ASLAN004 MAD in Atopic Dermatitis

Topline results

September 27, 2021

NASDAQ: ASLN

ASLAN PHARMACEUTICALS

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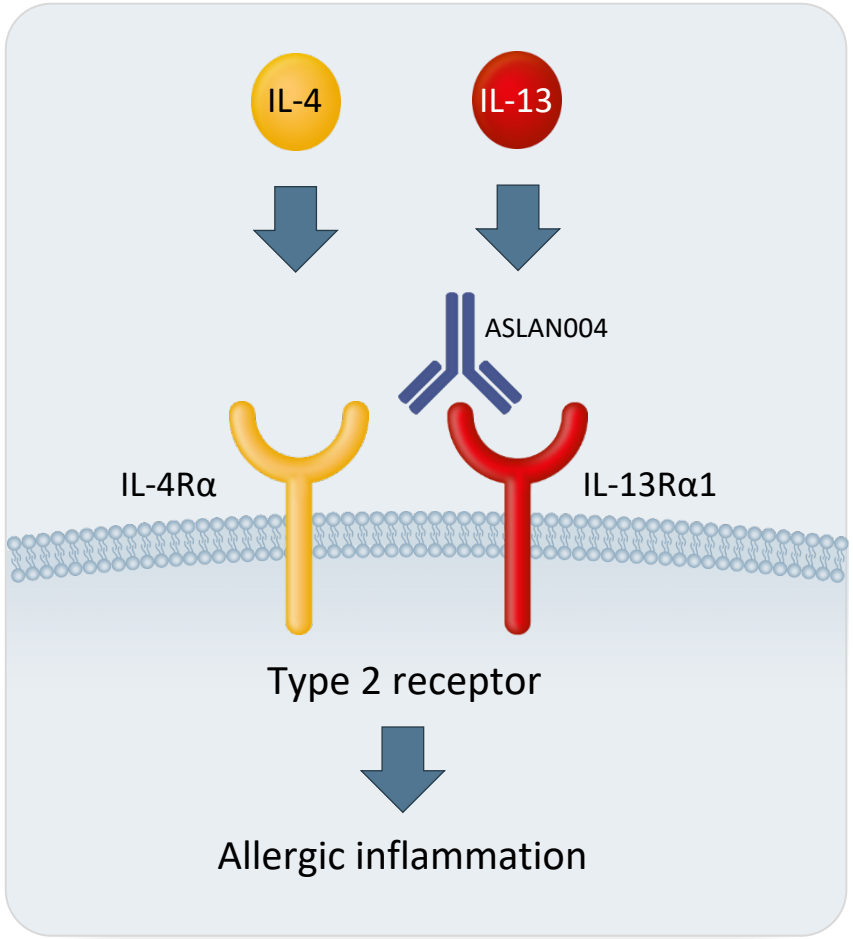
Topline data conclusively establishes proof of concept for ASLAN004

- ASLAN004 is a novel, potential first-in-class antibody targeting the IL-13 receptor. We believe that this unique mechanism has the potential to improve upon current biologics used to treat allergic disease
  - Dermatologists and patients are looking for additional AD treatment options – opportunity to improve on efficacy, safety and dose regimen
- Data conclusively establishes proof of concept for ASLAN004 in AD, and supports a potentially differentiated safety and efficacy profile
  - ASLAN004 demonstrated a statistically significant improvement ($p<0.025$[1]) versus placebo in the primary efficacy endpoint of percentage change in EASI from baseline
  - ASLAN004 also showed statistically significant improvements ($p<0.05$[1]) in other key efficacy endpoints: EASI-50, EASI-75, peak pruritus, POEM
  - Well-tolerated with no cases of conjunctivitis in the expansion cohort
- Preparations for Phase 2b underway, evaluating 2-weekly and 4-weekly regimens. First patient in on track for 4Q 21

Topline data demonstrate a potential best-in-class profile in terms of efficacy and safety

1 One-sided p-value

ASLAN004 is the only monoclonal antibody in the clinic targeting IL-13Rα1

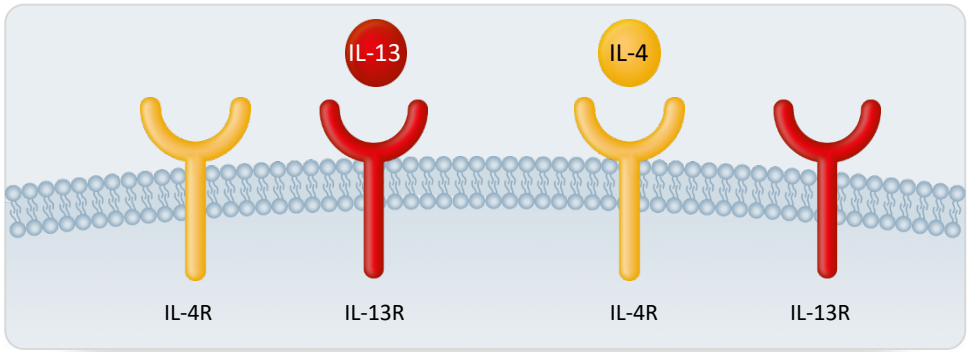


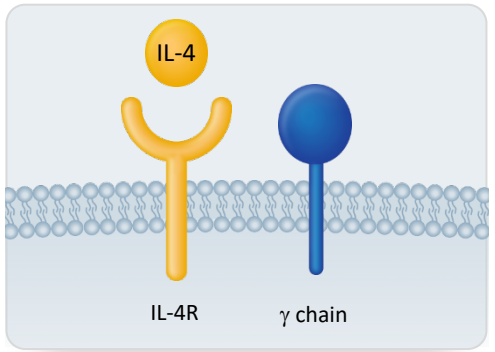
- IL-4 and IL-13 are central to triggering allergy and symptoms of atopic dermatitis
- ASLAN004 blocks the Type 2 receptor, preventing signaling through **both** IL-4 and IL-13

Potential for improved efficacy, safety and dose regimen:

- Selectively targets the Type 2 receptor. Blocking the Type 1 receptor may lead to unwanted effects
- Stronger binding to receptor than *dupilumab* relative to its respective ligand

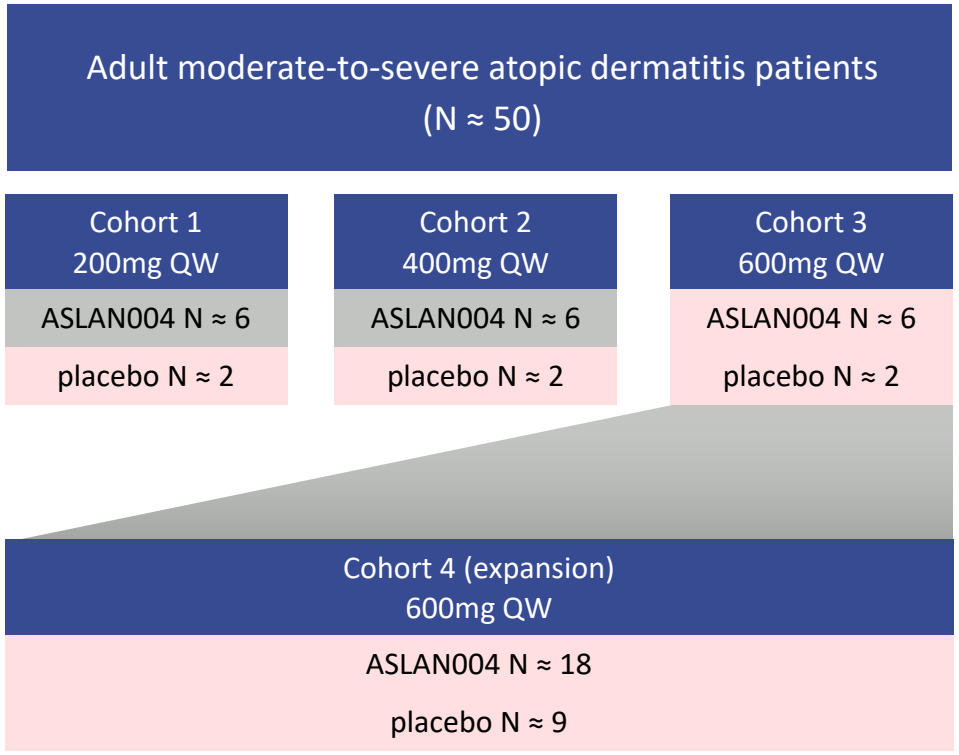
ASLAN004 selectively blocks the Type 2 receptor





	Type 2 receptor		Type 1 receptor
	Blocks IL-13 signalling	Blocks IL-4 signalling	Blocks IL-4 signalling
ASLAN004	Specific and complete blockade of Type 2 receptor		
Lebrikizumab	Partial blockade of Type 2 receptor signalling		
Dupilumab	Broad blockade of Type 1 and Type 2 receptors		

Completed MAD / PoC study in moderate-severe AD



Study has 80% power to detect 39% improvement in EASI from baseline, compared to placebo, based on a one-sided 5% significance level

- Double-blind, randomized, placebo-controlled Phase 1 study
- Patients dosed weekly via subcutaneous injection for 8 weeks with a 12-week recovery period
- Positive interim data from dose escalation (cohorts 1 to 3) announced in March 2021
- Cohort 4 (expansion) recruited additional patients dosed with 600mg QW
- Subsequent analysis compares patients in cohorts 3 and 4 dosed with 600mg QW against all placebos

Primary endpoints are safety and tolerability

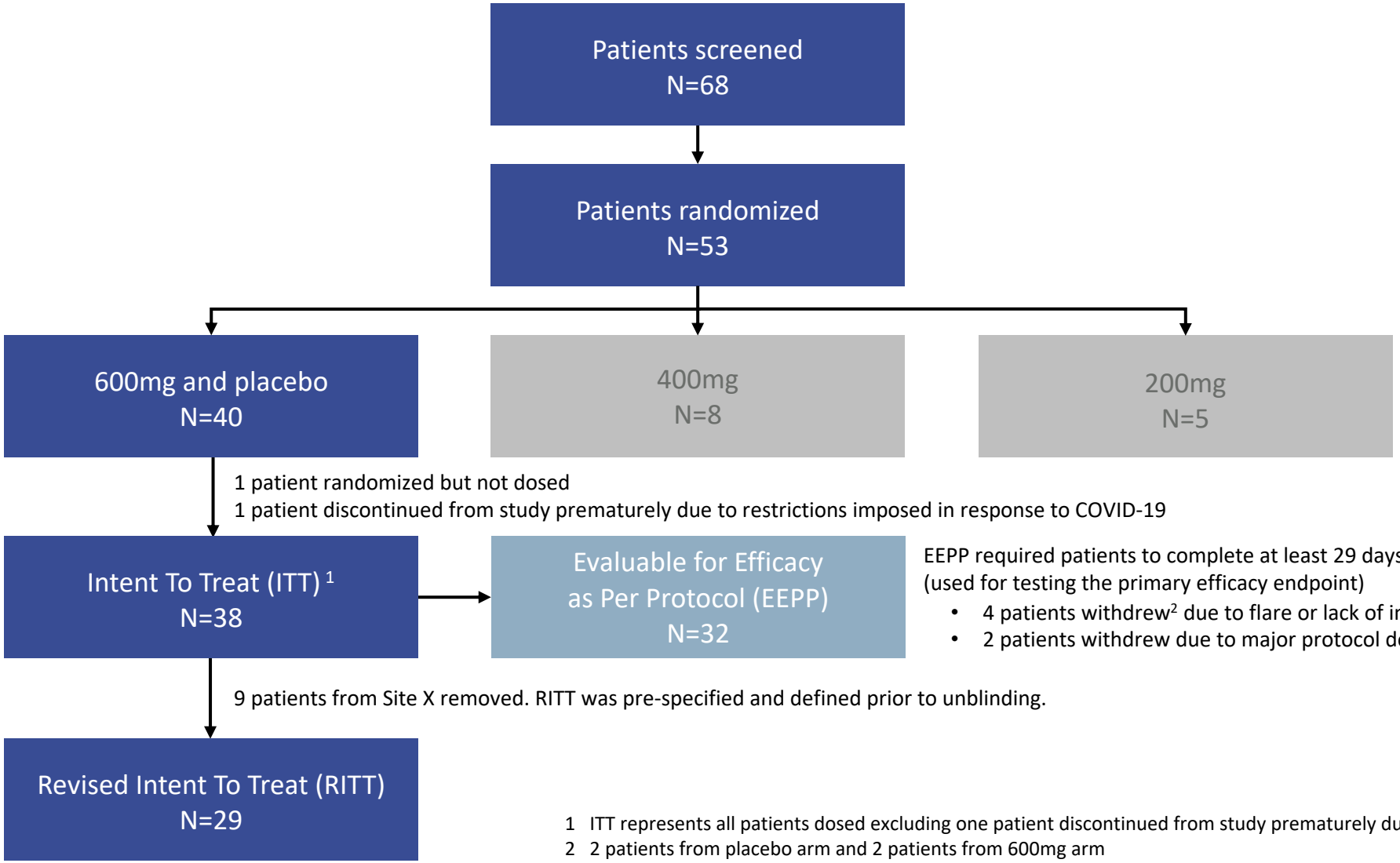
Secondary endpoints include percentage change from baseline in EASI (Eczema Area and Severity Index) score, pruritus score (numeric rating scale, NRS) and IGA (Investigator Global Assessment), and biomarkers TARC and IgE

Key inclusion criteria:

- Chronic AD present for ≥3 years before screening visit
- EASI score ≥16 at screening and baseline
- IGA score ≥3 (scale of 0 to 4) at screening and baseline
- ≥10% BSA (Body Surface Area) of AD involvement at screening and baseline

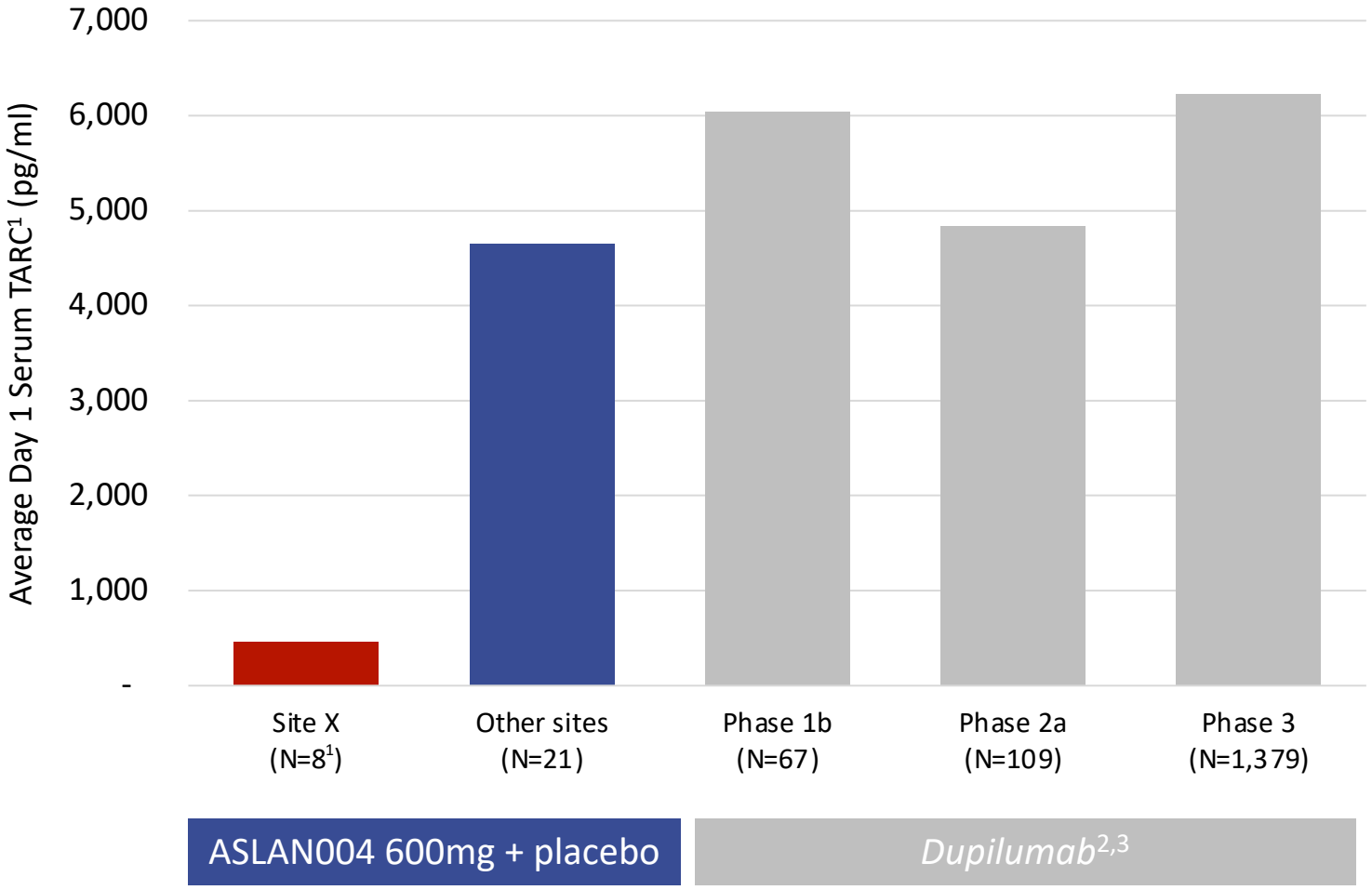
Pink box denotes patients included in the analysis in this presentation

Patients recruited from 10 sites in US, Australia and Singapore



1 ITT represents all patients dosed excluding one patient discontinued from study prematurely due to COVID-19 restrictions
2 2 patients from placebo arm and 2 patients from 600mg arm

Patients from other sites consistent with previous AD studies. All patients from Site X atypical of moderate-to-severe AD patients.



Patient history and biomarkers not consistent with typical moderate-to-severe AD patient population:

- All patients[1] at Site X had TARC levels below 1,200 pg/ml
- 89% of patients at Site X had no allergic co-morbidities (compared to 13% at other sites)
- Baseline eosinophil levels at Site X around an order of magnitude lower than other sites and other comparable AD studies

1 All patients with Day 1 TARC data included
2 Beck et al (2014) N Engl J Med 2014;371:130-9
3 Hamilton et al (2019), 49th Annual ESDR Meeting Sep 18-21, 2019

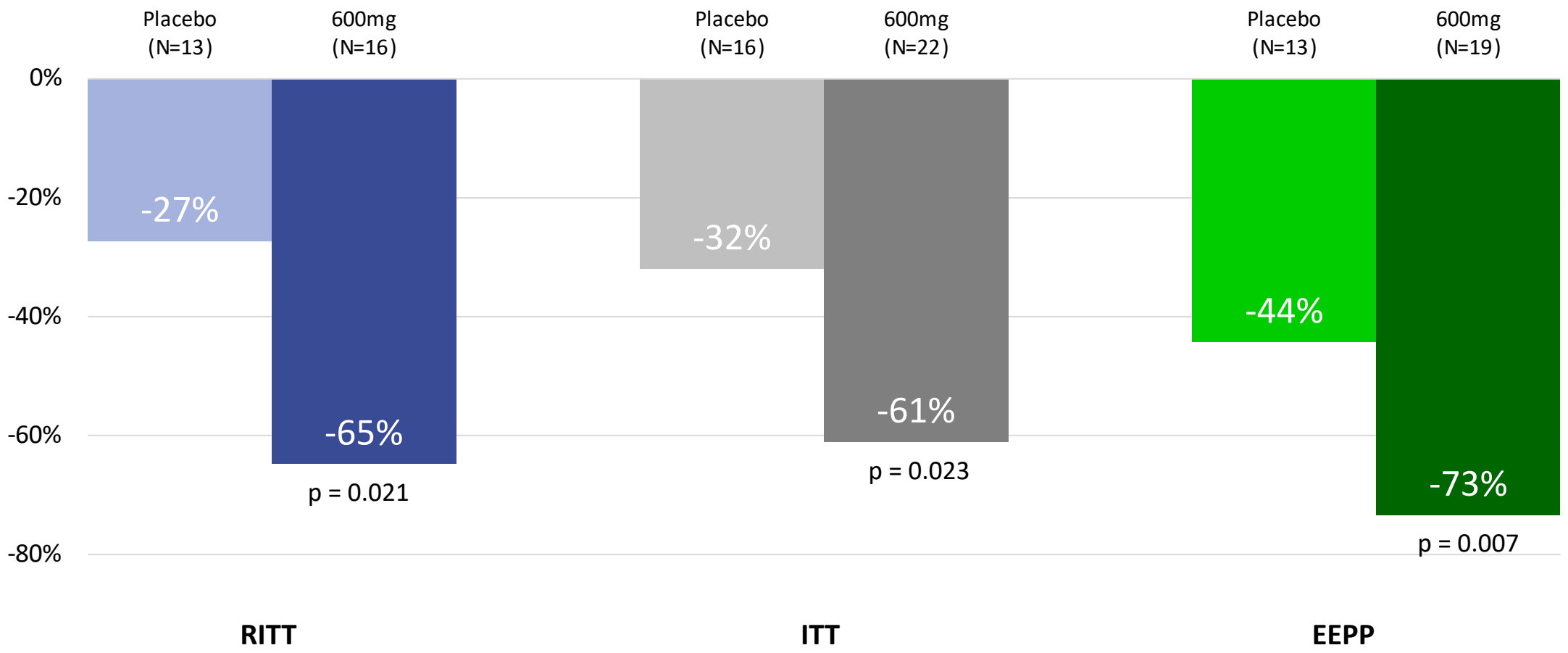
Selected baseline patient characteristics

	RITT		ITT	
	600mg (N=16)	Placebo (N=13)	600mg (N=22)	Placebo (N=16)
Age (years)	34.0	34.2	40.2	38.8
Mean EASI score	30.5	31.5	27.6	29.0
Mean BMI	26.3	25.8	25.5	26.7
Patients with IGA 3 / IGA 4	56% / 44%	54% / 46%	68% / 32%	63% / 38%
Mean BSA	45.8%	50.1%	41.0%	46.1%
Mean peak pruritus NRS score	7.5[1]	7.9	7.9[2]	7.9

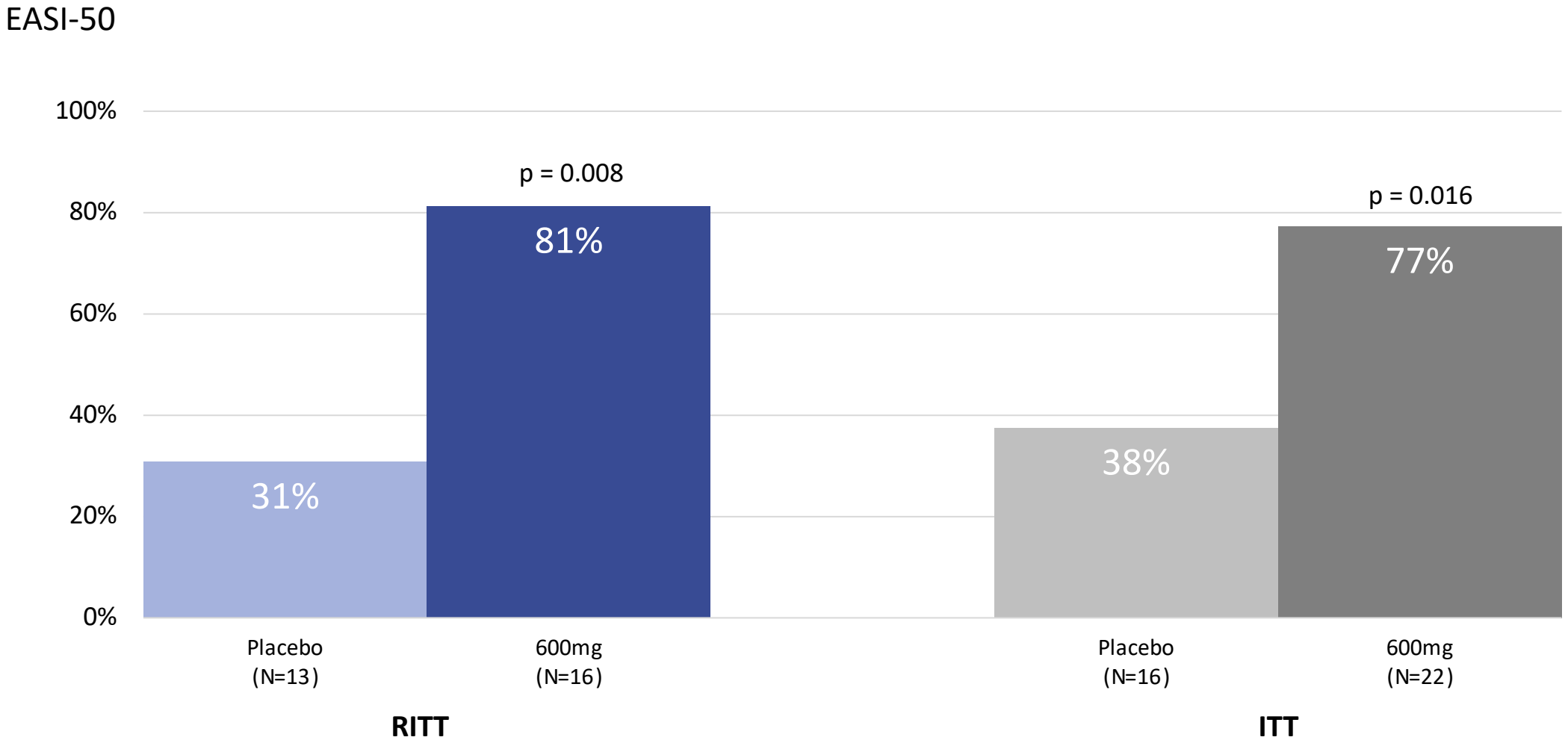
1 N=13 as 3 patients did not have a baseline value
2 N=19 as 3 patients did not have a baseline value

EASI scores at week 8 (primary efficacy endpoint)

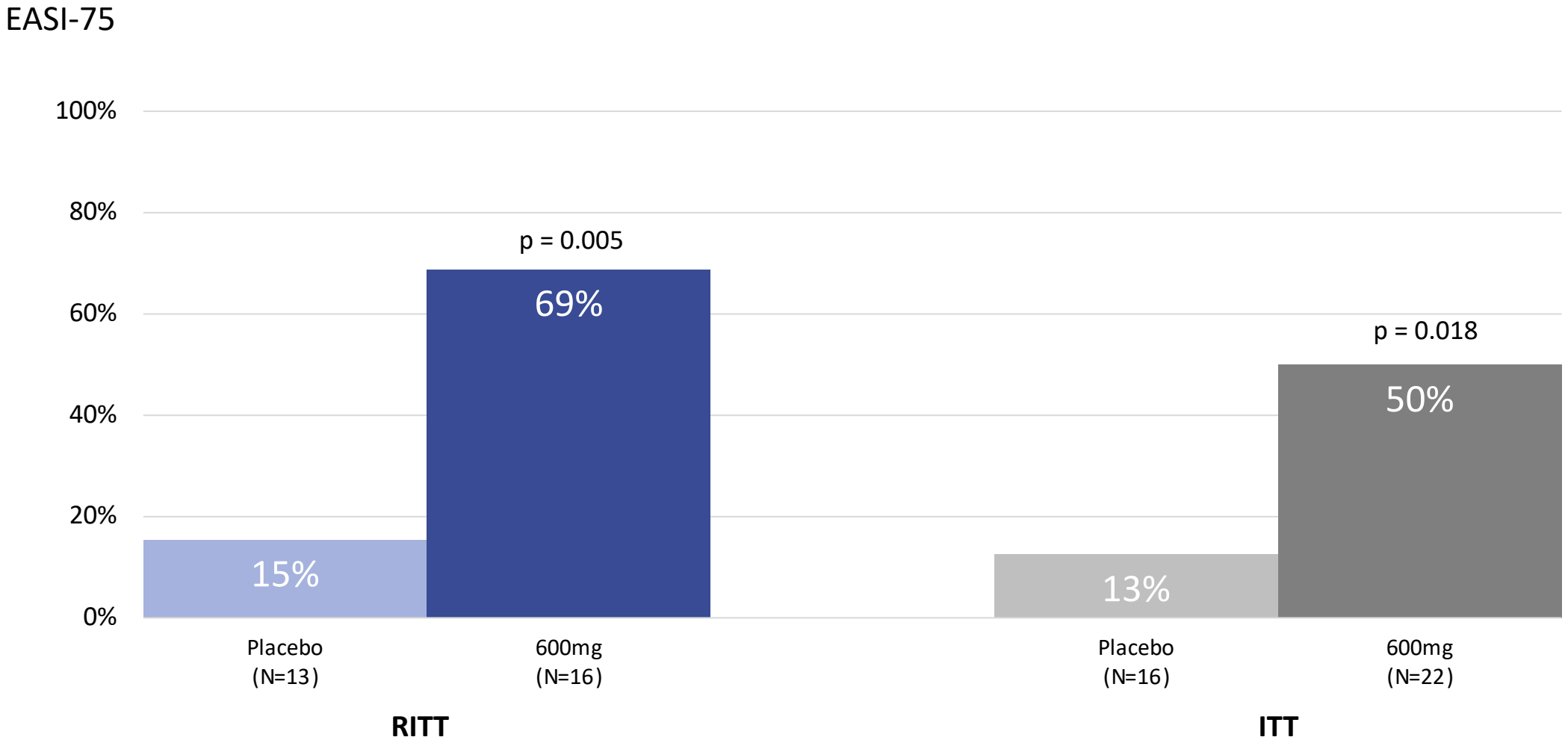
Mean change in EASI from baseline



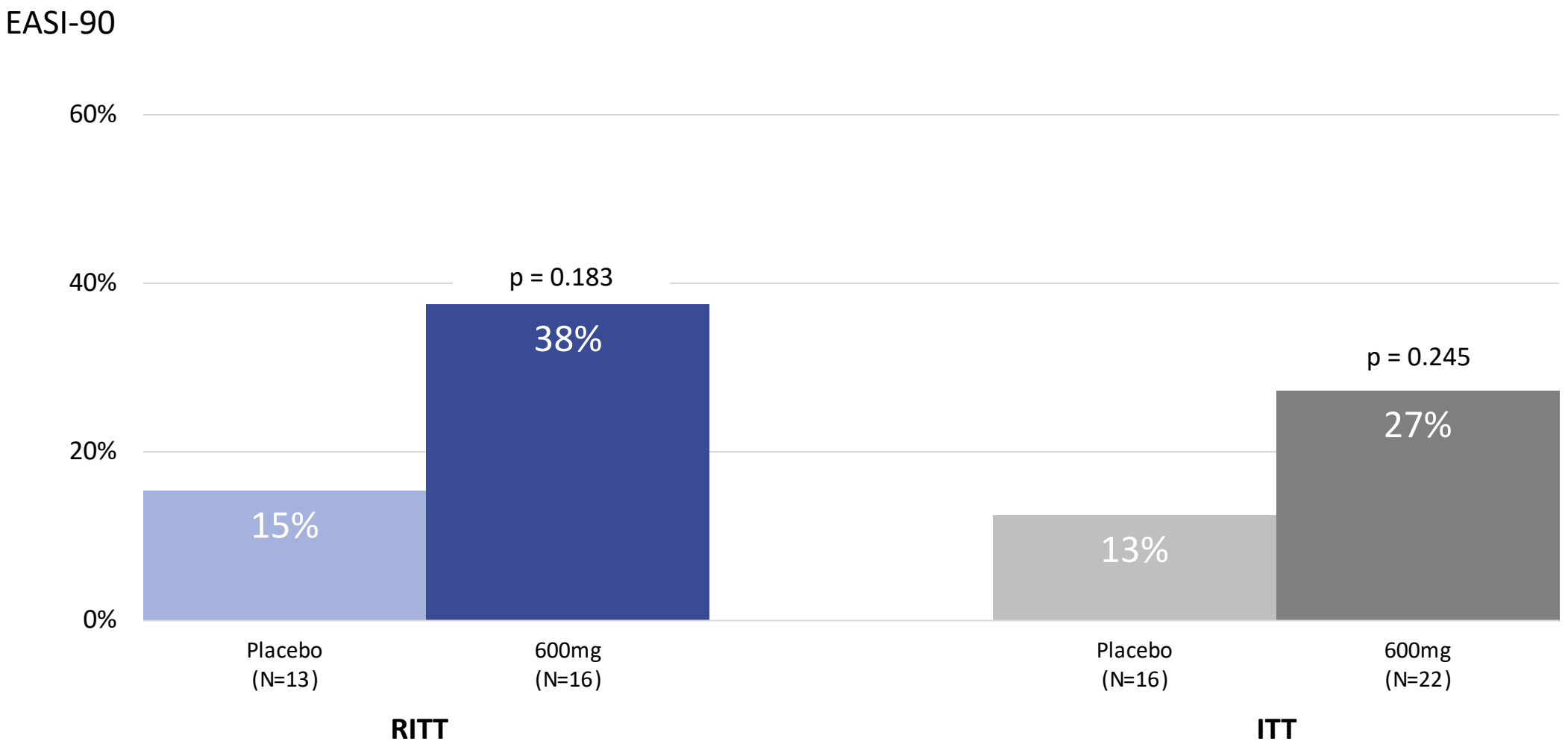
EASI scores at week 8



EASI scores at week 8

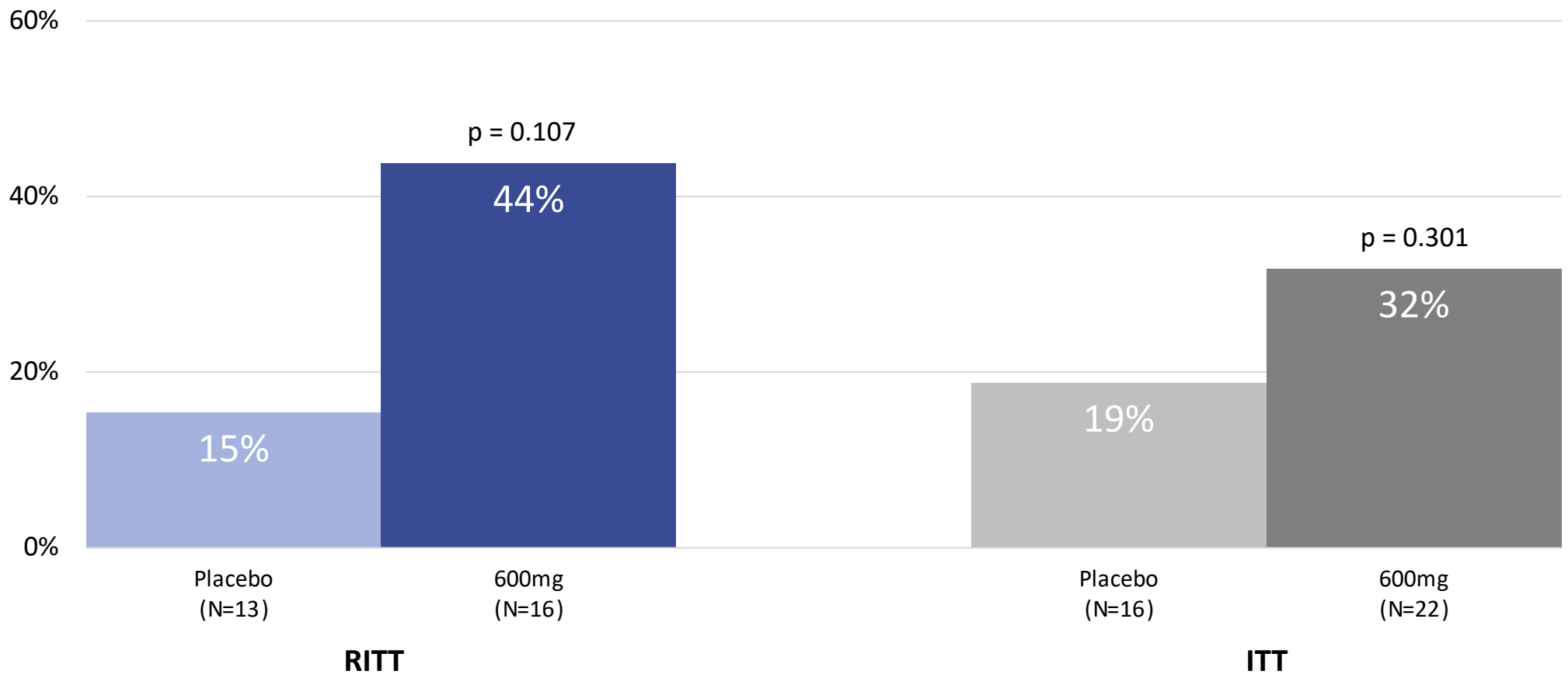


EASI scores at week 8



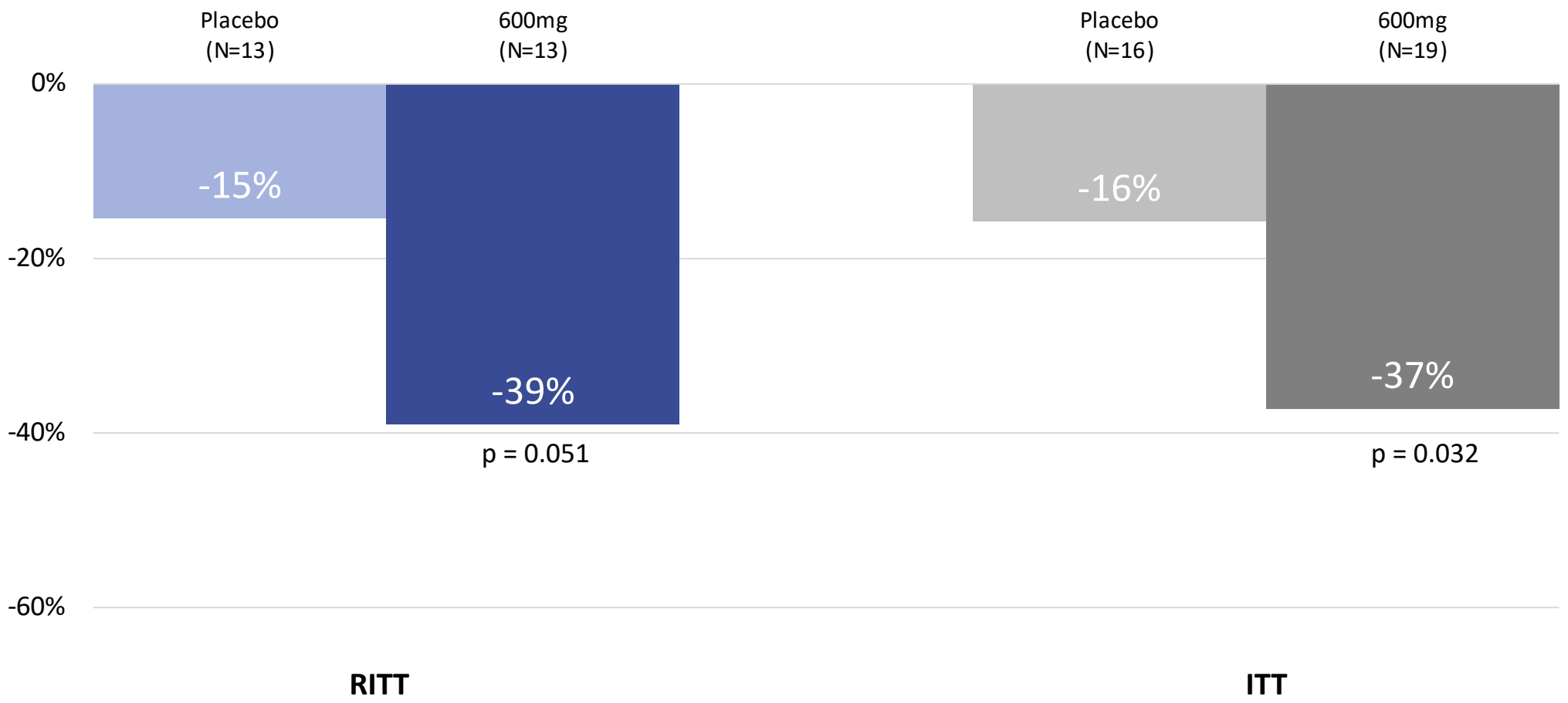
IGA at week 8

Patients achieving IGA 0/1



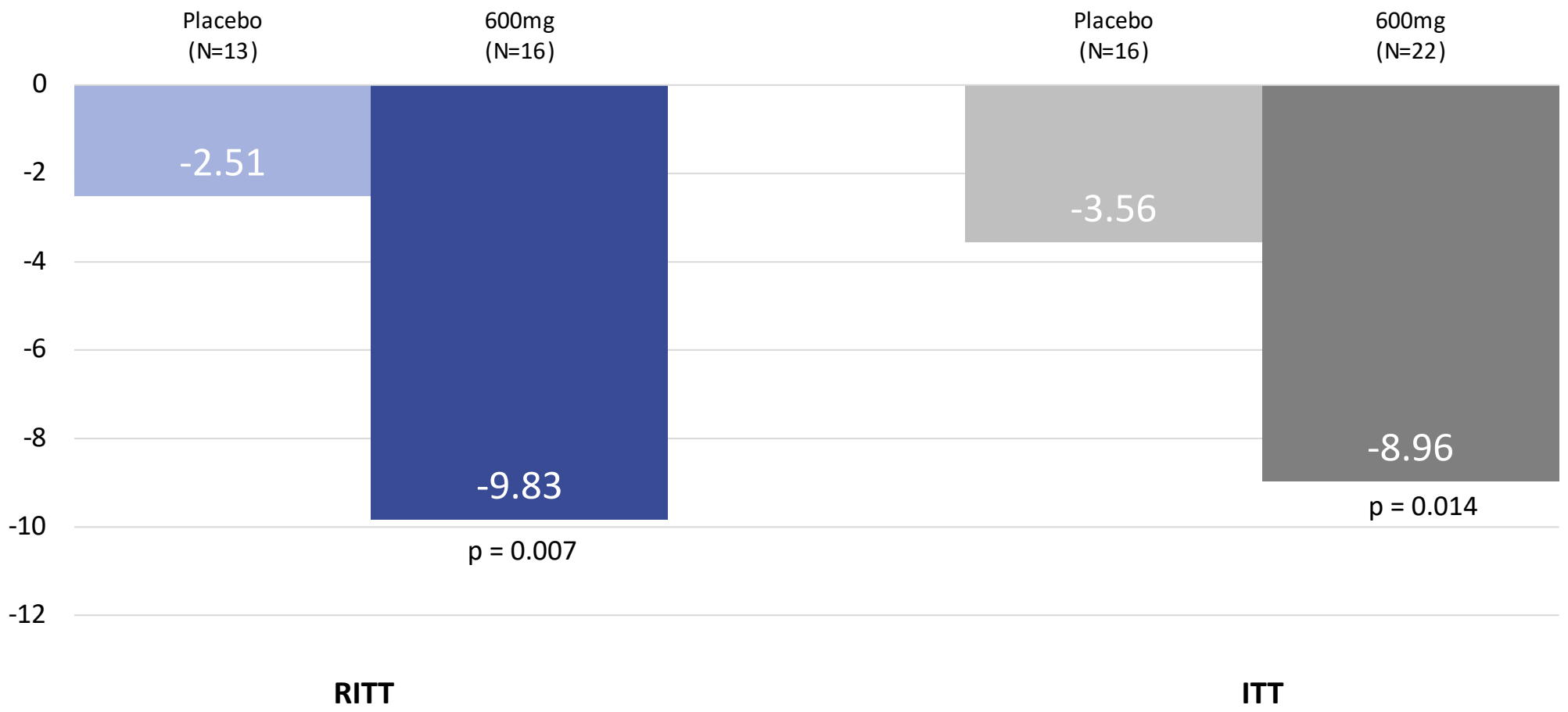
Pruritus at week 8

Mean change in peak P-NRS from baseline



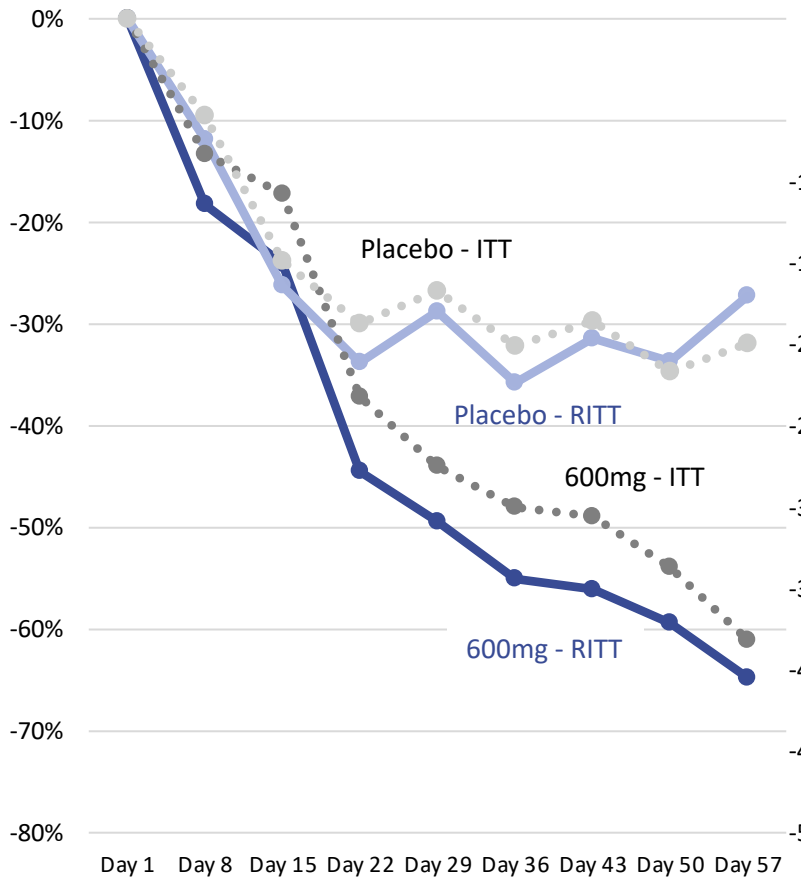
Patient-Oriented Eczema Measure (POEM) at week 8

Mean change in POEM from baseline

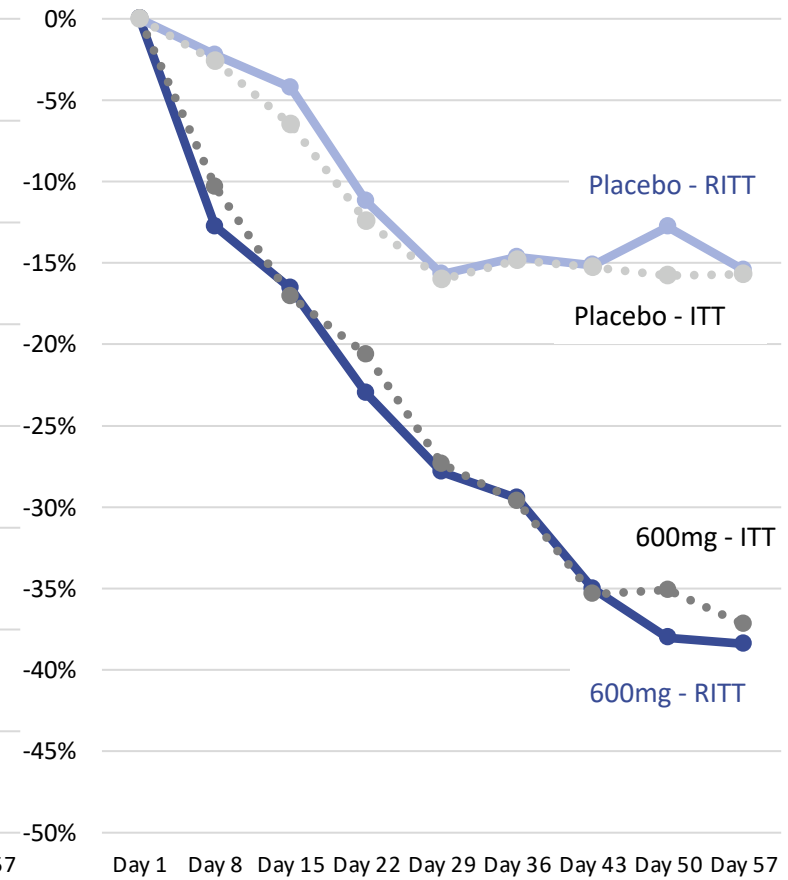


Time course (mean change from baseline)

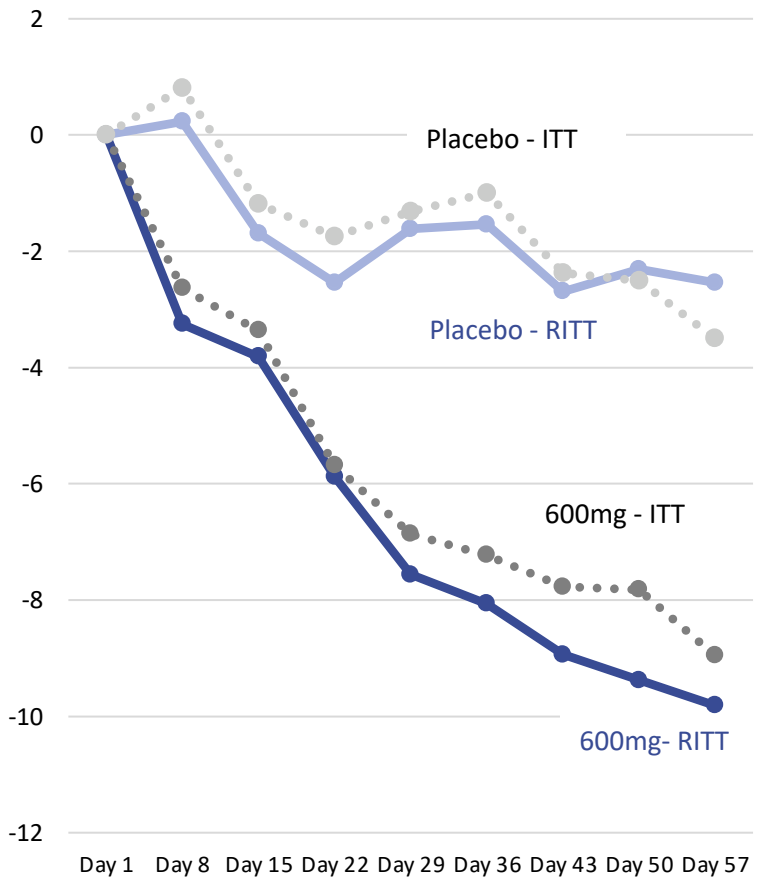
EASI



Peak P-NRS



POEM



ASLAN004 well-tolerated with low incidence of conjunctivitis

Treatment Emergent Adverse Event (TEAE) by category[1]	RITT safety set[2] (N=30)		All patients dosed (N=52)		
	600mg N=16	Placebo N=14	600mg (N=22)	200-600mg (N=35)	Placebo (N=17)
Any	9 (56%)	8 (57%)	12 (55%)	25 (71%)	8 (47%)
Related	6 (38%)	7 (50%)	8 (36%)	19 (54%)	7 (41%)
Moderate/severe	4 (25%)	5 (36%)	6 (27%)	11 (31%)	5 (29%)
Serious adverse event (SAE)	0 (0%)	0 (0%)	0 (0%)	1 (3%)	0 (0%)
Drug-related AEs of interest[3]:					
• Injection site reaction	3 (19%)	2 (14%)	5 (23%)	9 (26%)	2 (12%)
• Conjunctivitis	1 (6%)	0 (0%)	1 (5%)	2 (6%)	0 (0%)

- Conjunctivitis was classified as mild. Patients had prior history of allergy or allergic conjunctivitis.
- Rescue medication use: 3 patients on placebo arm, 1 patient on 600mg arm

1 Safety data cutoff as of September 1, 2021, at which time all patients had completed at least 4 weeks of safety monitoring period.
2 All patients in 600mg and placebo arms that were dosed excluding site X patients
3 Drug-related defined as definitely related, probably related or possibly related

Clear opportunity for improved therapies for AD patients

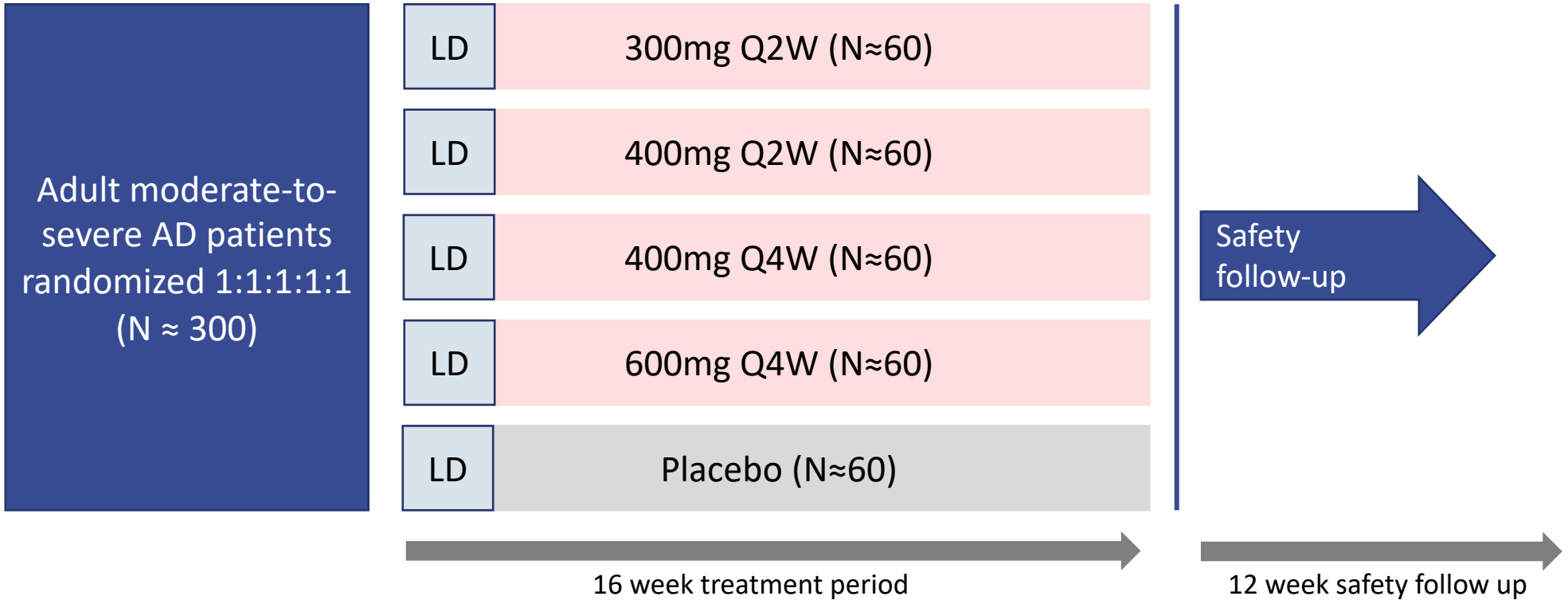
	Categories	*Dupilumab* Ph3[1] (300mg QW)		*Dupilumab* Ph3[1] (300mg Q2W)		*Lebrikizumab* Ph2b[5] (250mg Q2W)		
		SOLO1	SOLO2	SOLO1	SOLO2			
Baseline characteristics	Age (years) – mean	39.3 vs 39.5[2]	37.1 vs 37.4[4]	39.8 vs 39.5[2]	36.9 vs 37.4[4]		38.9 vs 42.2	
	EASI score – mean	33.2 vs 34.5[2]	31.9 vs 33.6[4]	33.0 vs 34.5[2]	31.8 vs 33.6[4]		25.5 vs 28.9	
	Patients with IGA 4	48% vs 49%	47% vs 49%	48% vs 49%	49% vs 49%		29% vs 39%	
	BSA – mean	56% vs 58%[2]	52% vs 54%[4]	55% vs 58%[2]	53% vs 54%[4]		40% vs 47%	
	Pruritus NRS – mean	7.2 vs 7.4[2]	7.5 vs 7.5[4]	7.2 vs 7.4[2]	7.6 vs 7.5[4]		7.6 vs 7.4	
Efficacy	Efficacy at	16 weeks	16 weeks	16 weeks	16 weeks	4 weeks	8 weeks	16 weeks
	% change in EASI	-72% vs -38%	-69% vs -31%	-72% vs -38%	-67% vs -31%	-50% vs -25%[6]	-64% vs -31%[6]	-73% vs -41%[6]
	EASI-50	61% vs 25%	61% vs 22%	69% vs 25%	65% vs 22%	NA	NA	81% vs 46%
	EASI-75	52% vs 15%	48% vs 12%	51% vs 15%	44% vs 12%	30% vs 3%[6]	46% vs 17%[6]	61% vs 24%[6]
	EASI-90	33% vs 8%	31% vs 7%	36% vs 8%	30% vs 7%	14% vs 1%[6]	30% vs 4%[6]	44% vs 11%[6]
	Patients achieving IGA 0/1	37% vs 10%	36% vs 8%	38% vs 10%	36% vs 8%	14% vs 0%[6]	31% vs 5%[6]	45% vs 15%[6]
	% change in Pruritus NRS	-49% vs -26%	-48% vs -15%	-51% vs -26%	-44% vs -15%	-39% vs -25%[6]	-46% vs -22%[6]	-62% vs 7%[6]
Safety and tolerability	Serious AE	1% vs 5%	3% vs 6%	3% vs 5%	2% vs 6%		3% vs 4%	
	Conjunctivitis	8% vs 2%[3]	7% vs 2%[3]	12% vs 2%[3]	7% vs 2%[3]		3% vs 0%[7]	

In Phase 3, over 50% patients achieved EASI-75[8]

Numbers in table refer to drug vs placebo

1 Simpson et al (2016) NEJM 375(24):2335
2 https://clinicaltrials.gov/ct2/show/results/NCT02277743
3 Includes allergic conjunctivitis, conjunctivitis, conjunctivitis bacterial and conjunctivitis viral as reported in the supplementary appendix of the source document
4 https://clinicaltrials.gov/ct2/show/results/NCT02277769
5 Guttman-Yassky et al (2020) JAMA Derm 156:411(unless otherwise stated)
6 Lebrikizumab Program Update, October 17, 2019 by Dermira
7 Includes conjunctivitis, conjunctivitis bacterial and conjunctivitis allergic as reported in source document
8 Press release from Eli Lilly dated Aug 16, 2021

Phase 2b expected to initiate in 4Q 2021

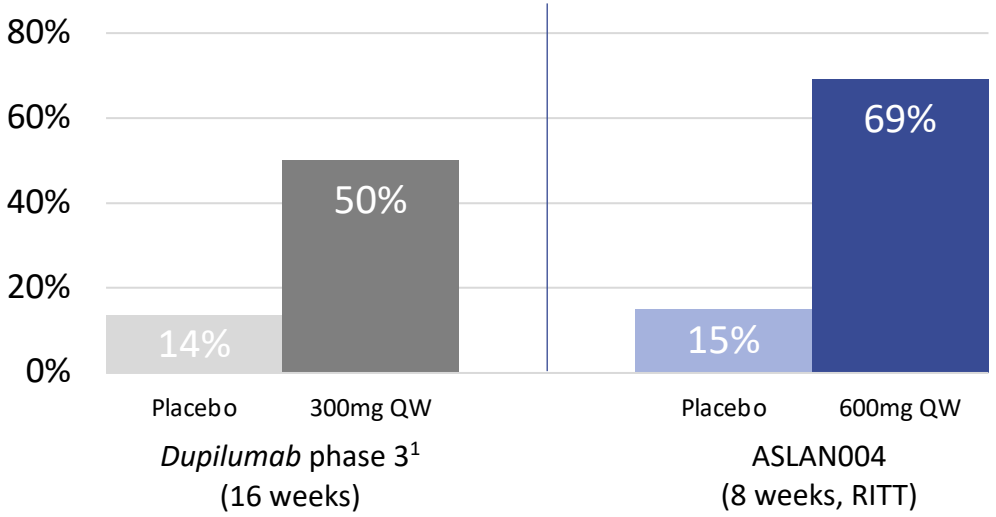


- Loading dose of 600mg for the Q2W dose groups at week 1 and week 2
- Loading dose of 600mg for the Q4W dose groups at week 1, week 2 and week 3

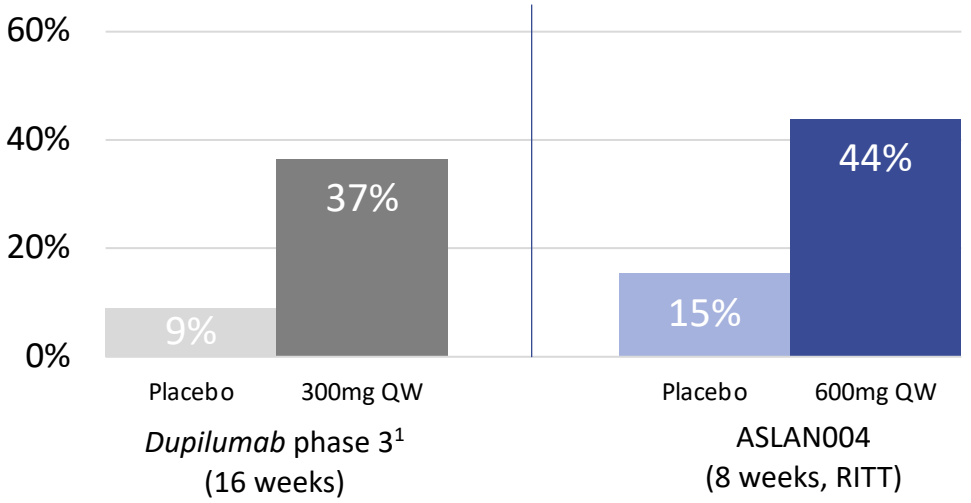
Data conclusively establishes proof of concept for ASLAN004, and supports a potentially differentiated safety and efficacy profile

For illustrative purposes only. Not a head-to-head comparison. Caution should be exercised when comparing data across trials of different products and product candidates. Differences exist between trial designs and patient populations and characteristics. The results across such trials may not have interpretative value on our existing or future results.

EASI-75



Patients achieving IGA 0/1



Next steps

- Phase 2b preparation underway, on track to initiate recruitment in 4Q 2021
- Prioritizing additional indications for potential new studies in 2H 2021

1 Simpson et al (2016) NEJM 375(24):2335. Average number from *dupilumab*'s phase 3 SOLO 1/2 studies

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