.2, 22.7)	29.6 (17.5, 41.8)	9.6 (1.6, 17.6)
PtGA ^c	4.5 (0.0, 13.2)	28.3 (15.2, 41.3)	22.0 (9.3, 34.6)	9.1 (1.5, 16.7)	5.6 (0.3, 11.0)	17.2 (10.5, 23.9)	28.7 (20.9, 36.5)	18.2 (11.6, 24.8)
	4/50	19/89	14/73	20/95	1/42	12/71	28/92	7/87
	8.0 (0.5, 15.5)	21.3 (12.8, 29.9)	19.2 (10.1, 28.2)	21.1 (12.9, 29.3)	2.4 (0.0, 7.0)	16.9 (8.2, 25.6)	30.4 (21.0, 39.8)	8.0 (2.3, 13.8)

^aModerate AD was defined as IGA 3 and EASI 16–25 and severe AD was defined as IGA 4 and EASI >25. ^bModerate AD was defined as BSA 10–30% and severe AD was defined as BSA >30%. ^cModerate AD was defined as PtGA 3 and severe AD was defined as PtGA 4. %BSA, percentage of body surface area; AD, atopic dermatitis; CI, confidence interval; EASI, Eczema Area and Surface Index; EASI-75, ≥75% improvement on the EASI scale; EASI-90, ≥90% improvement on the EASI scale; IGA, Investigator's Global Assessment; IGA 0/1, IGA score of 0 (clear) or 1 (almost clear) with a ≥2-point improvement from baseline; PP-NRS 0/1, Peak Pruritus Numerical Rating Scale score of 0 (no itch) or 1 (little itch); PP-NRS4, Peak Pruritus Numerical Rating Scale improvement of ≥4 points; PtGA, Patient Global Assessment.

16 **Table S3. Proportion of patients with moderate and severe AD at baseline who achieved IGA 0/1, EASI-75, PP-**
17 **NRS4, EASI-90+PP-NRS 0/1, and (C)DLQI responses at week 112 in JADE EXTEND**

Response at week 112, N/n, % (95% CI)	Moderate AD				Severe AD			
	All patents		Adolescent patients		All patients		Adolescent patients	
	Abrocitinib 100 mg	Abrocitinib 200 mg	Abrocitinib 100 mg	Abrocitinib 200 mg	Abrocitinib 100 mg	Abrocitinib 200 mg	Abrocitinib 100 mg	Abrocitinib 200 mg
IGA 0/1 response Baseline assessment: IGA + EASI ^a %BSA ^b	68/113 60.2 (51.2, 69.2) 42/63 66.7 (55.0, 78.3)	72/112 64.3 (55.4, 73.2) 42/63 66.7 (55.0, 78.3)	14/22 63.6 (43.5, 83.7) 7/10 70.0 (41.6, 98.4)	17/28 60.7 (42.6, 78.8) 9/14 64.3 (39.2, 89.4)	32/83 38.6 (28.1, 49.0) 112/231 48.5 (42.0, 54.9)	60/110 54.5 (45.2, 63.9) 139/254 54.7 (48.6, 60.8)	13/23 56.5 (36.3, 76.8) 29/53 54.7 (41.3, 68.1)	15/31 48.4 (30.8, 66.0) 35/63 55.6 (43.3, 67.8)
EASI-75 response Baseline assessment: IGA + EASI ^a %BSA ^b	114/151 75.5 (68.6, 82.4) 69/84 82.1 (74.0, 90.3)	111/129 86.0 (80.1, 92.0) 68/77 88.3 (81.1, 95.5)	27/32 84.4 (71.8, 97.0) 12/15 80.0 (59.8, 100.0)	32/36 88.9 (78.6, 99.2) 19/21 90.5 (77.9, 100.0)	89/113 78.8 (71.2, 86.3) 228/297 76.8 (72.0, 81.6)	113/129 87.6 (81.9, 93.3) 240/291 82.5 (78.1, 86.8)	27/32 84.4 (71.8, 97.0) 63/75 84.0 (75.7, 92.3)	32/37 86.5 (75.5, 97.5) 65/78 83.3 (75.1, 91.6)
PP-NRS 4 response Baseline assessment: IGA + EASI ^a %BSA ^b	69/113 61.1 (52.1, 70.1) 44/63 69.8 (58.5, 81.2)	79/110 71.8 (63.4, 80.2) 46/62 74.2 (63.3, 85.1)	11/23 47.8 (27.4, 68.2) 8/11 72.7 (46.4, 99.0)	20/28 71.4 (54.7, 88.2) 10/14 71.4 (47.8, 95.1)	44/81 54.3 (43.5, 65.2) 123/227 54.2 (47.7, 60.7)	79/108 73.1 (64.8, 81.5) 170/249 68.3 (62.5, 74.1)	10/21 47.6 (26.3, 69.0) 21/50 42.0 (28.3, 55.7)	20/29 69.0 (52.1, 85.8) 40/58 69.0 (57.1, 80.9)
EASI-90 + PP-NRS 0/1 response Baseline assessment: IGA + EASI ^a %BSA ^b	37/113 32.7 (24.1, 41.4) 29/63 46.0 (33.7, 58.3)	48/112 42.9 (33.7, 52.0) 29/63 46.0 (33.7, 58.3)	4/22 18.2 (2.1, 34.3) 6/10 60.0 (29.6, 90.4)	10/28 35.7 (18.0, 53.5) 7/14 50.0 (23.8, 76.2)	18/82 22.0 (13.0, 30.9) 59/229 25.8 (20.1, 31.4)	33/110 30.0 (21.4, 38.6) 88/254 34.6 (28.8, 40.5)	6/22 27.3 (8.7, 45.9) 10/52 19.2 (8.5, 29.9)	5/30 16.7 (3.3, 30.0) 14/62 22.6 (12.2, 33.0)
DLQI response Baseline assessment: IGA + EASI ^a %BSA ^b	72/86 83.7 (75.9, 91.5) 46/51 90.2 (82.0, 98.4)	70/81 86.4 (79.0, 93.9) 44/49 89.8 (81.3, 98.3)			51/60 85.0 (76.0, 94.0) 142/172 82.6 (76.9, 88.2)	72/79 91.1 (84.9, 97.4) 165/189 87.3 (82.6, 92.0)		
CDLQI response Baseline assessment: IGA + EASI ^a %BSA ^b			14/20 70.0 (49.9, 90.1) 9/11 81.8 (59.0, 100.0)	20/23 87.0 (73.2, 100.0) 10/10 100.0 (69.2, 100.0)			15/19 78.9 (60.6, 97.3) 29/41 70.7 (56.8, 84.7)	26/28 92.9 (83.3, 100.0) 50/55 90.9 (83.3, 98.5)

18 ^aModerate AD was defined as IGA 3 and EASI 16–25 and severe AD was defined as IGA 4 and EASI >25. ^bModerate AD was defined as BSA 10–
19 30% and severe AD was defined as BSA >30%. %BSA, percentage of body surface area; AD, atopic dermatitis; CDLQI, Children's Dermatology
20 Life Quality Index; CI, confidence interval; DLQI, Dermatology Life Quality Index; EASI, Eczema Area and Surface Index; EASI-75, ≥75%
21 improvement on the EASI scale; EASI-90, ≥90% improvement on the EASI scale; IGA, Investigator's Global Assessment; IGA 0/1, IGA score of 0

22 (clear) or 1 (almost clear) with a ≥ 2 -point improvement from baseline; PP-NRS 0/1, Peak Pruritus Numerical Rating Scale score of 0 (no itch) or 1
23 (little itch); PP-NRS4, Peak Pruritus Numerical Rating Scale improvement of ≥ 4 points.

24

Table S4. Summary of TEAEs in JADE COMPARE and JADE EXTEND studies by baseline AD severity

	JADE COMPARE							
	Week 16							
	Moderate Disease				Severe Disease			
	Placebo	Abrocitinib 100 mg	Abrocitinib 200 mg	Dupilumab 300 mg	Placebo	Abrocitinib 100 mg	Abrocitinib 200 mg	Dupilumab 300 mg
By IGA/EASI, n	53	101	71	95	37	71	75	70
Patients with ≥ 1 TEAEs, n (%)	27 (50.9)	51 (50.5)	40 (56.3)	45 (47.4)	18 (48.6)	39 (54.9)	49 (65.3)	32 (45.7)
Serious TEAEs, n (%)	2 (3.8)	3 (3.0)	1 (1.4)	0	0	2 (2.8)	0	1 (1.4)
Severe TEAEs, n (%)	2 (3.8)	3 (3.0)	1 (1.4)	1 (1.1)	0	1 (1.4)	2 (2.7)	1 (1.4)
Discontinuations due to TEAEs, n (%)	3 (5.7)	5 (5.0)	4 (5.6)	4 (4.2)	0	1 (1.4)	3 (4.0)	1 (1.4)
By %BSA, n	30	64	51	67	100	174	174	175
Patients with ≥ 1 TEAEs, n (%)	14 (46.7)	26 (40.6)	23 (45.1)	32 (47.8)	56 (56.0)	95 (54.6)	116 (66.7)	89 (50.9)
Serious TEAEs, n (%)	0	1 (1.6)	1 (2.0)	0	5 (5.0)	5 (2.9)	1 (0.6)	2 (1.1)
Severe TEAEs, n (%)	0	2 (3.1)	1 (2.0)	0	3 (3.0)	3 (1.7)	3 (1.7)	2 (1.1)
Discontinuations due to TEAEs, n (%)	2 (6.7)	3 (4.7)	2 (3.9)	3 (4.5)	3 (3.0)	3 (1.7)	8 (4.6)	5 (2.9)

By PtGA, n	68	113	96	117	58	112	123	117
Patients with ≥1 TEAEs, n (%)	34 (50.0)	47 (41.6)	55 (57.3)	52 (44.4)	32 (55.2)	66 (58.9)	81 (65.9)	64 (54.7)
Serious TEAEs, n (%)	3 (4.4)	4 (3.5)	2 (2.1)	0	2 (3.4)	2 (1.8)	0	2 (1.7)
Severe TEAEs, n (%)	3 (4.4)	3 (2.7)	2 (2.1)	0	0	2 (1.8)	2 (1.6)	1 (0.9)
Discontinuations due to TEAEs, n (%)	4 (5.9)	4 (3.5)	8 (8.3)	3 (2.6)	1 (1.7)	1 (0.9)	2 (1.6)	4 (3.4)
	JADE EXTEND							
	By data cutoff (September 5, 2022)							
	Moderate Disease				Severe Disease			
		Abrocitinib 100 mg	Abrocitinib 200 mg	TOTAL		Abrocitinib 100 mg	Abrocitinib 200 mg	Total
By IGA/EASI, n		294	363	657		218	290	508
Patients with ≥1 TEAEs, n (%)		232 (78.9)	320 (88.2)	552 (84.0)		185 (84.9)	270 (93.1)	455 (89.6)
Serious TEAEs, n (%)		35 (11.9)	51 (14.0)	86 (13.1)		28 (12.8)	30 (10.3)	58 (11.4)
Severe TEAEs, n (%)		33 (11.2)	32 (8.8)	65 (9.9)		28 (12.8)	37 (12.8)	65 (12.8)
Discontinuations due to TEAEs, n (%)		39 (13.3)	50 (13.8)	89 (13.5)		34 (15.6)	40 (13.8)	74 (14.6)

By %BSA, n		180	262	442		573	684	1257
Patients with ≥ 1 TEAEs, n (%)		133 (73.9)	223 (85.1)	356 (80.5)		495 (86.4)	636 (93.0)	1131 (90.0)
Serious TEAEs, n (%)		19 (10.6)	36 (13.7)	55 (12.4)		73 (12.7)	90 (13.2)	163 (13.0)
Severe TEAEs, n (%)		23 (12.8)	21 (8.0)	44 (10.0)		63 (11.0)	78 (11.4)	141 (11.2)
Discontinuations due to TEAEs, n (%)		23 (12.8)	34 (13.0)	57 (12.9)		82 (14.3)	106 (15.5)	188 (15.0)

Moderate disease was defined as IGA 3 and EASI 16–25, BSA 10–30%, or PtGA 3 (JADE COMPARE only) at baseline. Severe disease was defined as IGA 4 and EASI >25, BSA >30%, or PtGA 4 (JADE COMPARE only) at baseline.

Abbreviations: %BSA, percentage of body surface area; AD, atopic dermatitis; IGA, EASI, Eczema Area and Surface Index; Investigator's Global Assessment; PtGA, Patient Global Assessment; TEAE, treatment-emergent adverse event.

Table S5. TEAEs occurring in ≥5% patients by data cutoff (September 5, 2022) in any group in JADE EXTEND by baseline AD severity

	JADE EXTEND			
By Baseline AD Severity By IGA/EASI	Moderate Disease		Severe Disease	
	Abrocitinib 100 mg n = 294	Abrocitinib 200 mg n = 363	Abrocitinib 100 mg n = 180	Abrocitinib 200 mg n = 262
Any TEAE	232 (78.9)	320 (88.2)	185 (84.9)	270 (93.1)
Dermatitis atopic	60 (20.4)	64 (17.6)	61 (28.0)	63 (21.7)
Nasopharyngitis	65 (22.1)	50 (13.8)	34 (15.6)	50 (17.2)
Nausea	21 (7.1)	63 (17.4)	15 (6.9)	50 (17.2)
Upper respiratory tract infection	27 (9.2)	54 (14.9)	35 (16.1)	49 (16.9)
Headache	17 (5.8)	40 (11.0)	18 (8.3)	44 (15.2)
COVID-19	40 (13.6)	53 (14.6)	27 (12.4)	41 (14.1)
Acne	24 (8.2)	54 (14.9)	14 (6.4)	35 (12.1)
Herpes zoster	13 (4.4)	37 (10.2)	16 (7.3)	25 (8.6)
Blood creatine phosphokinase increased	4 (4.8)	35 (9.6)	16 (7.3)	24 (8.3)
Herpes simplex	9 (3.1)	20 (5.5)	8 (3.7)	22 (7.6)
Oral herpes	9 (3.1)	20 (5.5)	7 (3.2)	20 (6.9)
SARS-CoV-2 test positive	19 (6.5)	28 (7.7)	9 (4.1)	19 (6.6)
Vomiting	6 (2.0)	8 (2.2)	3 (1.4)	18 (6.2)
Hemoglobin decreased	3 (1.0)	13 (3.6)	3 (1.4)	17 (5.9)
Folliculitis	20 (6.8)	24 (6.6)	10 (4.6)	16 (5.5)
Urinary tract infection	13 (4.4)	22 (6.1)	3 (1.4)	16 (5.5)
Conjunctivitis	6 (2.0)	7 (1.9)	10 (4.6)	15 (5.2)
Dizziness	4 (1.4)	8 (2.2)	3 (1.4)	15 (5.2)
Pyrexia	14 (4.8)	7 (1.9)	11 (5.0)	14 (4.8)
Diarrhea	16 (5.4)	12 (3.3)	9 (4.1)	11 (3.8)
Asthma	16 (5.4)	8 (2.2)	11 (5.0)	7 (2.4)

Moderate disease was defined as IGA 3 and EASI 16–25 at baseline. Severe disease was defined as IGA 4 and EASI >25 at baseline.

Abbreviations: AD, atopic dermatitis; COVID-19, coronavirus disease 2019; EASI, Eczema Area and Surface Index; IGA, Investigator’s Global Assessment; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; TEAE, treatment-emergent adverse event.

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