Table SI. Characteristics of included phase 2 and phase 3 trials investigating atopic dermatitis

Reference	Phase and name of clinical trial	Medication and dose	Randomized patients, *n*	Mean EASI score at beginning, range or mean ± SD	Age of patients, years, range or mean ± SD	Control group	Concurrent topical treatment allowed?	AD severity	Prior treatments/ washout
Beck et al. (14)	Phase II NCT01548404	Dupilumab 300 mg once a week (QW) through week 12	55	EASI: 28.4±1.8	33.7±1.4	Placebo	No	Moderate-to-severe AD defined as an IGA score ≥3 and a SCORAD score >20 or an EASI score >12	Washout period of 4 weeks for the topical investigational agent and 2 weeks for TCS or TCI before the baseline visit.
Simpson et al. (15)	Phase III NCT02277743	SOLO 1: Dupilumab 300 mg QW through week 16	223	EASI: 29.8 (22.0–41.2)	39.0 (27.0–51.0)	Placebo	No	Moderate-to-severe AD defined as an IGA score >3	Washout period 35-days: systemic therapy.
		SOLO 1: Dupilumab 300 mg once every other week (Q2W) through week 16	224	EASI: 30.4 (21.5–40.8)	38.0 (27.5–48.0)				
		SOLO 2: Dupilumab 300 mg QW through week 16	239	EASI: 29.0 (21.2–41.8)	35.0 (25.0–46.0)				
		SOLO 2: Dupilumab 300 mg Q2W through week 16	233	EASI: 28.6 (21.0–40.1)	34.0 (25.0–46.0)				
Thaçi et al. (16)	Phase IIb NCT01859988	Dupilumab 300 mg QW through week 16.	63	EASI: 30.1± 11.2	36.2±10.7	Placebo	No	Moderate-to-severe AD defined as an EASI score >16 at baseline and an IGA score ≥3	Washout period of 1 week for topical therapy And 4 weeks for systemic immunosuppressive or immunomodulating therapy.
		Dupilumab 300 mg Q2W through week 16	64	EASI: 33.8±14.5	39.4±12.1				
		Dupilumab, 200 mg Q2W through week 16	61	EASI: 32.9±15.5	35.8±14.9				
		Dupilumab 300 mg Q4W through week 16	65	EASI: 29.4±11.5	36.8±10.8				
		Dupilumab 100 mg Q4W through week 16	65	EASI: 32.2±13.5	36.6±11.6				
Blauvelt et al. (17)	Phase III NCT02260986	Dupilumab 300 mg QW through week 16	319	EASI: 29.0(21.6–40.7)	34.0(26.0–45.0)	Placebo	Yes	Moderate-to-severe AD defined as an IGA score >3 and an EASI score >16	Washout period 6 months: systemic therapy. Patients received concomitant TCS during the study.
		Dupilumab 300 mg Q2W through week 16	106	EASI: 30.9(22.3–41.6)	40.5(28.0–49.0)				
Tsianakas et al. (18)	Phase IIa NCT01548404	Dupilumab 300 mg QW through week 12	32	EASI: 26.4±2.4	37.3±1.8	Placebo	No	Moderate-to-severe AD defined as an IGA score of 3 or 4 and an EASI score >16	Not given.
Weller et al. (19)	Phase III NCT02755649	Dupilumab 300 mg Q2W through week 16	107	EASI: 31.6 (25.2–39.2)	38.0 (25.0–47.0)	Placebo	Yes	Moderate-to-severe AD defined as an EASI score ≥20 and an IGA score ≥3	Washout period of 4 weeks for systemic ciclosporin or phototherapy and azathioprine, methotrexate, mycophenolate mofetil or Janus kinase for 8 weeks.
		Dupilumab 300 mg QW through week 16	110	31.1 (24.5–39.0)	38.0 (29.0–48.0)				
Blauvelt et al. (20)	Phase II NCT02210780	Dupilumab 300 mg once a week (QW) plus single tetanus, diphtheria, pertussis (Tdap) and quadrivalent meningococcal polysaccharide vaccine through week 16	97	EASI: 29±13	39±14	Placebo	Yes	Moderate-to-severe AD defined as IGA score ≥3 and EASI score ≥16	Not given.
Gooderham et al. (26)	Phase IIb NCT02780167	Abrocitinib 10 mg once daily through week 12	49	EASI: 28.1±13.1	44.3±15.9	Placebo	No	Moderate-to-severe AD defined as an IGA score ≥3 and an EASI score ≥12.	Washout period of 4 weeks for systematic treatment.
		Abrocitinib 30 mg once daily through week 12	51	EASI: 22.1±10.7	37.6±15.9				
		Abrocitinib 100 mg once daily through week 12	56	EASI: 26.7±11.8	41.1±15.6				
		Abrocitinib 200 mg once daily through week 12	55	EASI: 24.6±13.5	38.7±17.6				
Guttman-Yassky et al. (27)	Phase II NCT02576938	Baricitinib 2 mg once daily through week 16	37	EASI: 22.1 (16.8–32.3)	42 (26.0–52.0)	Placebo	Yes	Moderate-to-severe AD defined as EASI ≥12.	Not given
		Baricitinib 4 mg once daily through week 16	38	EASI: 19.5 (13.7–25.9)	32.5 (26.0–48.0)				
Guttman-Yassky et al. (21)	Phase II NCT01979016	Dupilumab 200 mg once weekly through week 16	54	EASI: 30 (18–49)	35 (27–50)	Placebo	No	Moderate-to-severe AD defined as EASI-score ≥16	Washout period 4 weeks: for immunosuppressant agents and phototherapy and 1 week for TCS and topical calcineurin antagonists
Wollenberg et al. (23)	Phase IIb NCT02347176	Tralokinumab 45 mg Q2W through week 12	50	EASI: 24.8±8.3	39.1 (15.1)	Placebo	Yes	Moderate-to-severe AD defined as an EASI ≥12 and IGA score ≥3.	Washout period 4 weeks: for systemic treatment and TCI.
		Tralokinumab150 mg Q2W through week 12	51	EASI: 27.1±11.2	37.1 (14.0)				
		Tralokinumab300 mg Q2W through week 12	52	EASI: 27.3±10.9	35.7 (14.6)				

Table SI. (contd)

Reference	Phase and name of clinical trial	Medication and dose	Randomized patients, *n*	Mean EASI score at beginning, range or mean ± SD	Age of patients, years, range or mean ± SD	Control group	Concurrent topical treatment allowed?	AD severity	Prior treatments/ washout
Guttmann-Yassky et al. (28)	Phase IIb NCT02925117	Upadacitinib 7.5 mg once daily through week 16	42	EASI: 31.4±15.8	41.5±15.4	Placebo	No	Moderate-to-severe AD defined as an EASI ≥16 and an IGA score ≥3	Washout period 4 weeks: for corticosteroids and systemic therapy and 10 days for TCS.
		Upadacitinib 15 mg once daily through week 16	42	EASI: 31.4±12.3	38.5±15.2				
		Upadacitinib 30 mg once daily through week 16	42	EASI: 28.2±11.6	39.9±15.3				
Reich et al. (29)	Phase III NCT03733301	Baricitinib 2 mg once daily through week 16	109	29.3±11.9	33.8±12.8	Placebo	Yes	Moderate-to-severe AD defined as EASI score ≥16 and an IGA score ≥3	Washout period 4 weeks for systemic therapy and 2 weeks for topical therapy
		Baricitinib 4 mg once daily through week 16	111	30.9±12.6	33.9±11.4				
Simpson et al. (30)	Phase III NCT03334396	BREEZE AD1: Baricitinib 1 mg once daily through week 16	127	EASI: 29±11.8	36±12.4	Placebo	Yes	Moderate-to-severe AD defined as an EASI score ≥16 and an IGA score ≥3	Wash out period 4 weeks for systemic treatments and 2 weeks for topical treatments.
		BREEZE AD1: Baricitinib 2 mg once daily through week 16	123	EASI: 31±11.7	35±13.7				
		BREEZE AD1: Baricitinib 4 mg once daily through week 16	125	EASI: 32±12.7	37±12.9				
Simpson et al. (30)	Phase III NCT03334422	BREEZE AD2: Baricitinib 1 mg once daily through week 16	125	EASI: 33±12.7	33±10.0	Placebo	Yes	Moderate-to-severe AD defined as an EASI score ≥16 and an IGA score ≥3	Wash out period 4 weeks for systemic treatments and 2 weeks for topical treatments.
		BREEZE AD2: Baricitinib 2 mg once daily through week 16	123	EASI: 35±16.0	36±13.2				
		BREEZE AD2: Baricitinib 4 mg once daily through week 16	123	33±12.7	34±14.1				
Bieber et al. (22)	Phase III NCT03720470	Abrocitinib 200 mg once daily through week 12	226	32.1±13.1	38.8±14.5	Placebo	Yes	Moderate-to-severe AD defined as an IGA ≥3 and EASI ≥16	Washout period: 4 weeks for systematic immunosuppressive drugs.
		Abrocitinib 100 mg once daily through week 12	238	30.3±13.5	37.3±14.8				
		Dupilumab 300 mg Q2W through week 12	242	30.4±12.0	37.1±14.6				
Blauvelt et al. (31)	Phase IIIb NCT03738397	Upadacitinib 30 mg once daily through week 16	348	30.8±12.5	36.6±14.6	Dupilumab 300 mg Q2W	No	Moderate-to-severe AD defined as IGA ≥3 and EASI ≥16	Washout period: 4 weeks for systemic therapy
Silverberg et al. (24)	Phase III NCT03363854	ECZTRA 3: Tralokinumab 300 mg Q2W through week 16	253	EASI: 24.7 (18.4–35.9)	37.0 (28.0–52.0)	Placebo	Yes	Moderate-to-severe AD defined as an EASI score ≥12 and IGA score ≥3	Washout period: 4 weeks for systemic immunosuppressive drugs (e.g. methotrexate, cyclosporine, azathioprine, mycophenolate mofetil, Janus kinase inhibitors, and systemic corticosteroid use)
Simpson et al. (30)	Phase III NCT03435081	Baricitinib 1 mg once daily through week 16	147	EASI: 27.7 (11)	40 (17)	Placebo	Yes	Moderate-to-severe AD defined as an EASI ≥16 and IGA score ≥3	Washout period: 4 weeks for systematic therapies.
		Baricitinib 2 mg once daily through week 16	146	EASI: 26.6 (11)	40 (15)				
Wollenberg et al. (25)	Phase III NCT03131648 and NCT03160885	ECZTRA 1: Tralokinumab 300 mg Q2W through week 16	603	EASI: 28.2 (21.3–40.3)	37.0 (27.0–48.0)	Placebo	No	Moderate-to-severe AD defined as an EASI ≥12 and IGA score ≥3.	Washout period 4 weeks for systemic treatments and 2 weeks for TCS and other topical treatments
		ECZTRA 2: Tralokinumab 300 mg Q4W through week 16	593	EASI: 28.2 (19.8–40.8)	34.0 (25.0–48.0)				

EASI: Eczema Area and Severity Index; IGA: Investigator Global Assessment; SCORAD: Scoring Atopic Dermatitis; TCS: topical corticosteroids; TCI: topical calcineurin inhibitors. QW: once weekly; Q2W: once every second week; Q4W: once every fourth week; TCS: topical corticosteroids; EASI: Eczema Area And Severity Index.

Table SII. Efficacy outcomes after dupilumab, tralokinumab and JAK-inhibitors treatment in atopic dermatitis patients

Reference	Medication and dose	EASI reduction mean, %	Proportion achieving EASI-50, %	Proportion achieving EASI-75, %	Proportion achieving EASI-90, %	Proportion achieving IGA 0/1, %	SCORAD reduction, mean, %	DLQI reduction, mean, %	POEM reduction, mean, %	P-percentage of body-surface area affected reduction, mean %	P-numeric rating scale (NRS) reduction mean, %
Beck et al. (14)	Dupilumab 300 mg once a week (QW) through week 12	74.0	85	62	–	40	–	–	–	59.9	55.7
Simpson et al. (15)	SOLO 1: Dupilumab 300 mg once every second week (Q2W) plus TCS through week 16	72.3	69	51	36	38	57.7	9.3	11.6	33.4	51.0
	SOLO 1: Dupilumab 300 mg QW plus TCS through week 16	72.0	61	52	33	37	57.0	9.0	11.0	34.3	48.9
	SOLO 2: Dupilumab 300 mg Q2W plus TCS through week 16	67.1	65	44	30	36	51.1	9.3	10.2	30.6	44.3
	SOLO 2: Dupilumab 300 mg QW plus TCS through week 16	69.1	61	48	31	36	53.5	9.5	11.3	32.1	48.3
Thaçi et al. (16)	Dupilumab 300 mg QW through week 16.	73.7	83	59	36	33	56.9	59.0	–	65.6	46.9
	Dupilumab 300 mg Q2W through week 16	68.2	78	51	29	30	51.2	39.6	–	52.1	40.1
	Dupilumab, 200 mg Q2W through week 16	65.4	62	55	31	28	46.0	43.3	–	54.5	34.12
	Dupilumab 300 mg Q4W through week 16	63.5	71	49	28	22	48.8	37.4	–	48.8	32.6
	Dupilumab 100 mg Q4W through week 16	44.8	45	29	15	12	26.6	11.9	–	26.2	15.7
Blauvelt et al. (17)	Dupilumab 300 mg plus TCS Q2W plus TCS through week 16	76.7	80	69	40	39	62.1	9.7	12.4	38.6	56.2
	Dupilumab 300 mg QW plus TCS through week 16	77.3	78	64	43	39	63.3	10.5	12.5	37.4	54.8
Tsianakas et al. (18)	Dupilumab 300 mg QW through week 12	79.9	90.6	68.8	–	–	56.9	–	–	–	59.2
Weller et al. (19)	Dupilumab 300 mg plus TCS Q2W through week 16	79.8	85.0	62.6	45.8	40.2	62.4	9.5	11.9	39.2	53.9
	Dupilumab 300 mg plus TCS QW through week 16	78.2	85.5	59.1	37.3	39.1	58.3	8.8	11.4	37.5	51.7
Blauvelt et al. (20)	Dupilumab 300 mg QW plus single tetanus, diphtheria, pertussis (Tdap) and quadrivalent meningococcal polysaccharide vaccine through week 16	–	72.2	53.6	–	44.3	–	–	13.3	30.0	–
Gooderham et al. (26)	Abrocitinib 10 mg once daily through week 12	31.1	26.1	17.4	10.9	10.9	26.7	–	–	7.4	–
	Abrocitinib 30 mg once daily through week 12	40.7	33.3	13.3	0	8.9	30.1			12.7	
	Abrocitinib 100 mg once daily through week 12	59.0	55.6	40.7	25.9	29.6	49.2			20.2	
	Abrocitinib 200 mg once daily through week 12	82.6	79.2	64.6	52.1	43.8	69.7			28.6	
Guttman-Yassky et al. (29)	Baricitinib 2 mg once daily through week 16	64	57	30	19	22	41	–	–	–	33
	Baricitinib 4 mg once daily through week 16	65	61	34	21	21	47				22
Guttman-Yassky et al. (28)	Dupilumab 200 mg once weekly through week 16	75.2	77.8	66.7	33.3	37	54.8	–	–	–	51.5
Wollenberg et al. (23)	Tralokinumab 45 mg Q2W through week 12	13.67	54	32	–	11.6	–	–	–	–	–
	Tralokinumab 150 mg Q2W through week 12	15.14	67	43	–	19.5	–	–	–	–	–
	Tralokinumab 300 mg Q2W through week 12	15.72	73	42	–	26.7	–	–	–	–	–
Guttmann-Yassky et al. (28)	Upadacitinib 7.5 mg once daily through week 16	40	50	29	15	14	–	–	–	11	39
	Upadacitinib 15 mg once daily through week 16	61	71	51	26	31				28	49
	Upadacitinib 30 mg once daily through week 16	75	82	69	49	50				30	70
Reich et al. (29)	Baricitinib 2 mg once daily through week 16	58.2	64	43	17	–	29.9	8	9	–	43
	Baricitinib 4 mg once daily through week 16	67.2	70	48	24		35.8	9	11		51

Reference	Medication and dose	EASI reduction mean, %	Proportion achieving EASI-50, %	Proportion achieving EASI-75, %	Proportion achieving EASI-90, %	Proportion achieving IGA 0/1, %	SCORAD reduction, mean, %	DLQI reduction, mean, %	POEM reduction, mean, %	P-percentage of body-surface area affected reduction, mean %	P-numeric rating scale (NRS) reduction mean, %
Simpson et al. (30)	BREEZE AD1: Baricitinib 1 mg once daily through week 16	48.2	Monotherapy: 25.0	Monotherapy: 17.3 With TCS: 28.3	Monotherapy: 8.7 With TCS: 11.8	–	–	4.6	Monotherapy: 5.3	–	31.3
	BREEZE AD1: Baricitinib 2 mg once daily through week 16	51.9	Monotherapy: 30.1	Monotherapy: 18.7 With TCS: 32.5	Monotherapy: 10.6 With TCS: 13.8			4.3	Monotherapy: 6.3		29.4
	BREEZE AD1: Baricitinib 4 mg once daily through week 16	59.4	Monotherapy: 41.6	Monotherapy: 24.8 With TCS: 36.0	Monotherapy: 16.0 With TCS: 20.0			6.8	Monotherapy: 7.8		36.6
Simpson et al. (30)	BREEZE AD2: Baricitinib 1 mg once daily through week 16	41.7	Monotherapy: 18.4	Monotherapy: 12.8 With TCS: 28.0	Monotherapy: 6.4 With TCS: 9.6	–	–	5.1	Monotherapy: 3.9	–	31.4
	BREEZE AD2: Baricitinib 2 mg once daily through week 16	54.8	Monotherapy: 27.6	Monotherapy: 17.9 With TCS: 36.6	Monotherapy: 8.9 With TCS: 17.9			7.4	Monotherapy: 7.1		47.2
	BREEZE AD2: Baricitinib 4 mg once daily through week 16	54.9	Monotherapy: 29.3	Monotherapy: 21.1 With TCS: 35.8	Monotherapy: 13.0 With TCS: 22.0			7.6	Monotherapy: 7.6		46.9
Bieber et al. (22)	Abrocitinib 200 mg once daily through week 12	80.6	86.3	70.3	46.1	48.4	44.9	–	12.6	7.0	–
	Abrocitinib 100 mg once daily through week 12	73.8	75.3	58.7	36.6	36.6	36.6		9.6	8.1	
	Dupilumab 300 mg Q2W through week 12	75.4	80.9	58.1	34.9	36.5	39.7		10.8	9.0	
Blauvelt et al. (31)	Upadacitinib 30 mg once daily through week 16	–	–	71	60.6	–	–	–	–	–	66.9
Silverberg et al. (24)	ECZTRA 3: Tralokinumab 300 mg Q2W plus TCS through week 16	21.0	79.4	56.0	32.9	38.9	37.7	11.7	11.8	–	4.1
Simpson et al. (30)	Baricitinib 1 mg once daily through week 16	46.66	19.7	–	7.5	–	–	5.47	4.57	–	2.18
	Baricitinib 2 mg once daily through week 16	54.37	34.9	–	20.5			7.46	7.44		2.72
Wollenberg et al. (25)	ECZTRA 1: Tralokinumab 300 mg Q2W through week 16	15.5	41.6	25	14.5	15.8	25.2	7.1	7.6	–	–
	ECZTRA 2: Tralokinumab 300 mg Q2W week 16	16.9	49.9	33.2	18.3	22.2	28.1	8.8	8.8	–	–

DLQI: Dermatology Life Quality Index; EASI: Eczema Area and Severity Index; EASI-50: percentage of patients achieving 50% EASI score improvement; EASI-75: percentage of patients achieving 75% EASI score improvement; EASI-90: percentage of patients achieving 90% EASI score improvement; IGA: Investigator Global Assessment; P-NRS: Pruritus Numerical Rating Scale; POEM: Patient-Oriented Eczema Measure; P-VAS: Pruritus Visual Analog Scale; SCORAD: Scoring Atopic Dermatitis; TCS: topical corticosteroid.

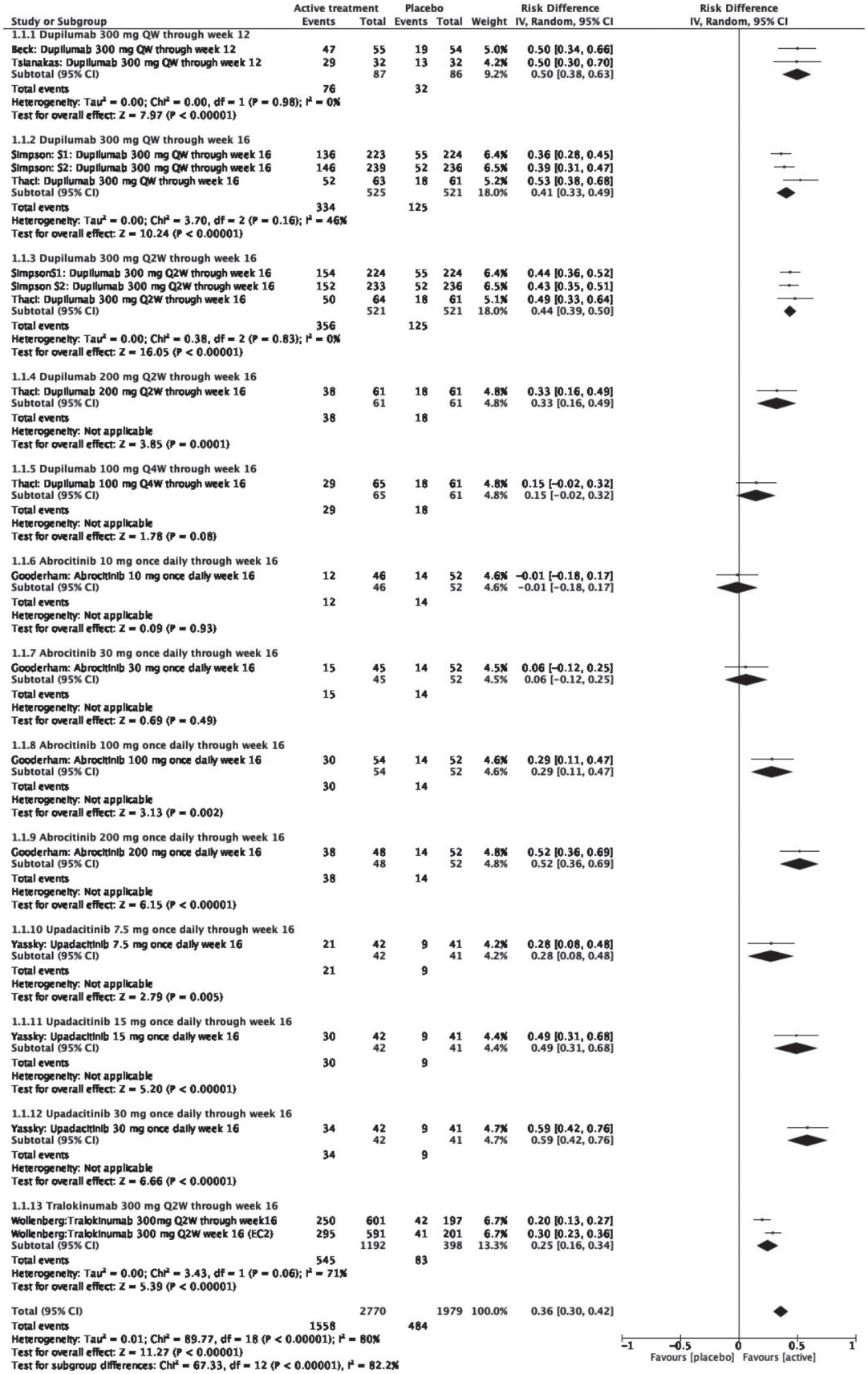

Fig. S1. Results of meta-analysis for Eczema Area and Severity Index (EASI)-50, where patients were not allowed to use topical corticosteroids (TCS). QW: once weekly; Q2W: once every second week; Q4W: once every fourth week; TCS: topical corticosteroids; EASI: Eczema Area And Severity Index.

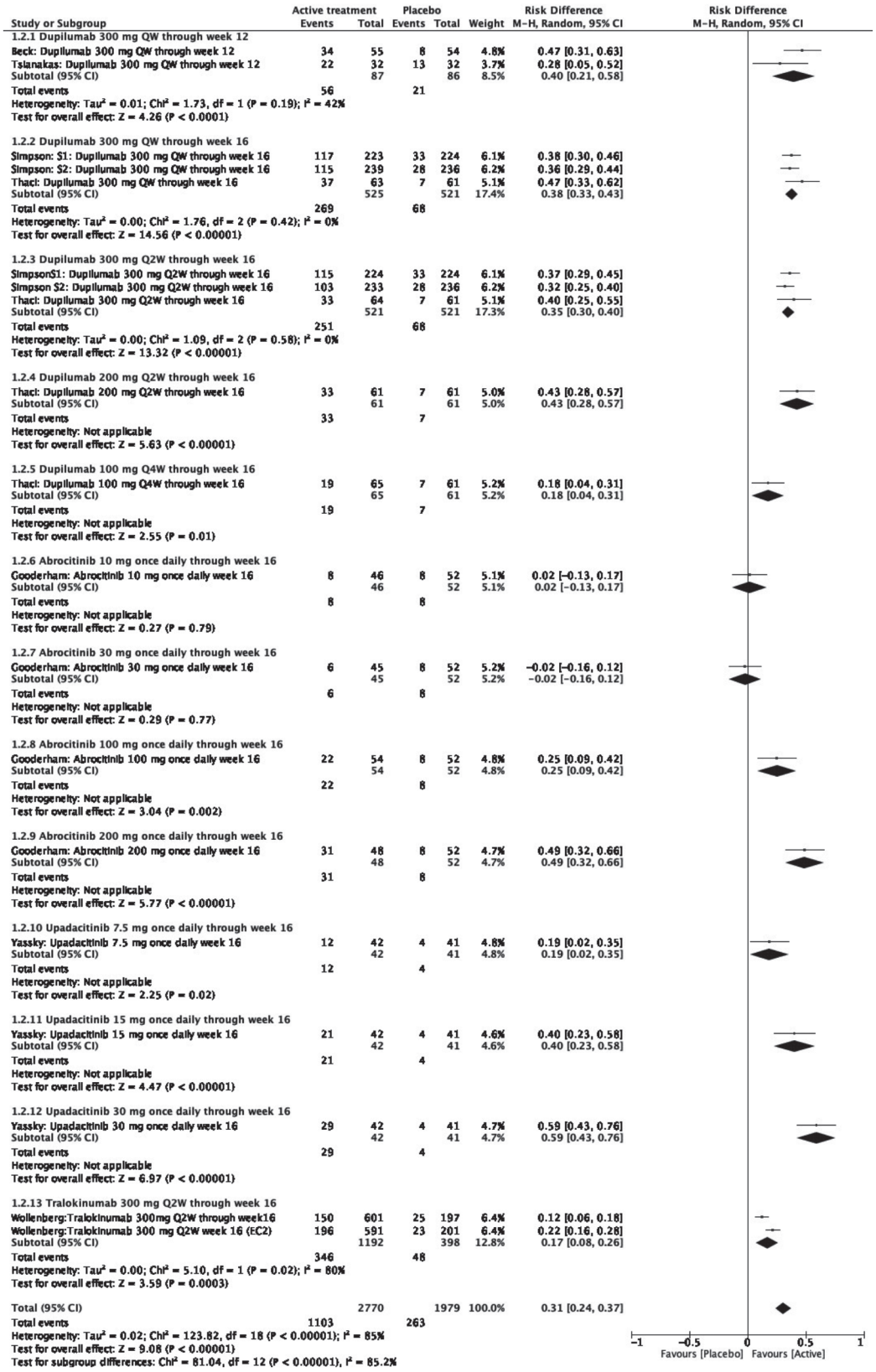

Fig. S2. Results of meta-analysis for Eczema Area and Severity Index (EASI)-75, where patients were not allowed to use topical corticosteroids (TCS). QW: once weekly; Q2W: once every second week; Q4W: once every fourth week; TCS: topical corticosteroids; EASI: Eczema Area And Severity Index.]

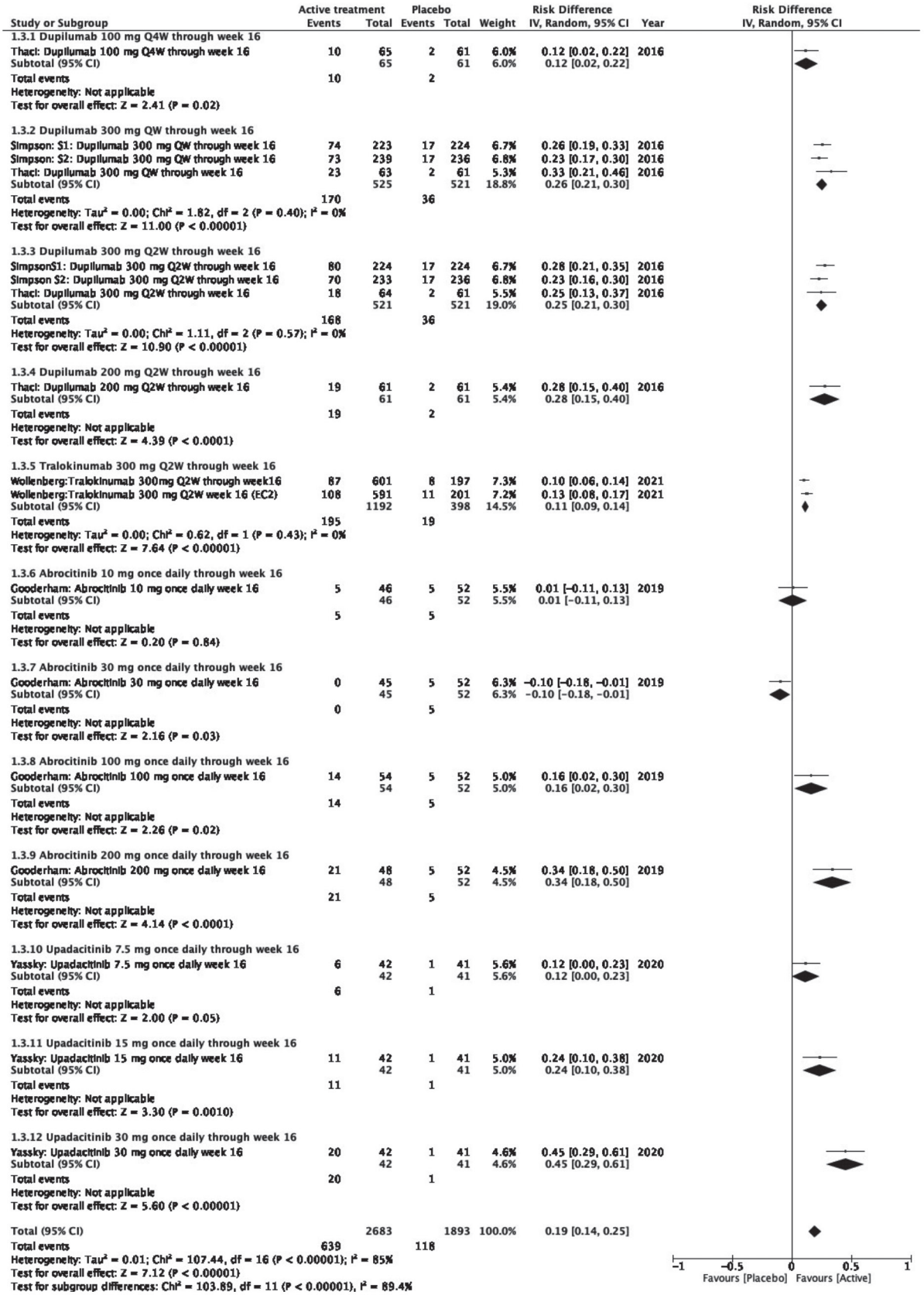

Fig. S3. Results of meta-analysis for Eczema Area and Severity Index (EASI)-90, where patients were not allowed to use topical corticosteroids (TCS). QW: once weekly; Q2W: once every second week; Q4W: once every fourth week; TCS: topical corticosteroids; EASI: Eczema Area And Severity Index.

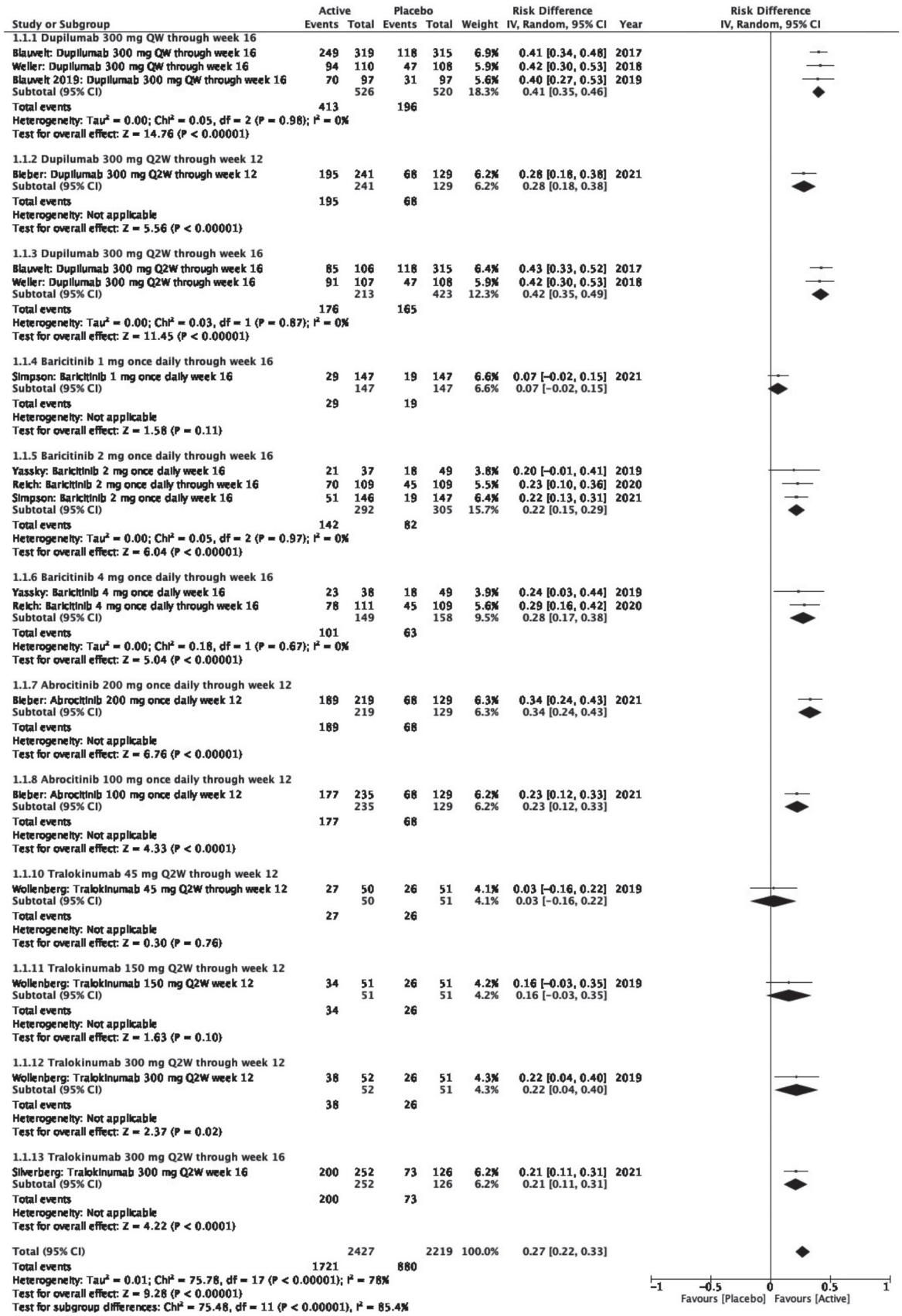

Fig. S4. Results of meta-analysis for Eczema Area and Severity Index (EASI)-50, where patients were allowed to use topical corticosteroids (TCS). QW: once weekly; Q2W: once every second week; Q4W: once every fourth week; TCS: topical corticosteroids; EASI: Eczema Area And Severity Index.

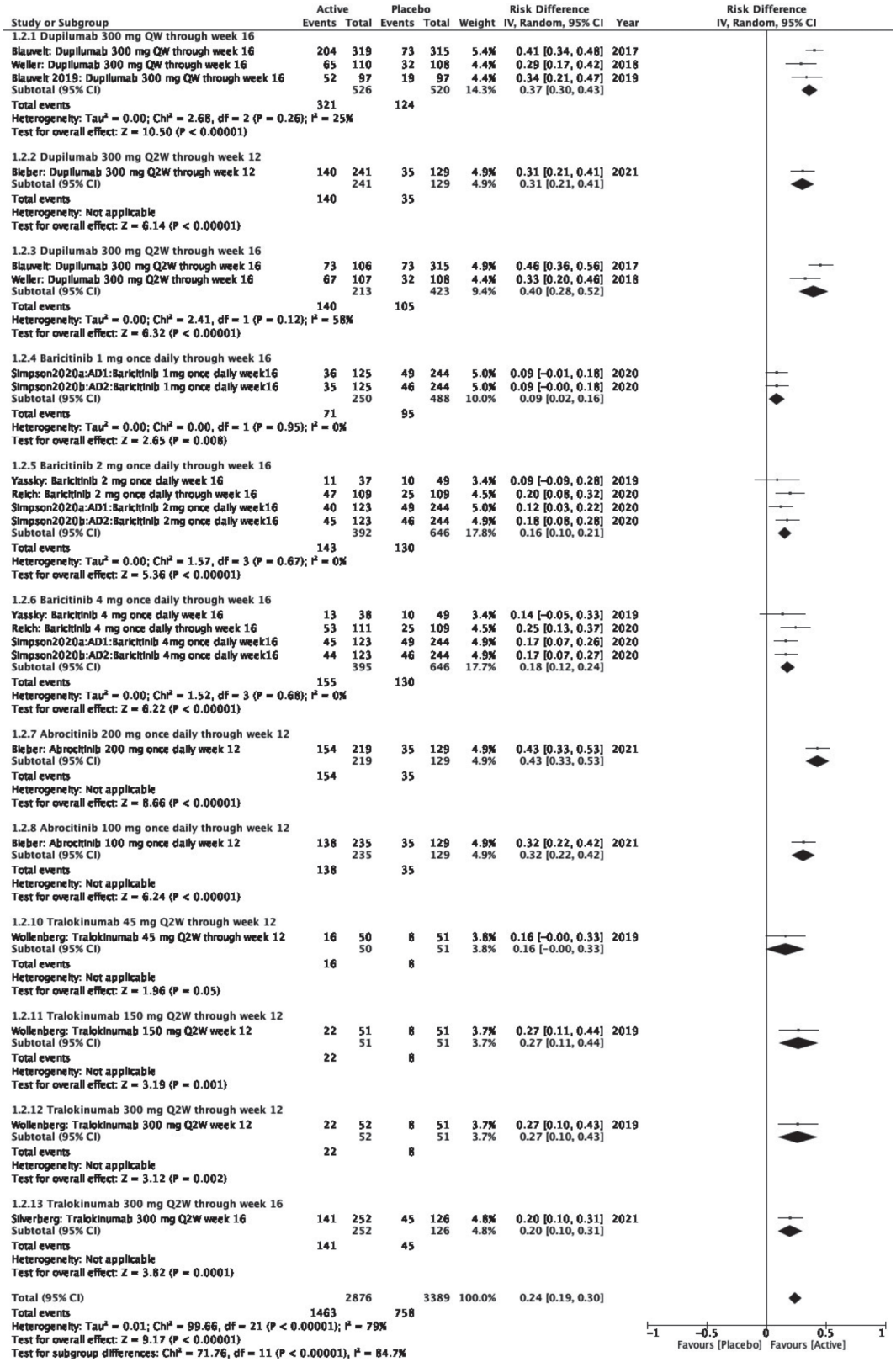

Fig. S5. Results of meta-analysis for Eczema Area and Severity Index (EASI)-75, where patients were allowed to use topical corticosteroids (TCS). QW: once weekly; Q2W: once every second week; Q4W: once every fourth week; TCS: topical corticosteroids; EASI: Eczema Area And Severity Index.

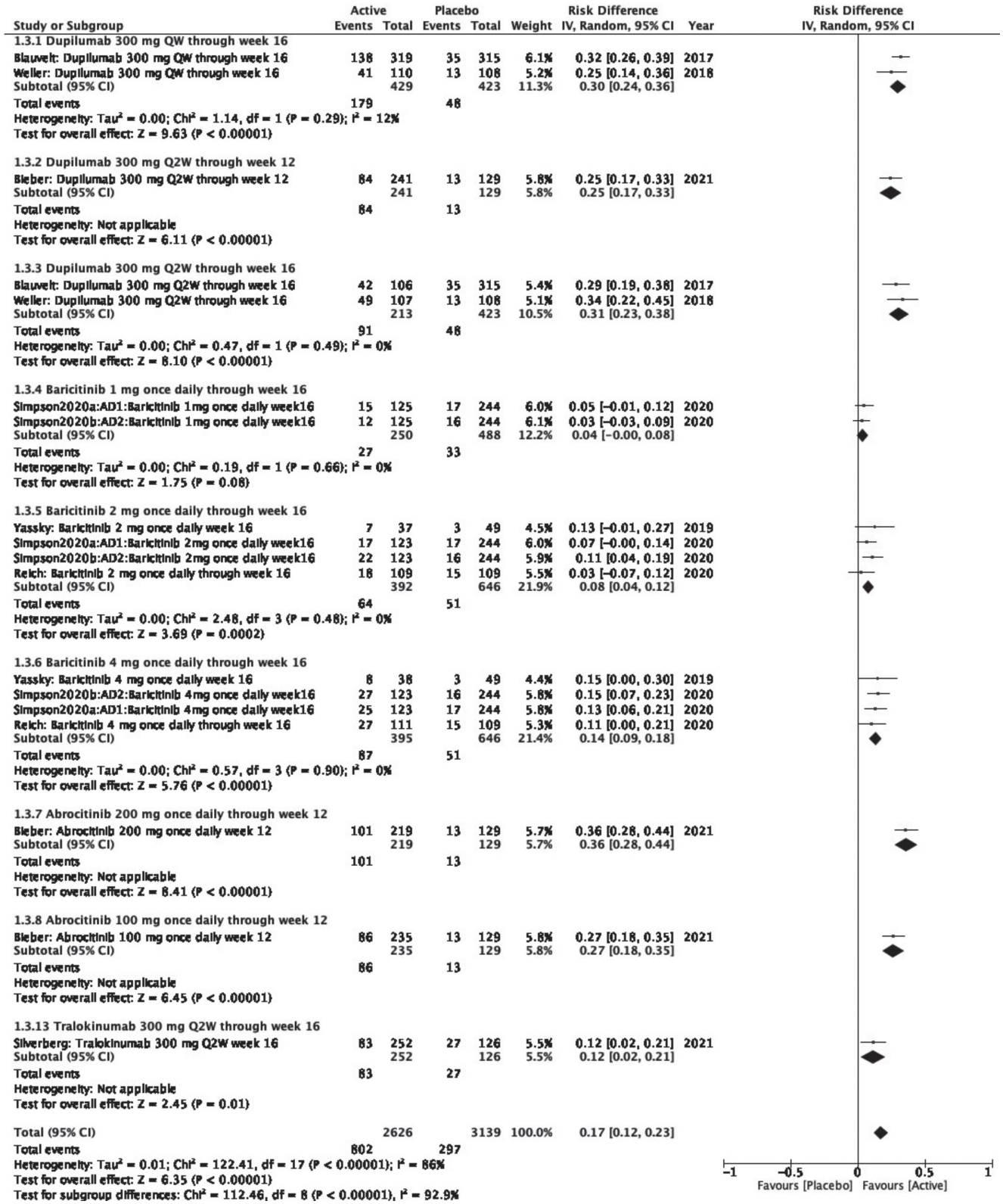

Fig. S6. Results of meta-analysis for Eczema Area and Severity Index (EASI)-90, where patients were allowed to use topical corticosteroids (TCS). QW: once weekly; Q2W: once every second week; Q4W: once every fourth week; TCS: topical corticosteroids; EASI: Eczema Area And Severity Index.