Update on Psoriasis and Psoriatic Arthritis

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Faculty Disclosures

Consultant and/or investigator for Amgen, Bristol-Myers Squibb, Abbvie, Dermavant, Eli Lilly, Novartis, Janssen, UCB, Sanofi, Regeneron, Sun Pharma, Biogen, Pfizer and Leo Pharma.

Medical and Scientific Boards of the National Psoriasis Foundation; Executive Committee/Steering Committee—GRAPPA; Board of Directors—IDEOM; President—PPACMAN; Expert Panel—ACR PsA Guidelines, ICER Consultant

Learning Objectives

- Analyze data surrounding current and emerging targeted agents for the management of Psoriatic Disease (PsO and PsA)
- Identify co-morbidities relevant to psoriatic disease management decisions
- Assess current treat-to-target guideline updates and their rationales

Overview of Treatment Approach in 2021

PsA Treatment Options: 2021

Traditional DMARDs
- Methotrexate
- Leflunomide
- Sulfasalazine
- Cyclosporine

Anti-TNFa
- Adalimumab
- Etanercept
- Infliximab
- Golimumab
- Certolizumab

Other targeted therapies
- Secukinumab (IL17A)
- Ixekizumab (IL17A)
- Ustekinumab (IL12/23)
- Tofacitinib (JAK)
- Abatacept (CTLA4-Ig)
- Apremilast (PDE4)
- Guselkumab (IL23)

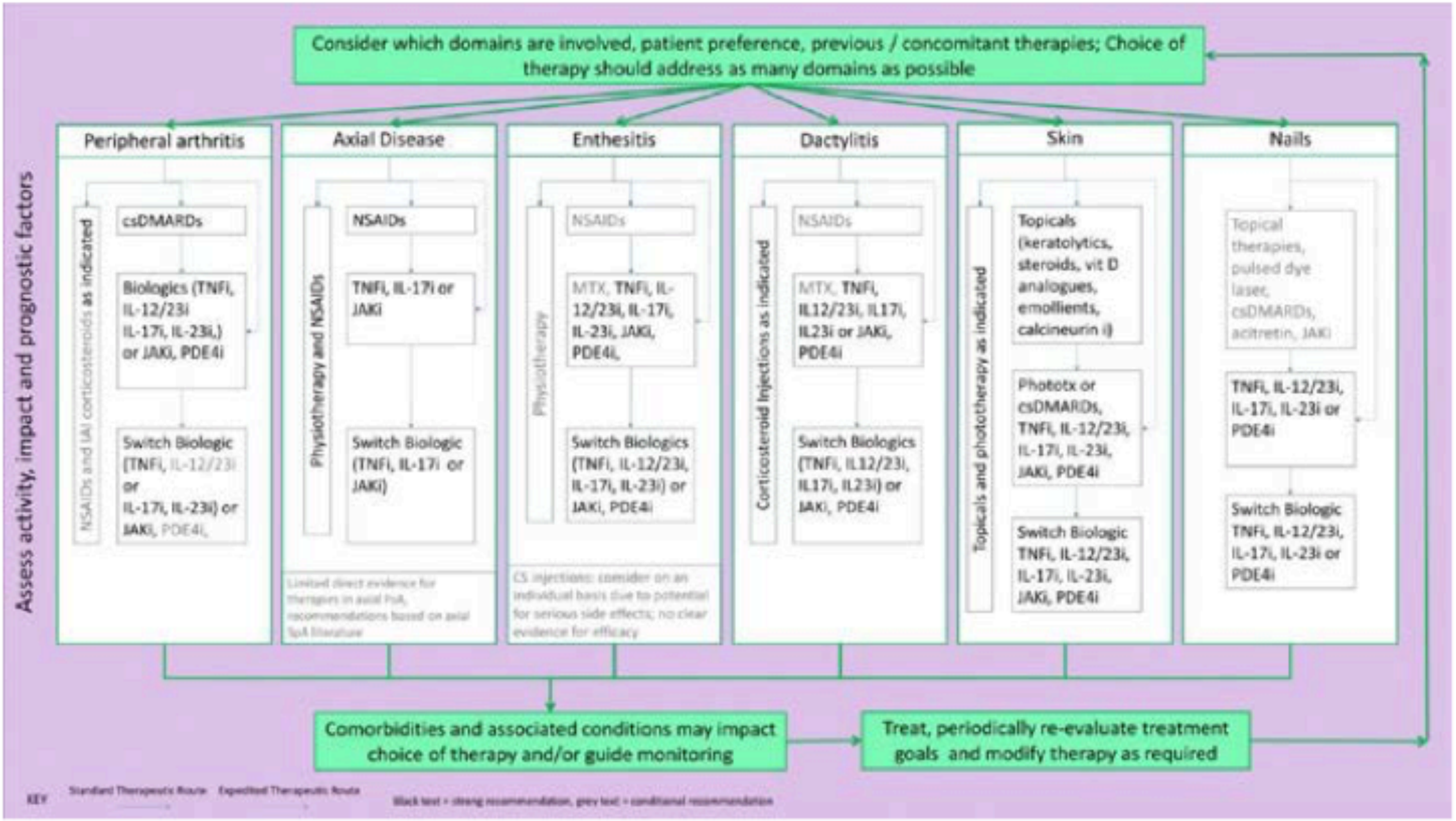
In development
- Bimekizumab (IL17A/F)
- Risankizumab (IL23)
- Brodalumab (IL17R)
- Tildrakizumab (IL23)
- Upadacitinib (JAK)
- Deucravacitinib (TYK2)

Other
- NSAIDs
- Corticosteroid injections
- Corticosteroids (oral)

THE GROUP FOR RESEARCH AND ASSESSMENT OF PSORIASIS AND PSORIATIC ARTHRITIS (GRAPPA) TREATMENT RECOMMENDATIONS 2021

Indication	Strong For	Conditional For	Conditional Against	Strong Against	Insufficient evidence
Peripheral Arthritis DMARD Naïve	csDMARDs, TNFi, PDE4i, IL-12/23i, IL-17i, IL-23i, JAKi	NSAIDs, oral CS, IA CS,	IL-6i,		
Peripheral Arthritis DMARD IR	TNFi, IL-12/23i, IL-17i, IL-23i, JAKi	PDE4i, other csDMARD, NSAIDs, oral CS, IA CS,	IL-6i,		
Peripheral Arthritis bDMARD IR	TNFi, IL-17i, IL-23i, JAKi,	NSAIDs, oral CS, IA CS, IL-12/23i, PDE4i, CTLA-4-Ig	IL-6i,		
Axial arthritis, Biologic Naïve	NSAIDs, Physiotherapy, simple analgesia, TNFi, IL-17i, JAKi	CS SIJ injections, bisphosphonates		cs DMARDs, IL-6i,	IL-12/23i, IL-23i
Axial PsA, Biologic IR	NSAIDs, Physiotherapy, simple analgesia, TNFi, IL-17i, JAKi			csD-MARDs, IL-6i,	IL-12/23i, IL-23i
Enthesitis	TNFi, IL-12/23i, IL-17i, PDE4i, IL-23i, JAKi	NSAIDs, physiotherapy, CS injections, MTX		IL-6i,	Other cs DMARDs
Dactylitis	TNFi IL-12/23i, IL-17i, IL-23i, JAKi, PDE4i	NSAIDs, CS injections, MTX	Other csDMARDs		
Psoriasis	Topicals, phototherapy, csDMARDs, TNFi, IL-12/23i, IL-17i, IL-23i, PDE4i, JAKi	Acitretin			
Nail psoriasis	TNFi, IL12/23i, IL17i, IL23i, PDE4i	Topical CS, tacrolimus and calcipotriol combination or individual therapies, Pulsed dye laser, csDMARDs, acitretin, JAKi			Topical Cyclosporine / Tazarotene, Fumarate, Fumaric Acid Esters, UVA and UVB Phototherapy, Alitretinoin
IBD	TNFi (not ETN), IL-12/23i, JAKi			IL-17i	
Uveitis	TNFi (not ETN)				

EULAR 2021 Abstract OP0229



EULAR 2021 Abstract OP0229

Treatment by Domains of Disease

Mechanism	Peripheral Arthritis	Skin and Nail Disease	Axial Disease*	Dactylitis	Enthesitis	GI / IBD
NSAIDs	✓		✓			
Intra-articular steroids	✓					
Topicals		✓				
Psoralen UVA/UVB		✓				
DMARDS (MTX, CsA, SSZ, Lef)	✓	✓				
Apremilast	+	+		✓	✓	
Anti-TNF	+++	++	✓	✓	✓	✓
Anti-IL12/23	+	++	X	✓	✓	✓
Anti-IL23 (p19)	++	+++	?	✓	✓	?
Anti-IL17	+++	+++	✓[3]	✓	✓	X
JAK inhibitors	++/+++	+/++	✓[1]	✓	✓	✓[2]
Tyk2 inhibitor		++				

* Based on data from ankylosing spondylitis trials (used as surrogate for Axial PsA)
1 Based on tofacitinib ankylosing spondylitis data; not FDA approved; selectivity may impact other JAKs
2 Ulcerative colitis only, not crohn's
3 Dedicated Axial PsA study (MAXIMISE)

Prepared by Merola JF

Comorbidities/Co-Prevalent Disease in Psoriatic Disease

Psoriasis/PsA

Uveitis

Renal disease

Hepatosteatosis

COPD

Sleep apnea

Depression

Alcoholism

Smoking

Metabolic syndrome

Diabetes

Dyslipidemia

Obesity

Peripheral vascular disease

Myocardial infarction

Stroke

Cardiovascular death

Gout

COPD = chronic obstructive pulmonary disease.

Jamnitski A, et al. *Ann Rheum Dis*. 2013;72(2):211-216. Yeung H, et al. *JAMA Dermatol*. 2013;149(10):1173-1179.

Considerations for Treatment of Patients with PsA and Concomitant Comorbidities

Comorbidity	NSAIDs	Glucocorticoids	HCQ	Sulfasalazine	Methotrexate	Leflunomide	Cyclosporine	Etanercept	Adalimumab	Infliximab	Certolizumab	Golimumab	Ustekinumab	Apremilast	Anti-IL-17	JAK inhibitors
CV disease	C	?											?			C
Congestive heart failure	C	C						C	C	C	C	C	?			
Obesity					C											
Metabolic syndrome		C			C											C
Diabetes		C			C											
Ulcerative colitis	?			A			OL		A	A		A			C	A
Crohn's disease	?			A	OL				A	A	A				C	
Uveitis		P†						?	P	P					?	
Osteoporosis		C														
Malignancy								C	C	C	C	C	?			C
Fatty liver disease	C			C	C	C										
Chronic kidney disease	C				C	?	SM									
Depression														?		
Chronic hepatitis B*	C				C	C		SM	SM	SM	SM	SM	?			
Chronic hepatitis C*	C				C	C		?/P	?	?	?	?	?			
HIV								SM	SM	SM	SM	SM	?			

A	Approved for primary therapy
C	Reason for caution
OL	Off-label use
P	Preferred therapy
SM	Requires special monitoring
?	Data insufficient, concerns raised

*When treating patients with chronic infections that can affect the liver, consider consultation with providers having expertise in the area. †Corticosteroids used as preferred therapy for uveitis are most commonly given as topical and/or intraocular injections (IAIs) in preference to oral steroids.
NSAIDs = nonsteroidal anti-inflammatory drugs; HCQ = hydroxychloroquine; CV = cardiovascular; HIV = human immunodeficiency virus.
Adapted from Coates LC, et al. *Arthritis Rheumatol*. 2016;68(5):1060-1071.

Efficacy Data Considerations across Domains of Disease: PsA

EDITORIAL

SEAM-PsA: Seems Like Methotrexate Works in Psoriatic Arthritis?

Joseph F. Merola[1] and Alexis Ogdie[2]

In this issue of *Arthritis & Rheumatology*, Mease and colleagues report the results of an important trial, the SEAM-PsA trial, which evaluates the efficacy of methotrexate monotherapy, etanercept monotherapy, or the combination of methotrexate and etanercept in early psoriatic arthritis (PsA) (1). The primary end point in this study was achievement of the American College of Rheumatology 20% improvement (ACR20) response criteria, and the Minimal Disease Activity (MDA) response was a key secondary/coprimary end point. MDA requires achievement of 5 of 7 points of low disease activity, including swollen and tender joint counts, psoriasis, enthesitis, patient's global assessment of psoriasis, patient's pain assessment, and health function scores on the Health Assessment Questionnaire. Among patients in the etanercept monotherapy arm, 61% achieved an ACR20 response and 36% achieved an MDA response. This was very similar to the ACR20 and MDA response rates in the combination therapy arm (65% and 36% of patients, respectively). Both etanercept monotherapy and etanercept plus methotrexate combination therapy were significantly more efficacious than methotrexate monotherapy benefit in the treatment-naive patient with PsA, although without comparison against a placebo control, this is not possible to confirm definitively.

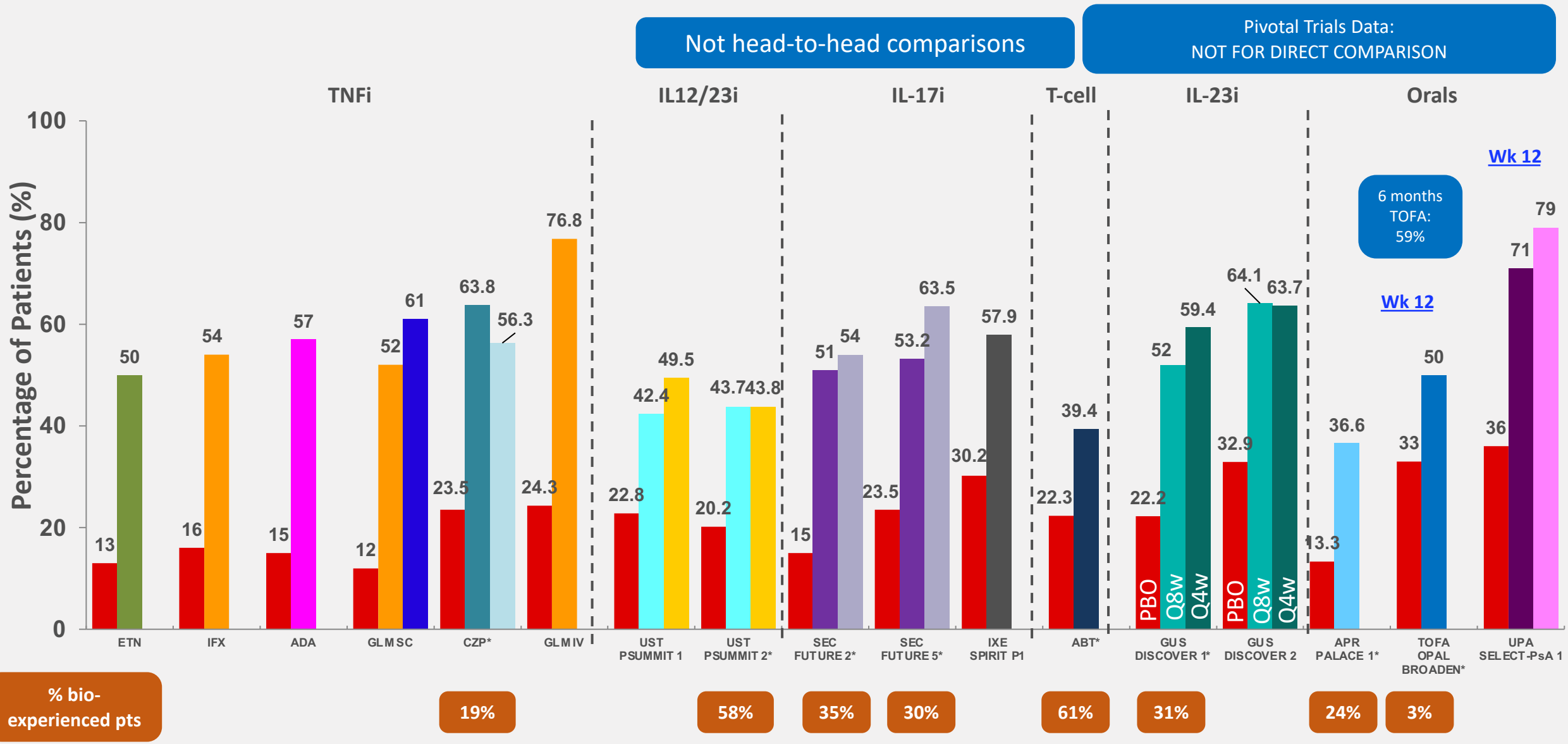
Methotrexate in PsA: a mixed history

While the benefits of methotrexate alone and in combination with tumor necrosis factor inhibitor (TNFi) therapy have been clearly demonstrated in rheumatoid arthritis (RA) (2,3), the same cannot be said for PsA (4). Studies of methotrexate monotherapy in PsA have been largely underwhelming (5–7) or at least mixed (8–11).

The Methotrexate in Psoriatic Arthritis (MIPA) study, a key placebo-controlled trial of methotrexate published in 2012, found no significant advantage of methotrexate over placebo based on the ACR20 response (5). In contrast, the Tight Control in PsA (TICOPA) study, a treat-to-target study in the United Kingdom that used methotrexate as a backbone therapy (at higher doses than were used in the MIPA study), found benefits with oral disease-

Merola JF, et al. *Arthritis Rheumatol*. 2019;71(7):1027-1029.

PsA Comparison - ACR20 Response at Week 24: Overall Study Population



*Trial consists of a mixed population, including bDMARD naive and bDMARD experienced patients.

Anti-TNF Therapies in PsA: ACR and PASI Responses

Trial	n	ACR20 %		ACR50 %		ACR70 %		PASI75 %[X]	
		Rx	P	Rx	P	Rx	P	Rx	P
Adalimumab 2/3[X]	315	58	14	36	4	20	1	59	1
Certolizumab 3[+]	409	58	24	36	11	25	3	62	15
Etanercept 2*	60	74	14	48	5	13	0	26*	0*
Etanercept 3*	205	59	15	38	4	11	0	23	3
Golimumab[X]	405	52	8	32	3.5	18	0.9	61	1
Infliximab 2[+]	100	69	8	49	9	29	0	68	0
Infliximab 3**	200	58	11	36	3	15	1	60	1

60 40 20

*12 weeks. **14 weeks. [+]16 weeks. [X]24 weeks.

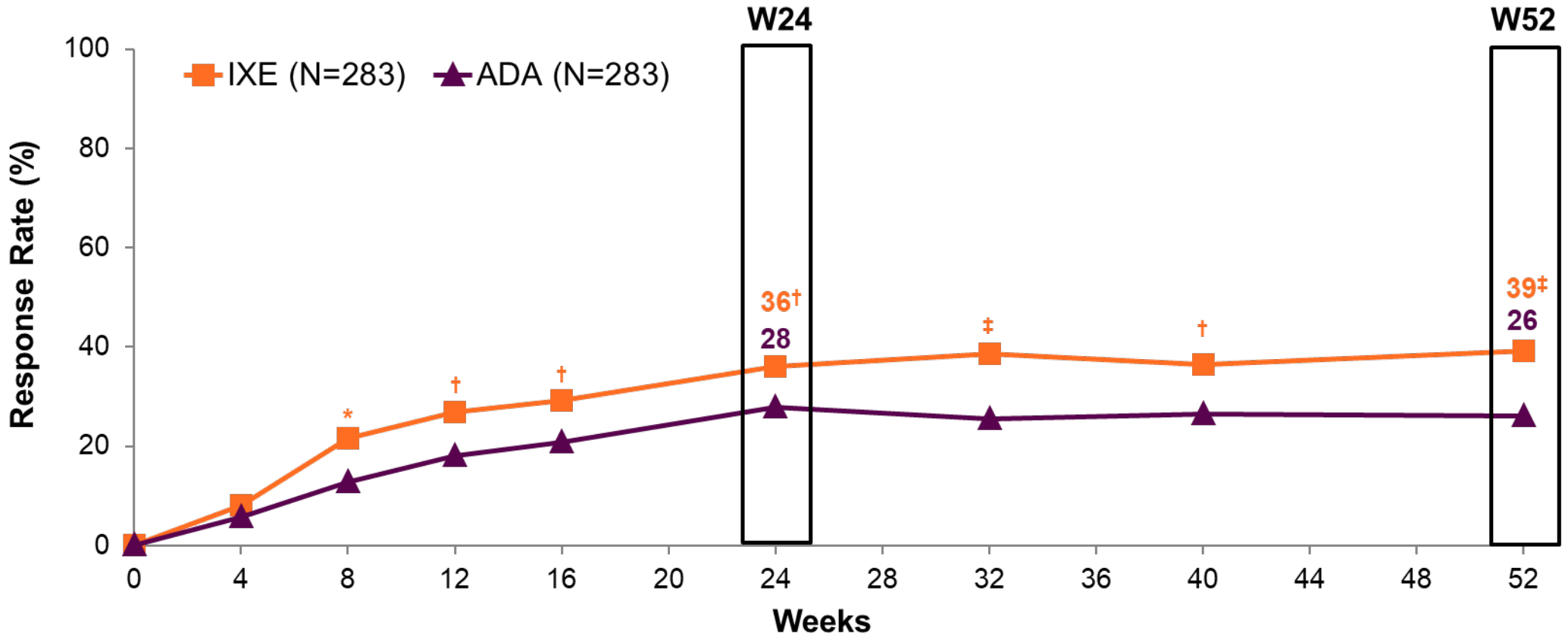
Mease PJ, et al. *Lancet*. 2000;356(9227):385-390. Antoni CE, et al. *Arthritis Rheum*. 2005;52(4):1227-1236. Mease PJ, et al. *Arthritis Rheum*. 2004;50(7):2264-2272. Antoni CE, et al. *Ann Rheum Dis*. 2005;64(8):1150-1157. Mease PJ, et al. *Arthritis Rheum*. 2005;52(10):3279-3289. Kavanaugh A, et al. *Ann Rheum Dis*. 2007;66(4):498-505. Mease PJ, et al. *Ann Rheum Dis*. 2014;73(1):48-55.

Head to Head in PsA

TNF vs. IL17

SPIRIT H2H: Ixekizumab vs. Adalimumab

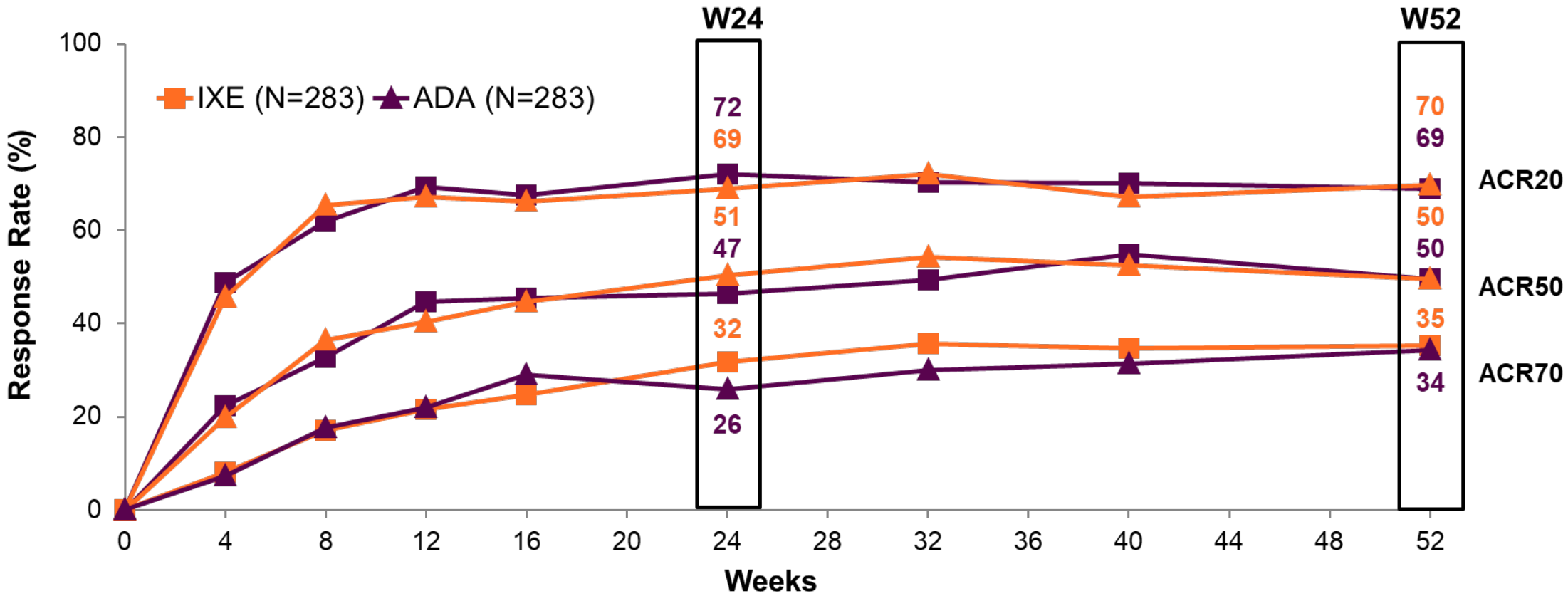
Percentage of Patients Achieving Simultaneous ACR50 and PASI 100 by Treatment Week, NRI



*p<.01 vs. ADA; †p<.05 vs. ADA; ‡p<.001 vs. ADA.
NRI was used for imputation of all missing data, including drop-outs as non-responders.

Mease PJ, et al. *Ann Rheum Dis.* 2020;79(1):123-131

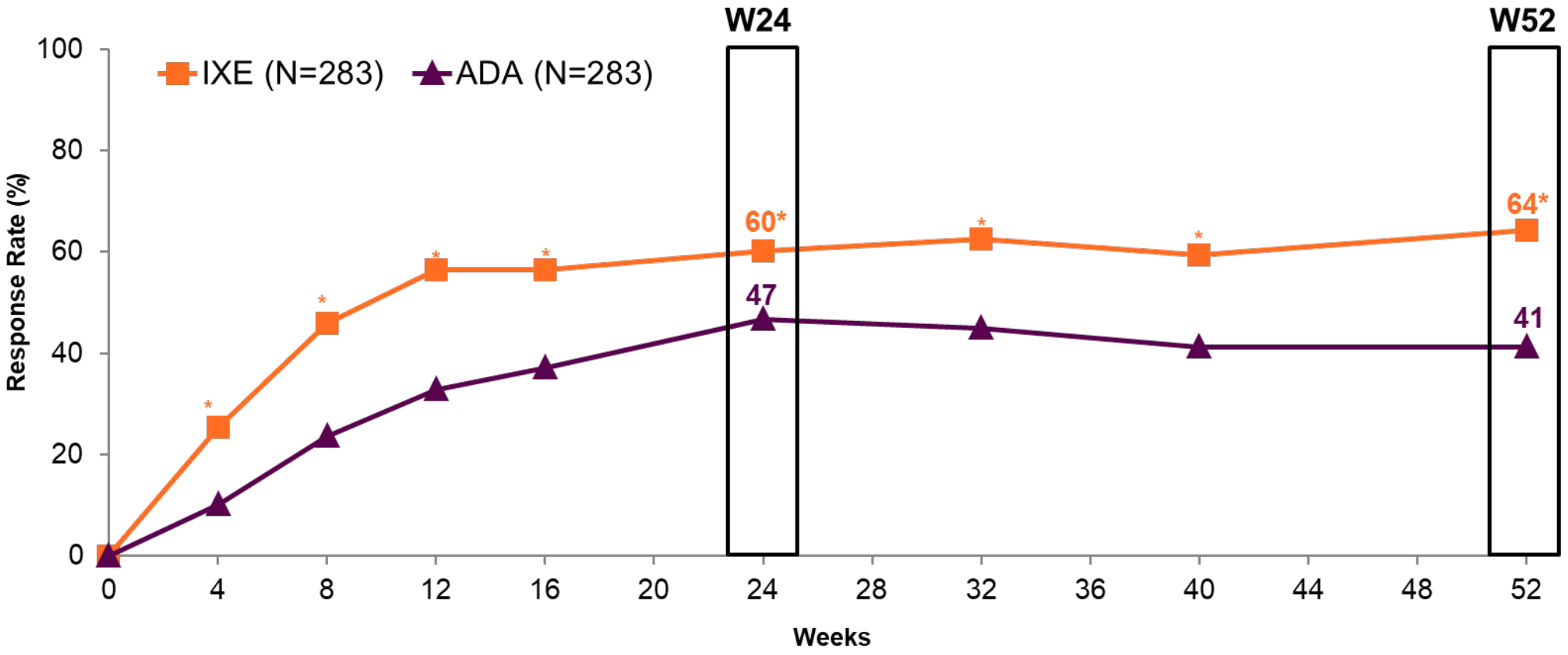
ACR20/50/70 Response by Treatment Week, NRI



Note: NRI was used for imputation of all missing data, including drop-outs as non-responders.

Mease PJ, et al. *Ann Rheum Dis.* 2020;79(1):123-131

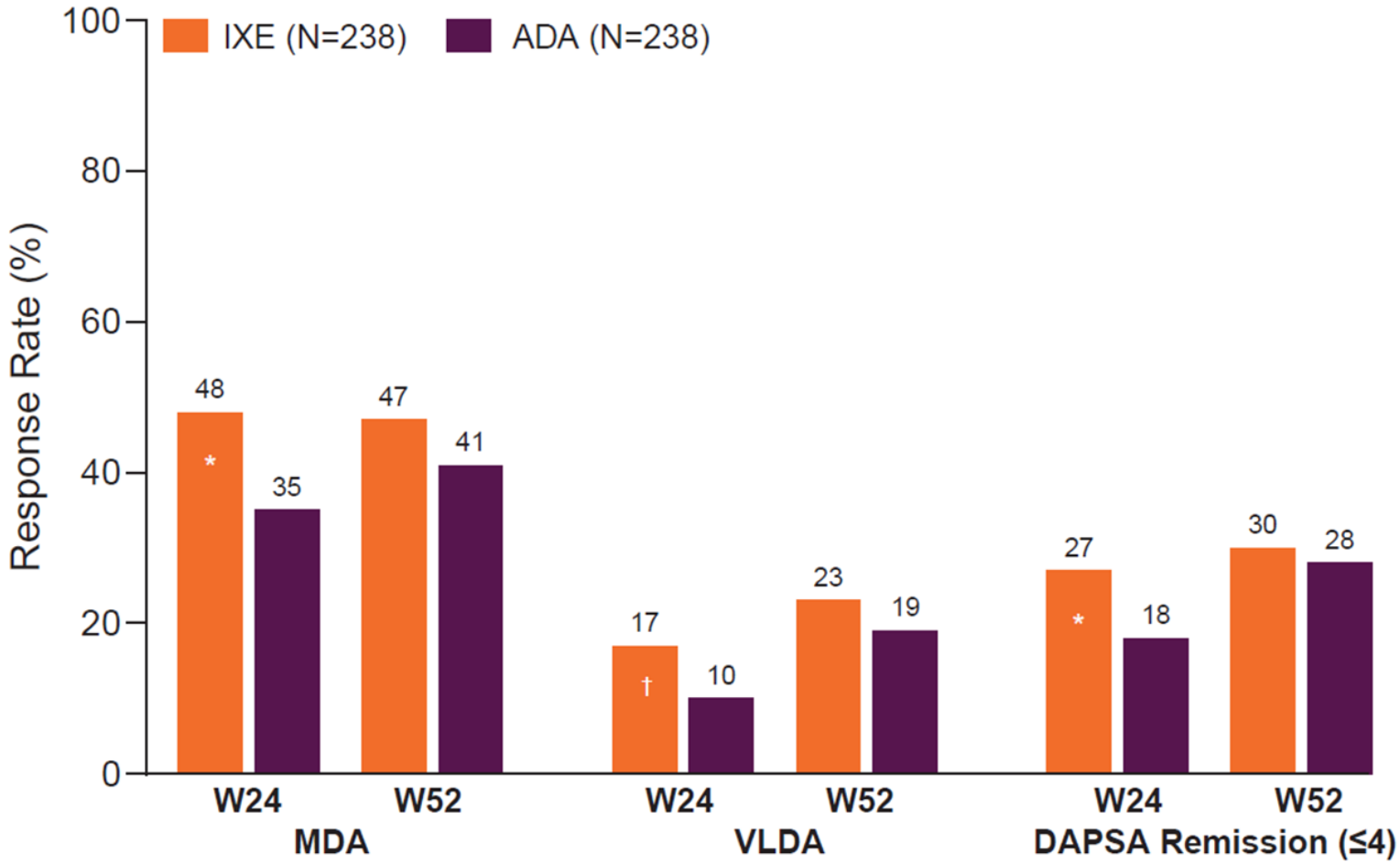
PASI 100 Response by Treatment Week, NRI



*p≤.001 vs. ADA.
Note: NRI was used for imputation of all missing data, including drop-outs as non-responders.

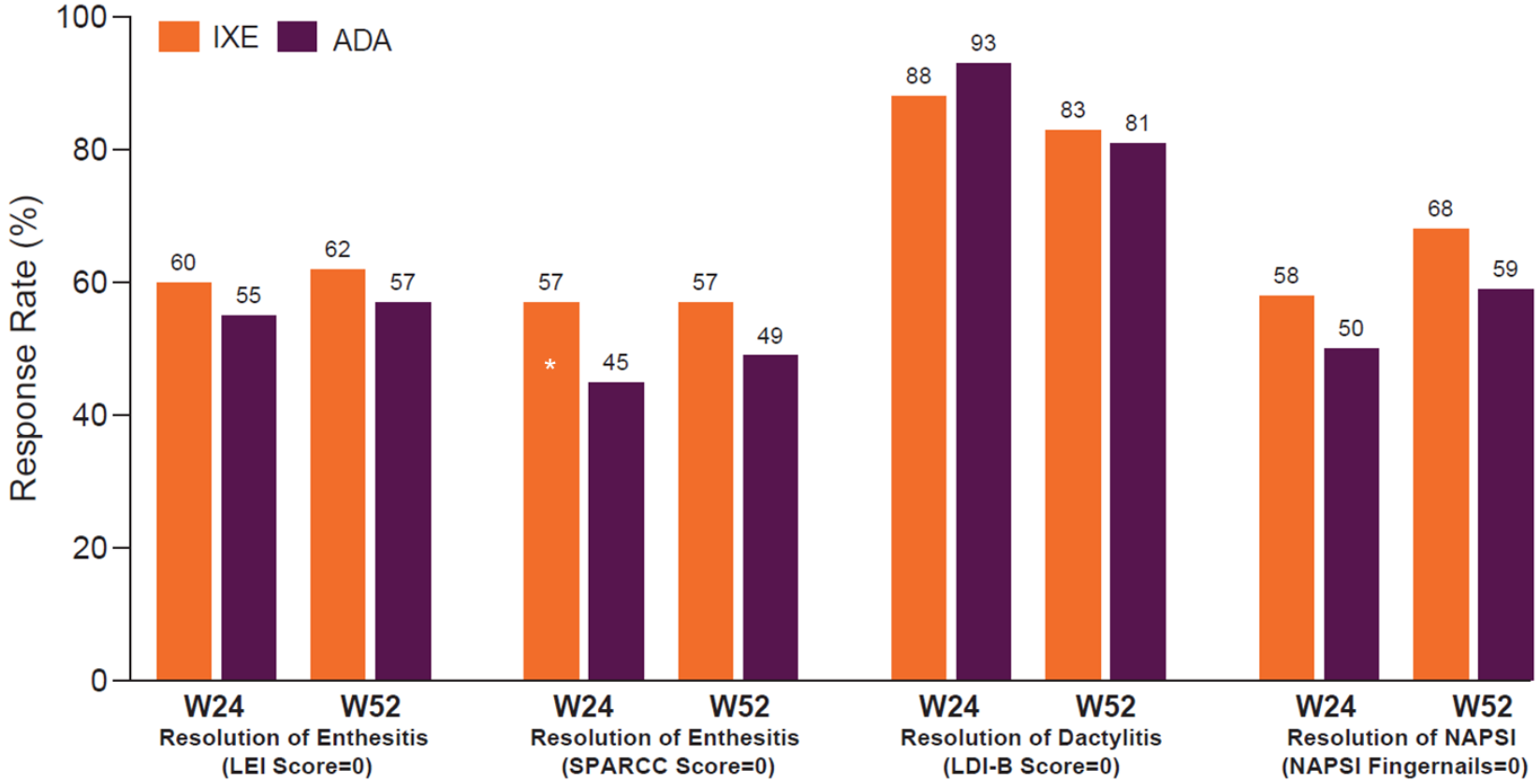
Mease PJ, et al. *Ann Rheum Dis.* 2020;79(1):123-131

Composite Low Disease Activity/Remission Endpoints at Week 24 and Week 52, NRI



****P*<.05 vs ADA.**
NRI was used for imputation of all missing data, including drop-outs as non-responders.
MDA = minimal disease activity; VLDA = very low disease activity.
Mease PJ, et al. *Ann Rheum Dis*. 2020;79(1):123-131.

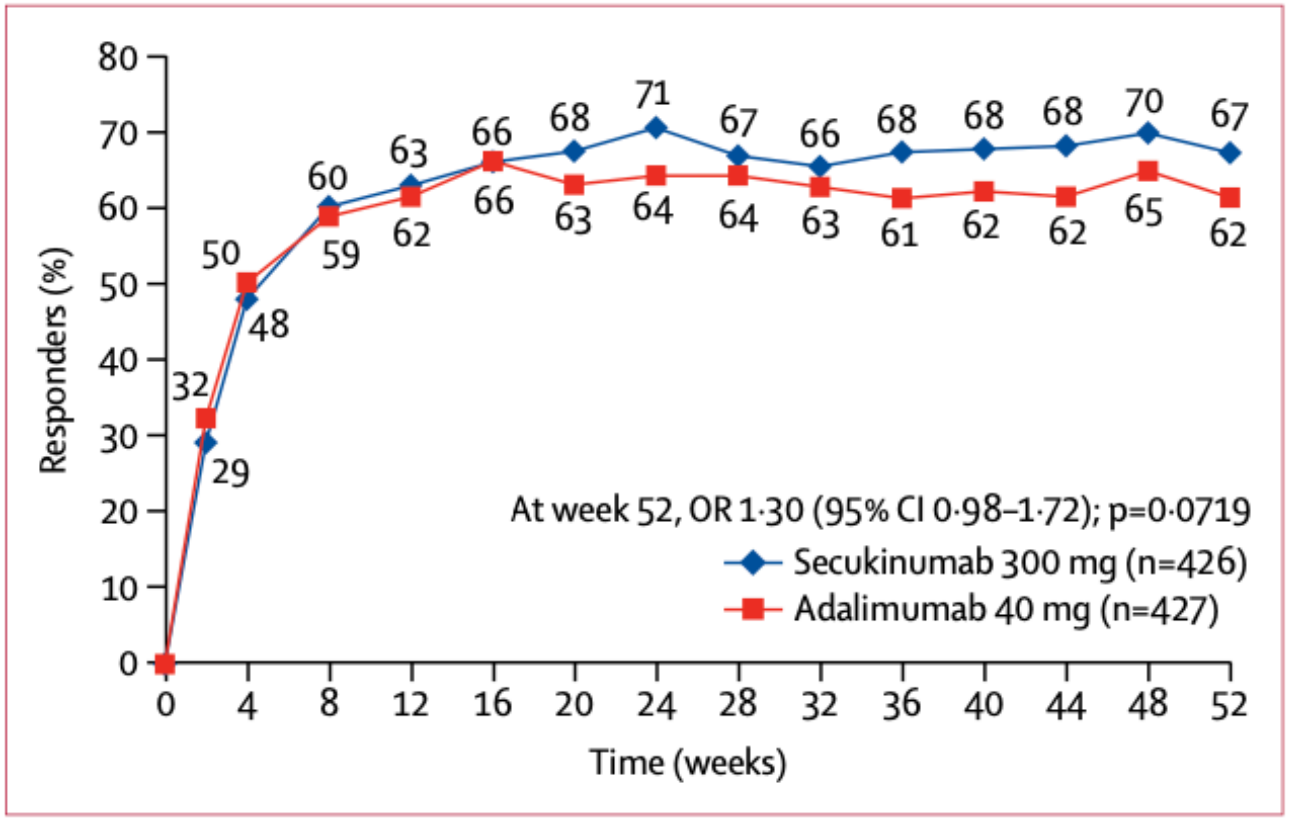
Enthesitis/Dactylitis Endpoints at Week 24 and Week 52



****P*≤.05 vs ADA.**
NRI was used for imputation of all missing data, including drop-outs as non-responders.
LEI >0, IXE (N=159), ADA (N=147); SPARCC Enthesitis >0, IXE (N=189), ADA (N=171); LDI-B >0, IXE (N=42), ADA (N=58); NAPSI, IXE (N=191), ADA (N=171).
LEI = Leeds Enthesitis Index; SPARCC = Spondyloarthritis Research Consortium of Canada; LDI-B = Leeds Dactylitis Index-Basic; NAPSI = Nail Psoriasis Severity Index.
Mease PJ, et al. *Ann Rheum Dis*. 2020;79(1):123-131.

Secukinumab versus adalimumab for treatment of active psoriatic arthritis (EXCEED):

a double-blind, parallel-group, randomised, active-controlled, phase 3b trial

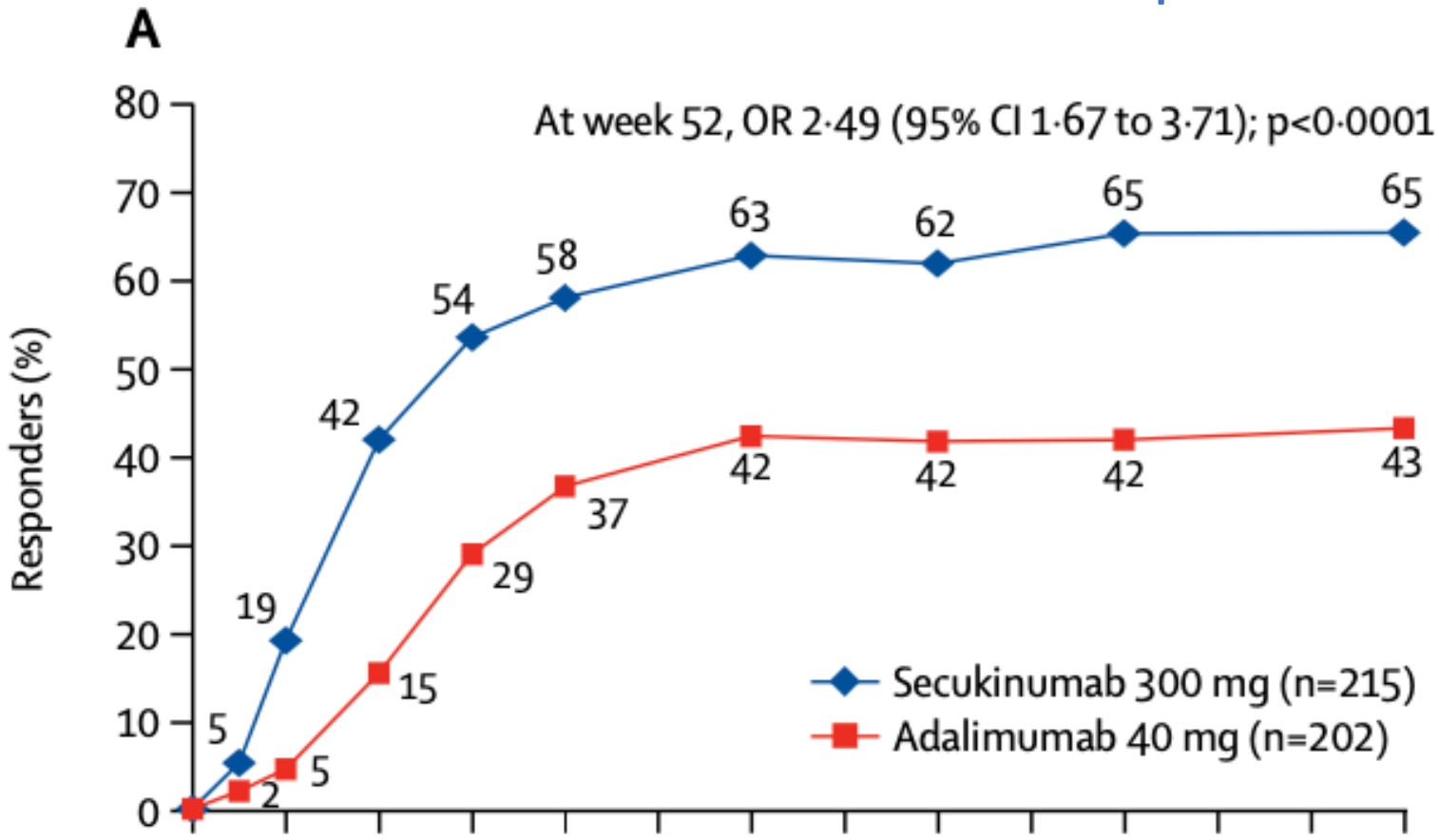


McInnes et al. Lancet (395) 1496. May 9, 2020

	Secukinumab 300 mg	Adalimumab 40 mg	Odds ratio (95% CI)	p value (unadjusted)*
Primary endpoint				
ACR20	67% (426)	62% (427)	1·30 (0·98 to 1·72)	0·0719
Prespecified sensitivity analysis using non-responder imputation				
ACR20	67% (426)	59% (427)	1·38 (1·04 to 1·83)	0·0239
Key secondary endpoints				
PASI 90	65% (215)	43% (202)	2·49 (1·67 to 3·71)	<0·0001
ACR50	49% (426)	45% (427)	1·18 (0·90 to 1·55)	0·2251
HAQ-DI score, change from baseline, mean (SE) [n]	−0·58 (0·03) [363]	−0·56 (0·03) [318]	−0·02† (−0·10 to 0·05)	0·5465
Resolution of enthesitis (based on Leeds Enthesitis Index)	61% (234)	54% (264)	1·30 (0·91 to 1·87)	0·1498
Combined endpoint				
ACR50 plus PASI100‡	31% (215)	19% (202)	1·85 (1·17 to 2·92)	0·0087

McInnes et al. Lancet (395) 1496. May 9, 2020

EXCEED: PASI 90 response

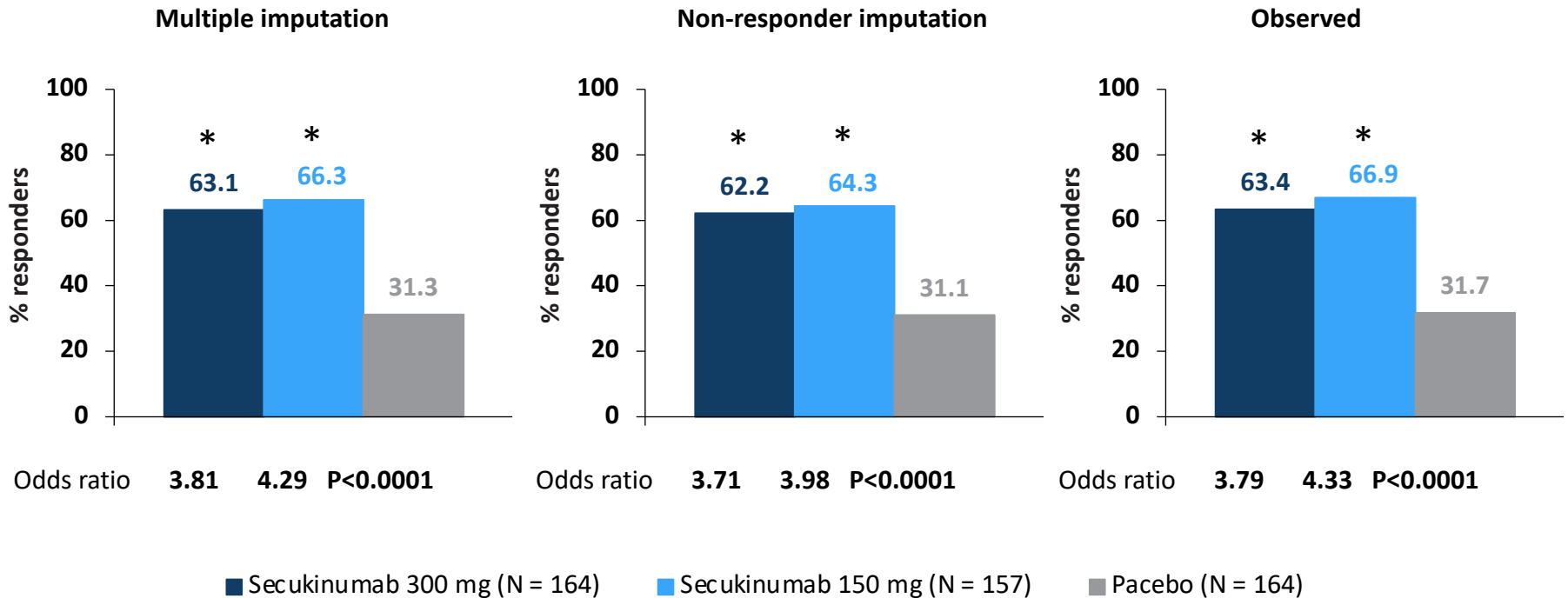


Skin endpoints§				
PASI 75	79% (215)	61% (202)	2·33 (1·50 to 3·60)	0·0002
PASI 100	46% (215)	30% (202)	2·01 (1·34 to 3·03)	0·0007
Absolute PASI score ≤3	79% (215)	65% (202)	2·06 (1·32 to 3·22)	0·0015

McInnes et al. Lancet (395) 1496. May 9, 2020

Axial PsA:

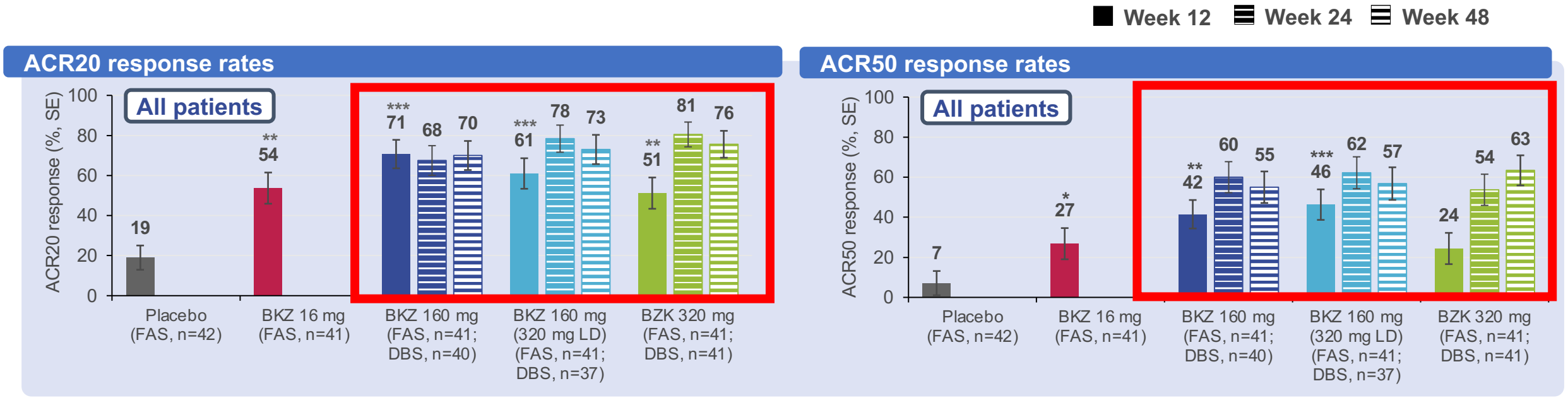
Statistically significant improvement in ASAS20 responses with secukinumab 300 and 150mg vs. placebo



*P <0.001 vs placebo (logistic regression)
N = number of patient randomised
Baraliakos X, et al. Presented at: EULAR 2019. June 14, 2019; Madrid, Spain; Abstract OP0235.

IL17 A/F inhibition: Added value?

Bimekizumab BE ACTIVE: ACR20 and ACR50 response rates achieved at Week 12 continued to increase to Week 24 and were sustained up to Week 48 (NRI)

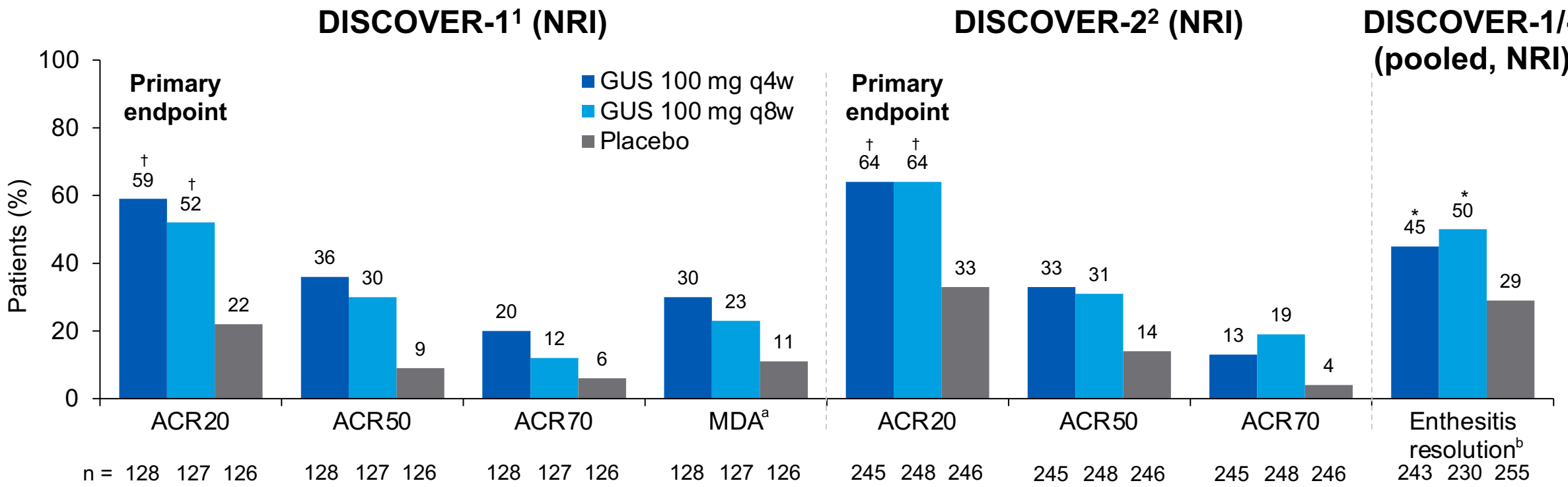


FAS: Week 12; DBS: Week 48 (NRI). *nominal p<0.05 vs placebo; **nominal p<0.01 vs placebo; ***nominal p<0.001 vs placebo. The p values were derived at Week 12 from a logistic regression model including fixed effects for treatment, geographic region and prior TNF inhibitor exposure. Per protocol, p values were not calculated for subgroup analyses (ACR20/50 response rates in the TNFi naïve population). The following data are not presented: placebo → BKZ 160 mg, placebo → BKZ 320 mg, BKZ 16 mg → BKZ 160 mg, BKZ 16 mg → BKZ 320 mg (Weeks 24 and 48)
ACRXX, XX% improvement from baseline in the American College of Rheumatology criteria.
BKZ = bimekizumab; DBS = dose-blind set; FAS = full analysis set; NRI = non-responder imputation; SE = standard error

NOT FDA Approved for PsA

Anti-IL23 (p19) in PsA

DISCOVER-1 and -2: ACR responses, enthesitis resolution, and MDA after 24 weeks of guselkumab for patients with active psoriatic arthritis



- **Radiographic progression** (as measured by m-vdH-S) at Week 24 was 0.29 (P=0.01) with GUS 100 mg q4w, 0.52 (P=0.07) with GUS 100 q8w, and 0.95 with placebo[2]

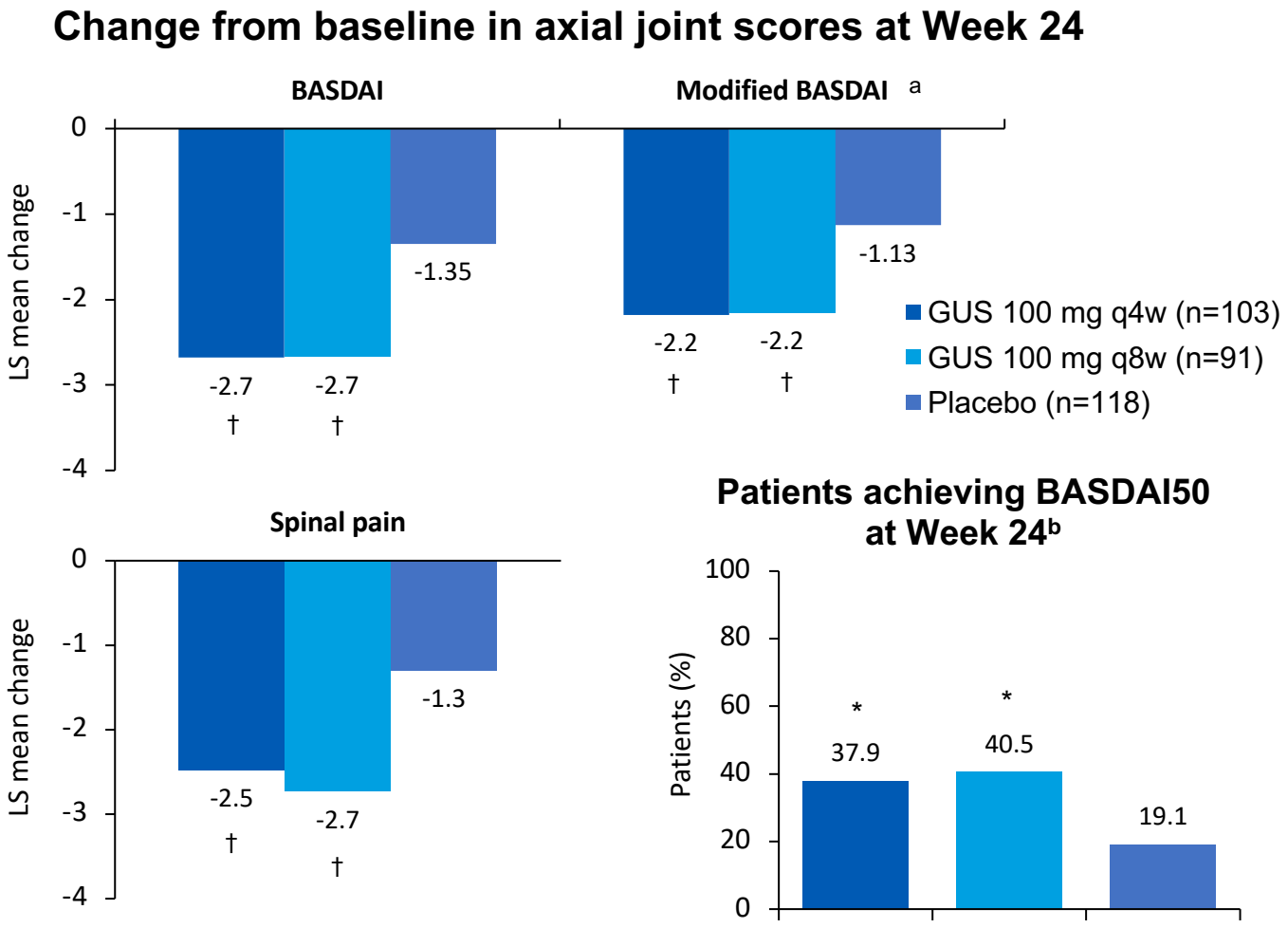
*P<0.05, †P<0.0001 vs placebo (controlled for multiplicity)
[a]MDA (minimal disease activity) considered fulfilment of 5 of the following 7 criteria: Tender joint count ≤1, swollen joint count ≤1, PASI ≤1, patient pain VAS ≤15, patient global disease activity VAS ≤20, HAQ-DI ≤0.5, tender entheseal points ≤1
[b]Enthesitis measured by Leeds Enthesitis Index

1. Deodhar A, et al. Lancet 2020;395:1115–25; 2. Mease PJ, et al. Lancet 2020;395:1126–36

DISCOVER-1
- ≥3 swollen joints, ≥3 tender joints, CRP ≥0.3 mg/dL
- Anti-TNF experienced included

DISCOVER-2
- ≥5 swollen joints, ≥5 tender joints, CRP ≥0.6 mg/dL
- Biologic naïve

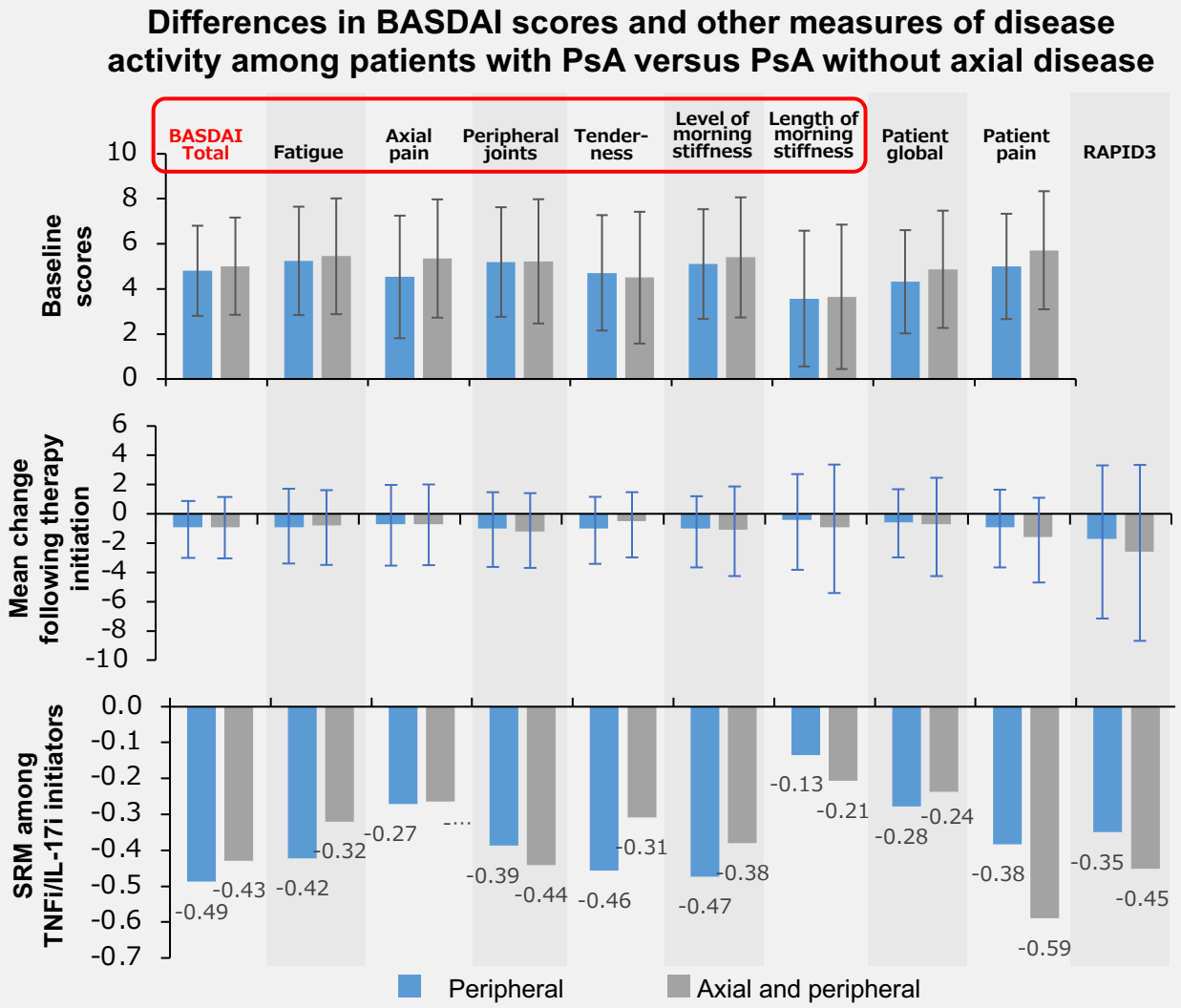
DISCOVER-1 and -2: Effect of guselkumab on **axial outcome measures** after 24 weeks among patients with active PsA with axial involvement



- Investigators confirmed sacroiliitis either by documented prior imaging or pelvic radiograph at screening
- Axial-specific studies are needed to definitively answer this question

- *P<0.01 (unadjusted), †P<0.001 (unadjusted) vs placebo
- BASDAI, Bath Ankylosing Spondylitis Disease Activity Index. [a]Excludes question 3 of the BASDAI (How would you describe the overall level of pain/swelling in joints other than neck, back, hips you have had?); [b]Among patients with BASDAI >0 at baseline, n=95, 84, 110 for GUS q4w, q8w, and placebo, respectively
- Helliwell P, et al. EULAR 2020, OP0054

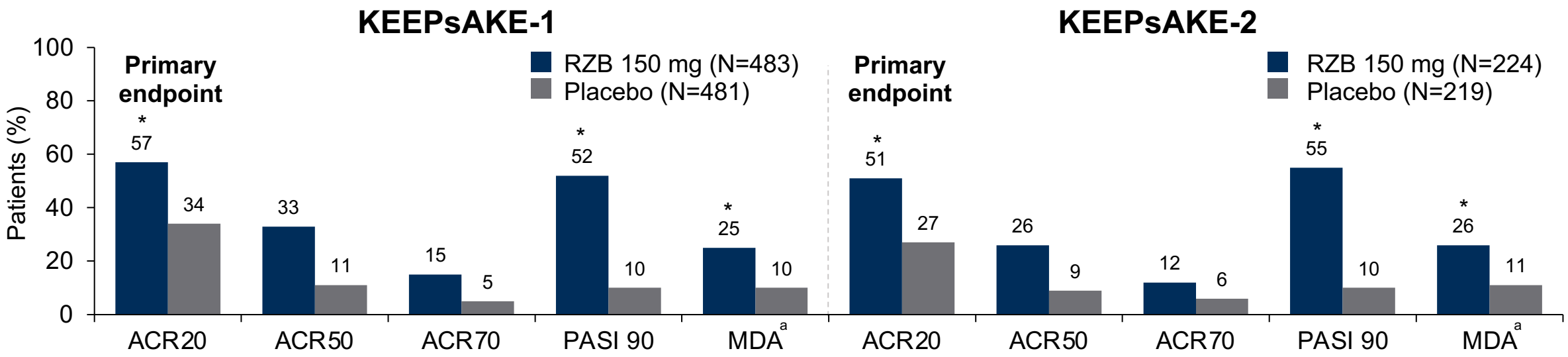
Use of the BASDAI in patients with PsA with and without axial disease



ASAS, Assessment of SpondyloArthritis International Society; BASDAI, Bath Ankylosing Spondylitis Index; RAPID3, Routine Assessment of Patient Index Data; SRM, standardized response mean

Reddy SM, et al. ACR Convergence 2020, #344

KEEPsAKE-1 and -2: Key outcomes after 24 weeks of risankizumab among adults with active psoriatic arthritis



- Significant improvements in physical function with risankizumab were reported vs placebo:
  - −0.31 vs −0.11 for KEEPsAKE-1 and −0.22 vs −0.05 for KEEPsAKE-2
- In KEEPsAKE-1, **radiographic progression** (as measured by PsA Sharp/van der Heijde Score) at Week 24 was 0.23 in the risankizumab group and 0.32 in the placebo group (P=0.496)

KEEPsAKE-1
- Inadequate response or intolerance to ≥1 DMARD

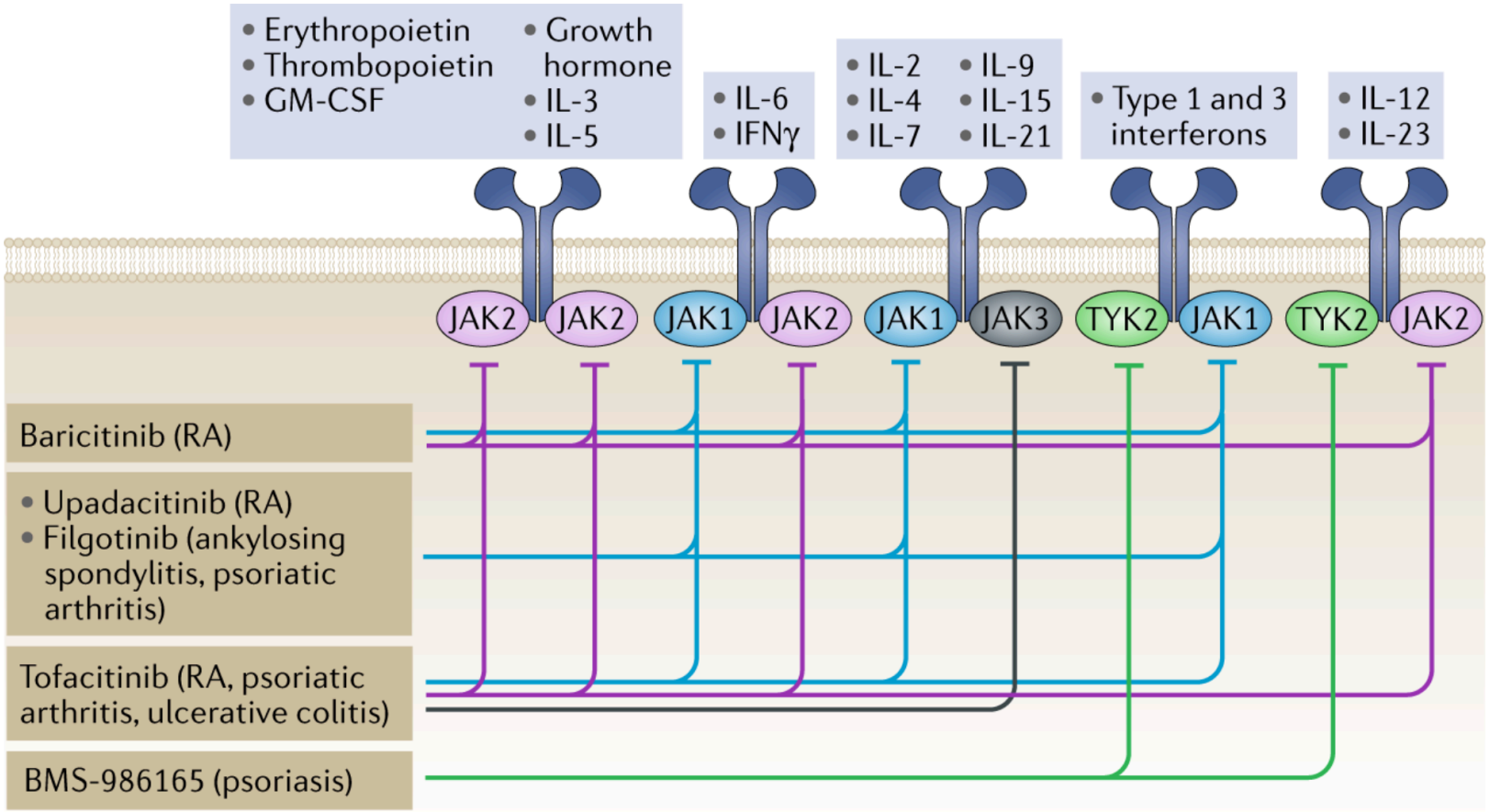
KEEPsAKE-2
- Inadequate response or intolerance to biologic therapy and/or DMARDs

*P<0.001 vs placebo (controlled for multiplicity)
[a]MDA determined as fulfilment of 5 of the following 7 criteria: Tender joint count ≤1, swollen joint count ≤1, PASI score ≤1 or ≤3% BSA involvement, patient pain NRS ≤1.5, PtGA-disease activity NRS ≤2.0, HAQ-DI score ≤0.5, Leeds Enthesitis Index ≤1

AbbVie press release, January 5, 2021, available at: https://news.abbvie.com/news/press-releases
ClinicalTrials.gov: KEEPsAKE-1: NCT03675308, KEEPsAKE-2: NCT03671148

JAK inhibitors

From: Selective Janus kinase inhibitors come of age



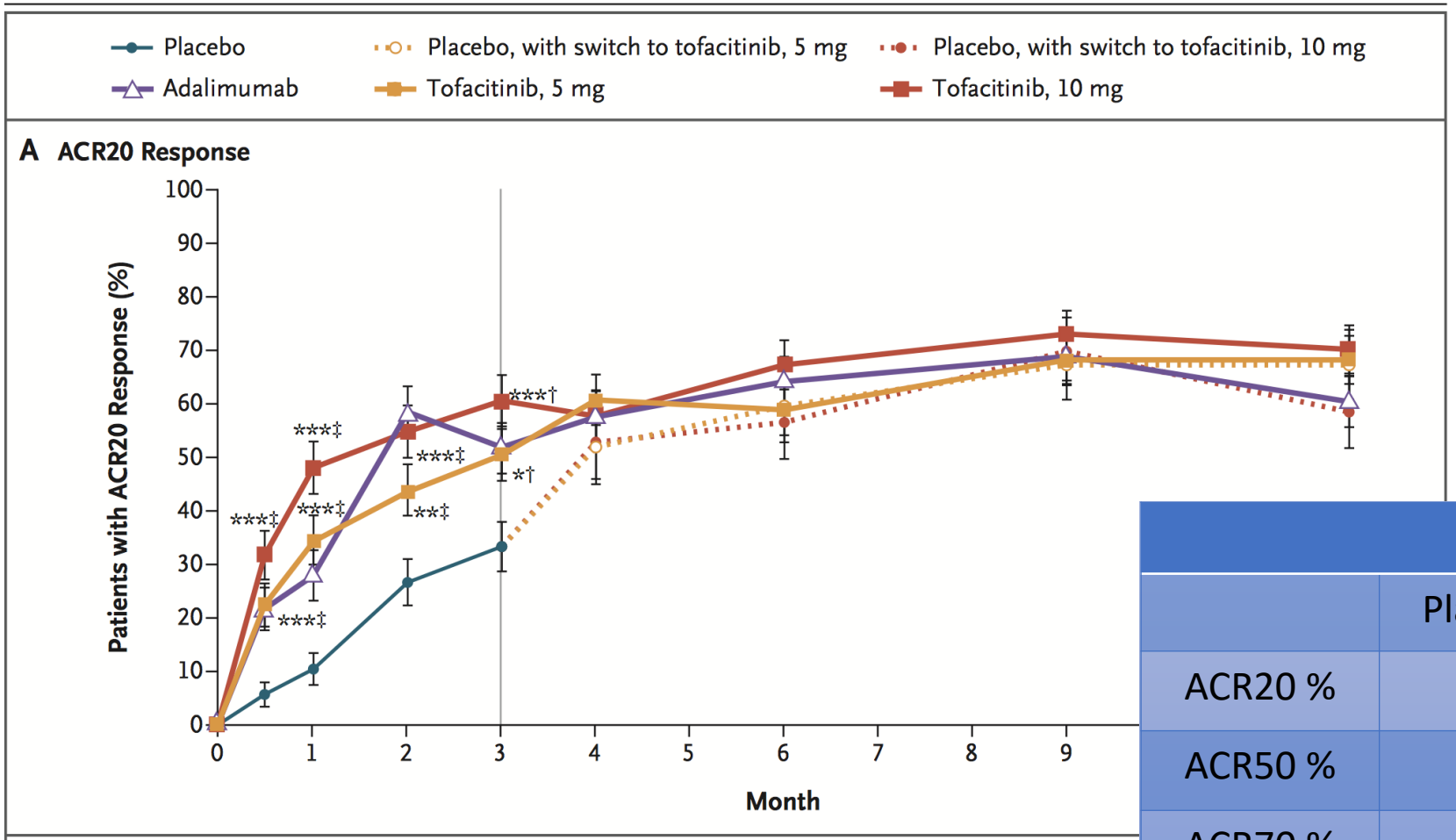
Different cytokine receptors signal via different Janus kinases (JAKs). First-generation JAK inhibitors affect a broad spectrum of cytokines, whereas selective JAK inhibitors have the potential to limit the activity of a much smaller subset of cytokines and thereby enable signalling via other JAK-dependent pathways to be maintained and, potentially, reduce the incidence of adverse effects.

RA = rheumatoid arthritis; GM-CSF = granulocyte-macrophage colony-stimulating factor; TYK = tyrosine kinase.
O'Shea JJ, et al. *Nat Rev Rheumatol*. 2019;15(2):74-75.

The NEW ENGLAND JOURNAL of MEDICINE

Tofacitinib or Adalimumab versus Placebo for Psoriatic Arthritis

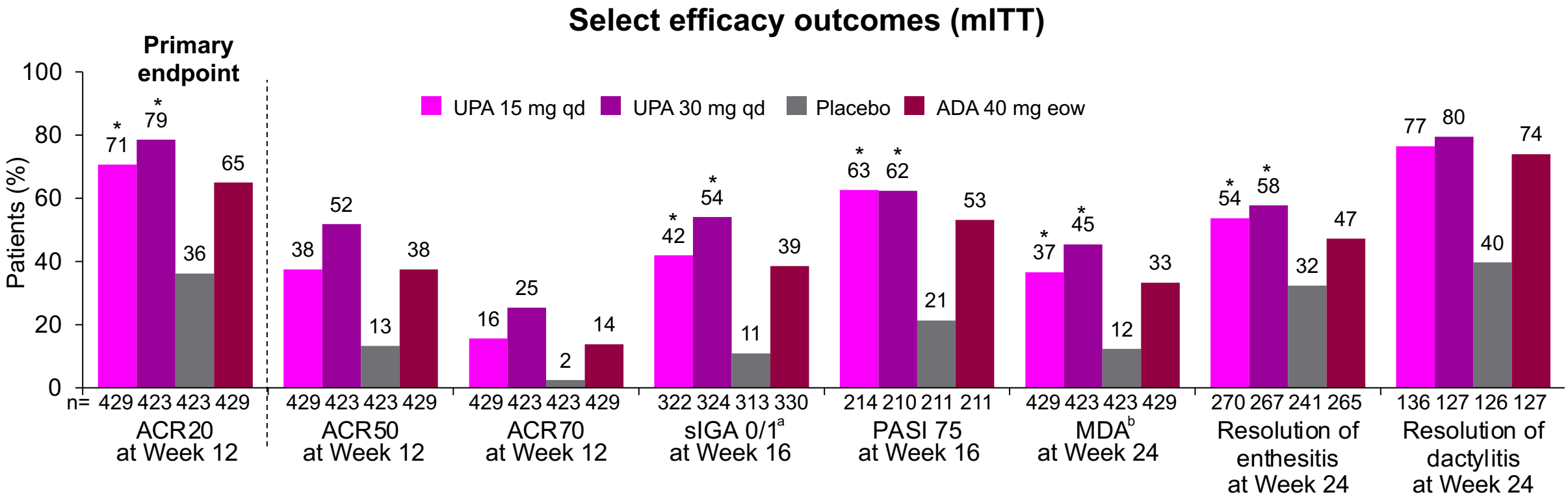
P. Mease, S. Hall, O. FitzGerald, D. van der Heijde, J.F. Merola, F. Avila-Zapata, D. Cieślak, D. Graham, C. Wang, S. Menon, T. Hendrikx, and K.S. Kanik



	At 3 Months		
	Placebo	Tofa 5 mg	Tofa 10 mg
ACR20 %	35	54	63
ACR50 %	10	30	42
ACR70 %	5	18	15

Mease PJ, et al. *N Engl J Med*. 2017;377:1537-1550.

SELECT-PsA 1: Key outcomes after treatment with upadacitinib versus placebo and adalimumab among adults with psoriatic arthritis

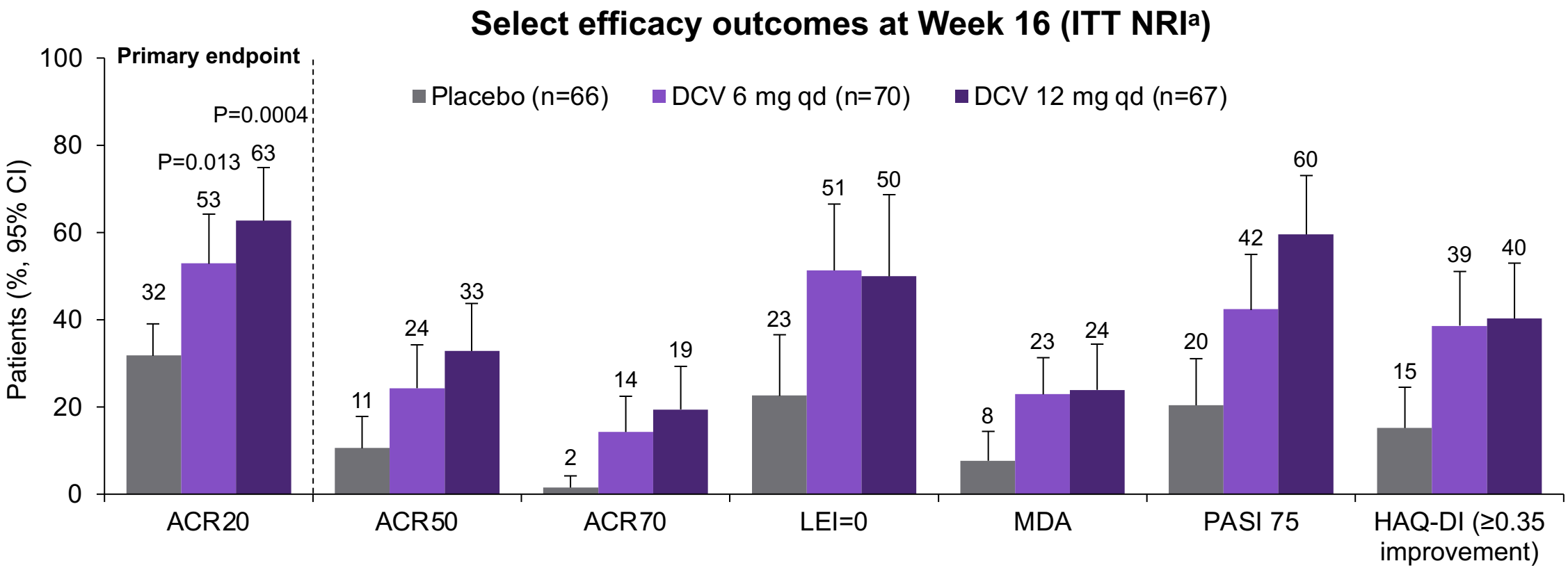


Bio-naïve population

*P<0.001 vs placebo (controlled for multiplicity)
For binary endpoints, NRI was used to handle missing data
[a]Plus ≥2-point decrease from baseline; [b]MDA determined as fulfilment of 5 of 7 criteria: Tender joint count ≤1, swollen joint count ≤1, PASI score ≤1 or ≤3% BSA involvement, patient pain NRS ≤1.5, PtGA-disease activity NRS ≤2.0, HAQ-DI score ≤0.5, Leeds Enthesitis Index ≤1

McInnes IB, et al. N Engl J Med 2021;384:1227–39.

Phase 2 trial: ACR responses and other outcomes after 16 weeks of treatment with deucravacitinib among patients with active PsA



[a]Modified baseline observation carried forward used to impute data for PASI 75 and HAQ-DI responses
LEI, Leeds Enthesitis Index, assessed among patients with enthesitis at baseline (LEI ≥1, N=96, 46%)
MDA, Minimal Disease Activity, response defined as patients achieving 5/7 of the following: tender joint count ≤1, swollen joint count ≤1, PASI ≤1 or ≤3% BSA affected, Patient Global Assessment (PtGA) of pain ≤15, PtGA of disease activity ≤20, HAQ-DI ≤0.5, tender entheseal points ≤1

Mease PJ, et al. ACR Convergence 2020; Maui Derm for Dermatologists 2021. Sponsored by Bristol Myers Squibb

Efficacy and safety of upadacitinib in patients with active ankylosing spondylitis (SELECT-AXIS 1): a multicentre, randomised, double-blind, placebo-controlled, phase 2/3 trial

Désirée van der Heijde, In-Ho Song, Aileen L Pangan, Atul Deodhar, Filip van den Bosch, Walter P Maksymowych, Tae-Hwan Kim, Mitsumasa Kishimoto, Andrea Everding, Yunxia Sui, Xin Wang, Alvina D Chu, Joachim Sieper

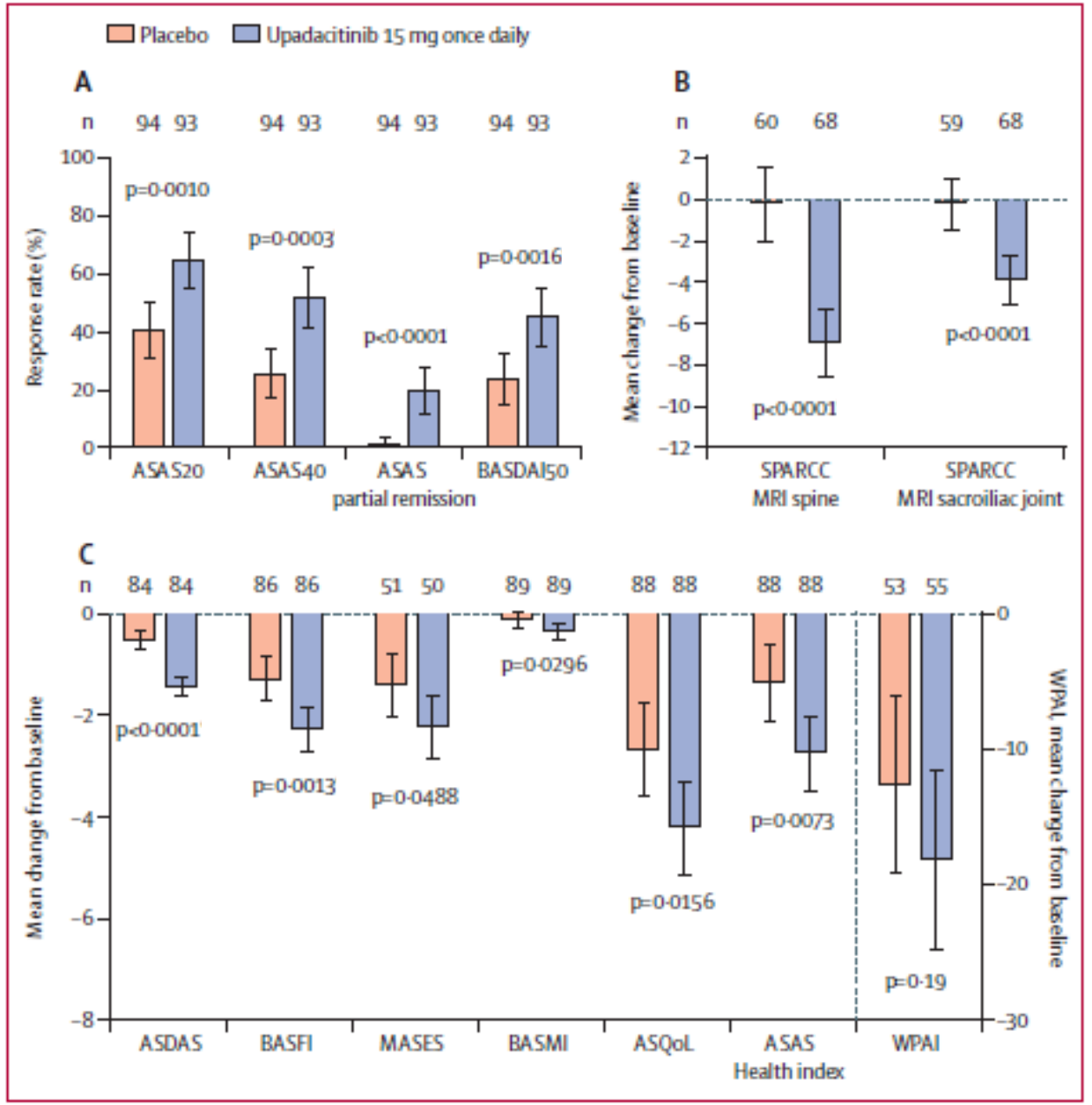


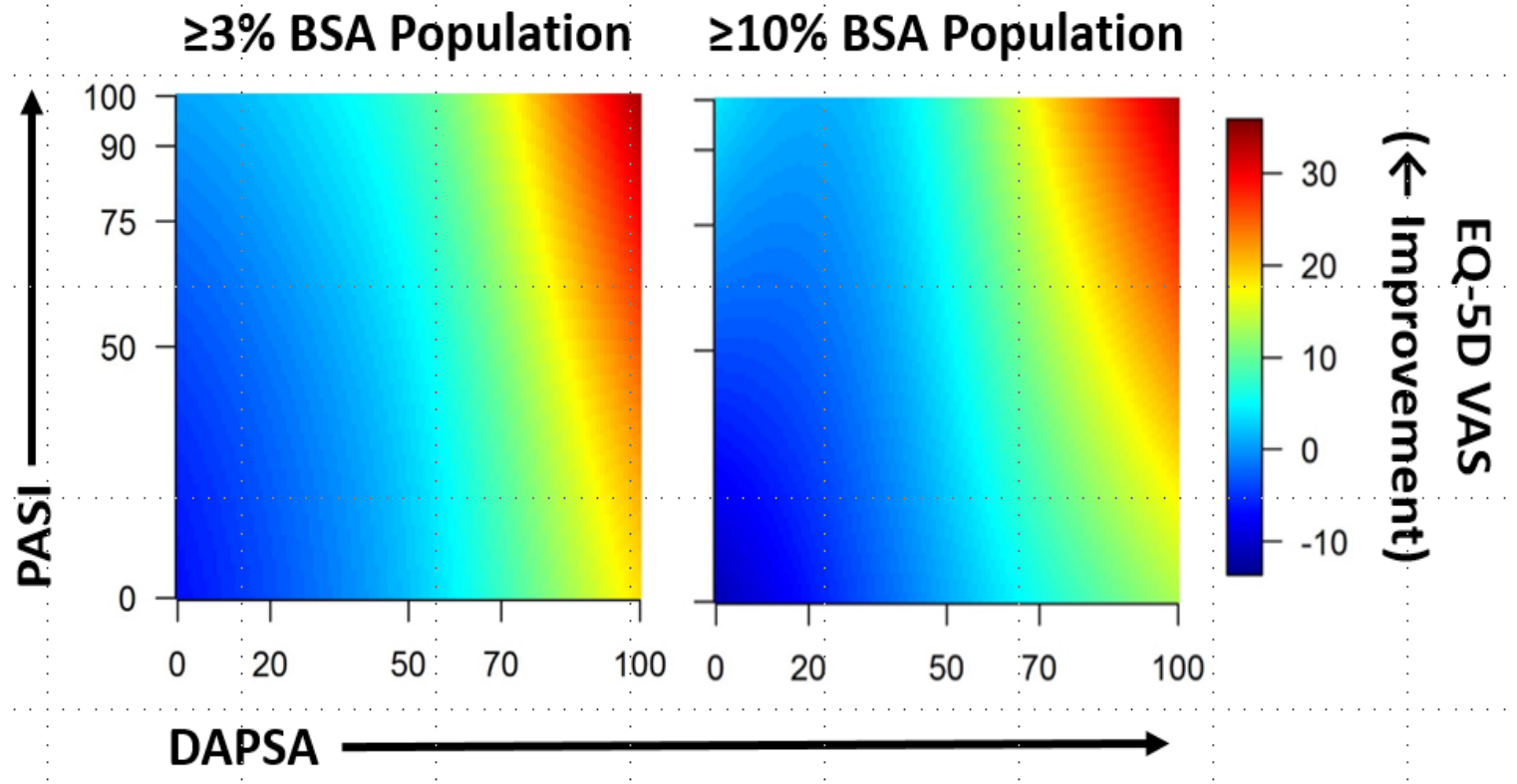
Figure 2: **Multiplicity-controlled and key secondary endpoints at week 14**

Van der Heijde D, et al. *Lancet*. 2019;394(10214):2108-2117.

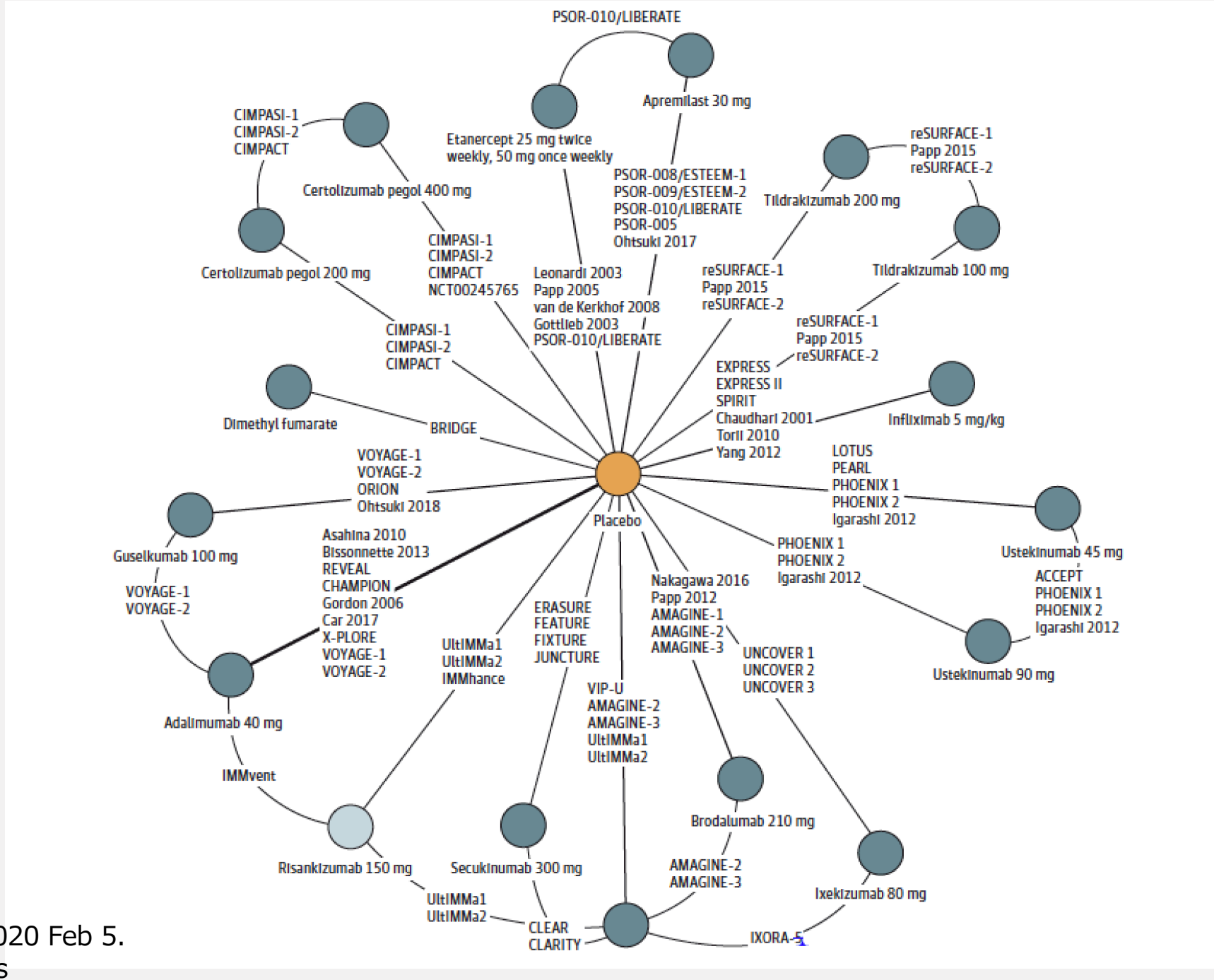
Not FDA approved for AS

Efficacy Data Considerations across Domains of Disease: PsO

For PsA patients with psoriasis, optimal improvements in patients' HRQoL, as measured by select domains of patient reported outcomes, were dependent on **successful treatment of both joint and skin** symptoms

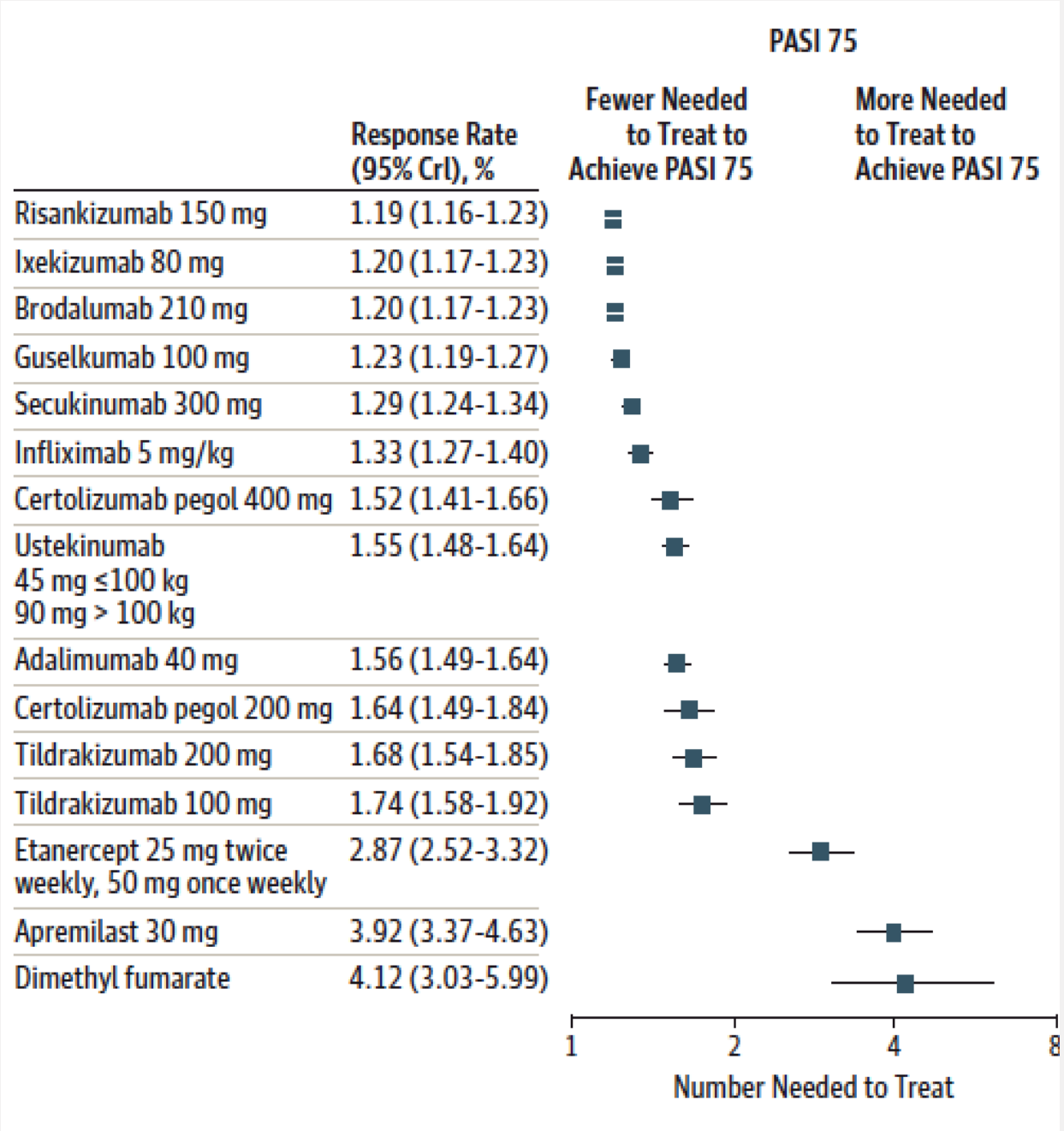


Kavanaugh A, Gottlieb A, Morita A, **Merola JF,** Birt J, Lin CY, Shuler CL, Thaçi D. Presented at: 2017 American College of Rheumatology Annual Meeting (ACR/ARHP); November 3-8, 2017; San Diego, CA. Poster presentation (abstract 2539).



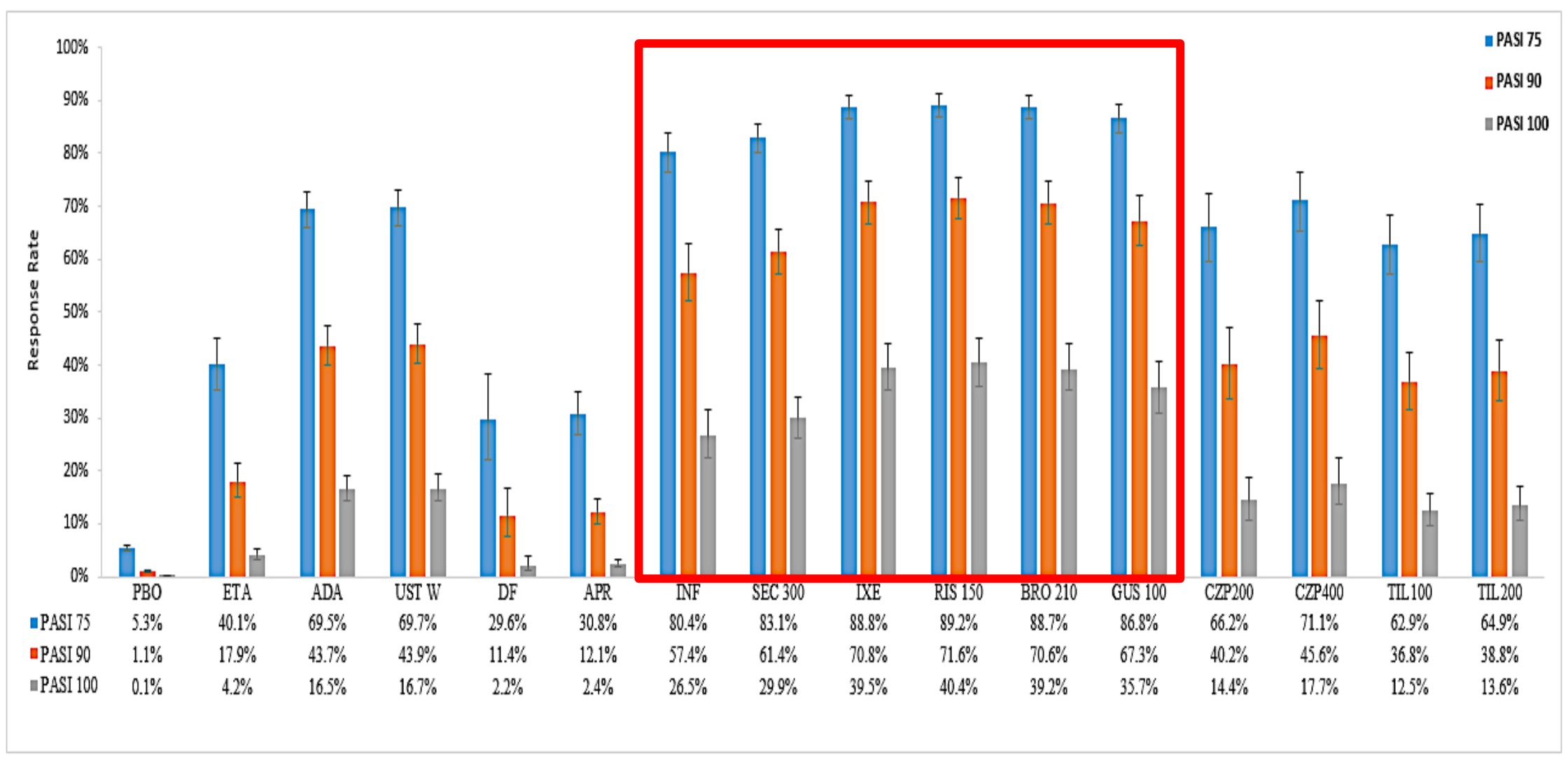
JAMA Dermatology, 2020 Feb 5.
Network Meta-analysis

Number needed to treat to achieve PASI 75



JAMA Dermatology,, 2020 Feb 5.
Network Meta-analysis

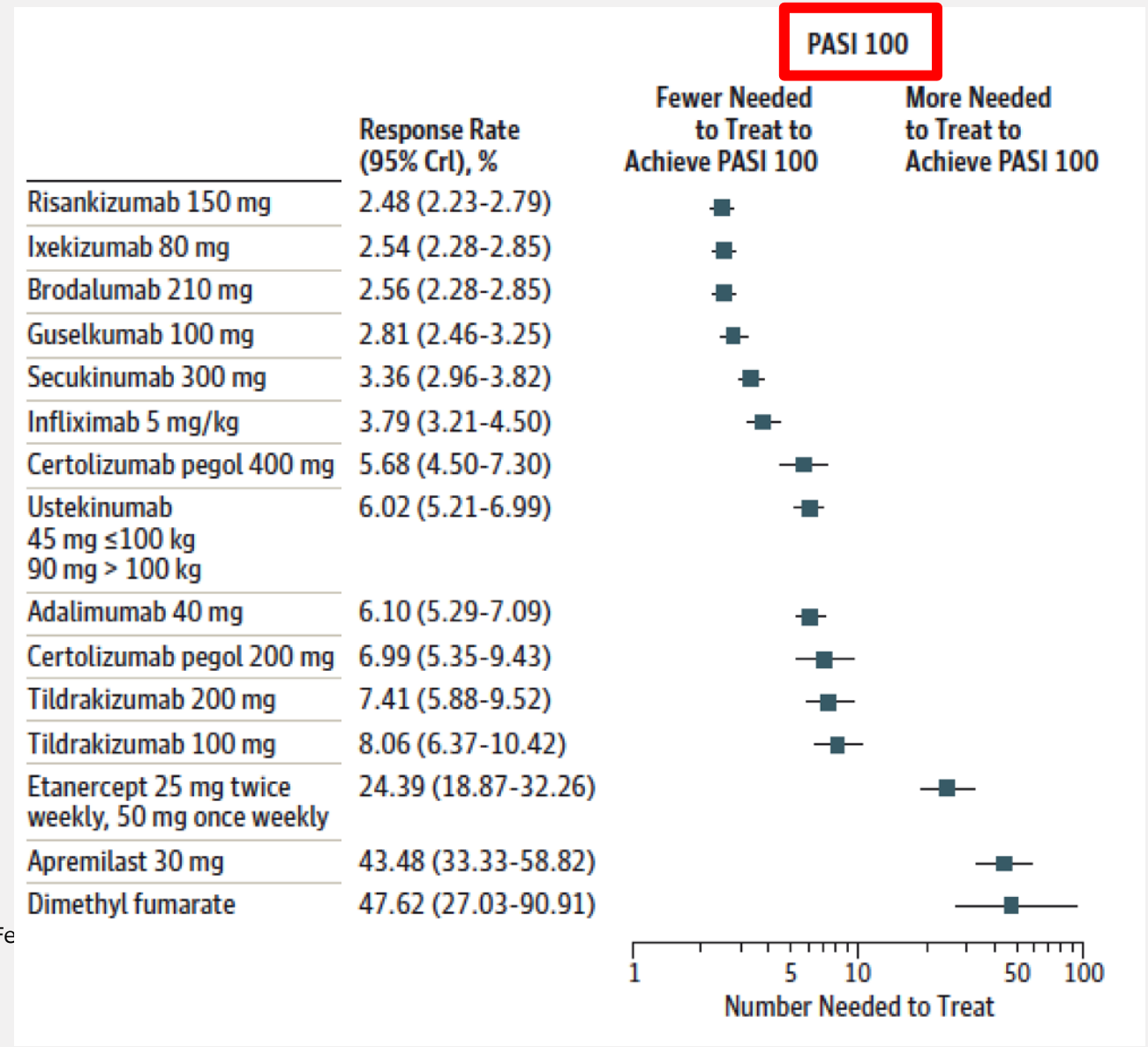
Network meta-analysis of short-term efficacy outcomes



	PBO	ETA	ADA	UST W	DF	APR	INF	SEC 300	IXE	RIS 150	BRO 210	GUS 100	CZP200	CZP400	TIL 100	TIL 200
PASI 75	5.3%	40.1%	69.5%	69.7%	29.6%	30.8%	80.4%	83.1%	88.8%	89.2%	88.7%	86.8%	66.2%	71.1%	62.9%	64.9%
PASI 90	1.1%	17.9%	43.7%	43.9%	11.4%	12.1%	57.4%	61.4%	70.8%	71.6%	70.6%	67.3%	40.2%	45.6%	36.8%	38.8%
PASI 100	0.1%	4.2%	16.5%	16.7%	2.2%	2.4%	26.5%	29.9%	39.5%	40.4%	39.2%	35.7%	14.4%	17.7%	12.5%	13.6%

JAMA Dermatology, 2020 Feb 5

Number needed to treat to achieve PASI 100

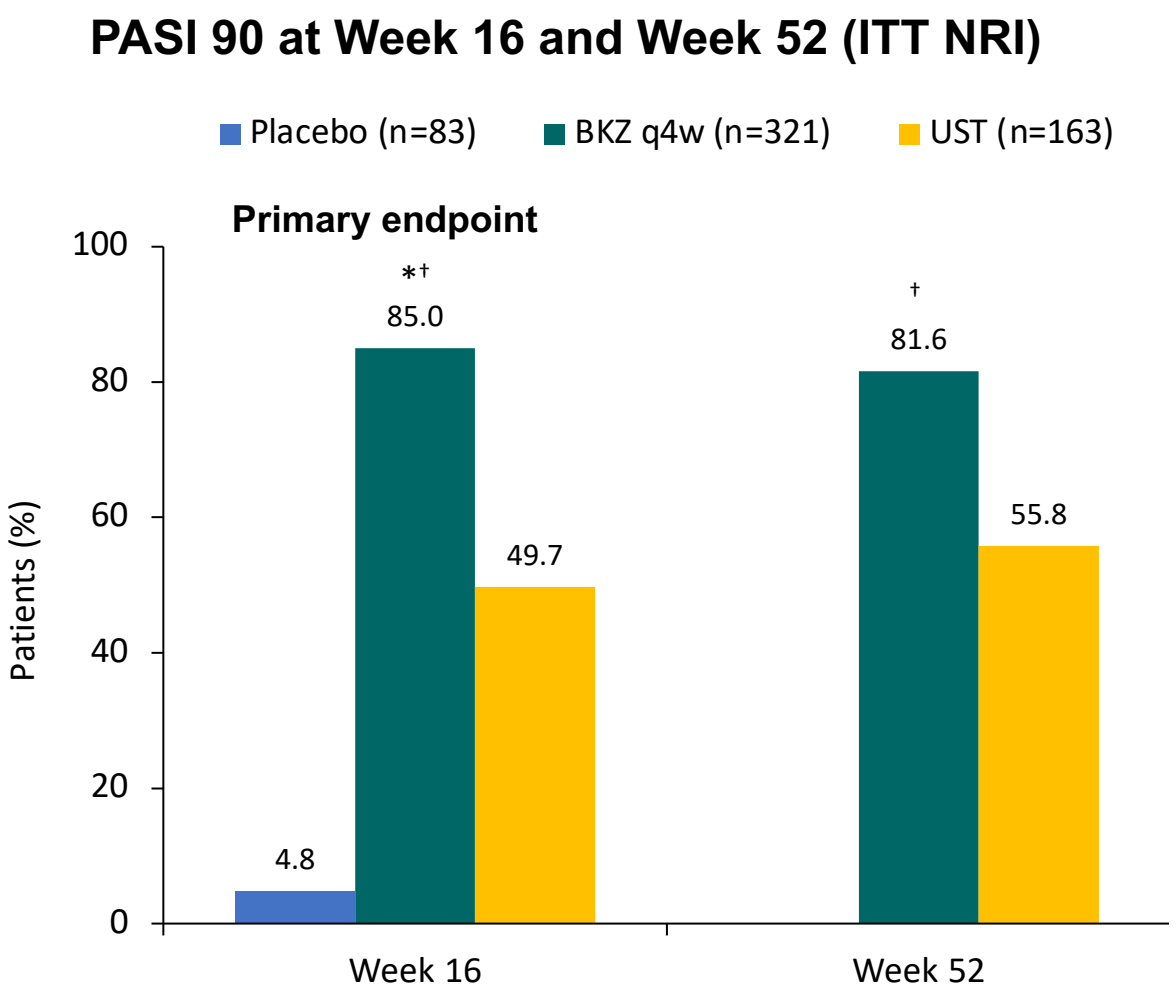


Armstrong et al. JAMA Dermatology,, 2020 Fe
Network Meta-analysis

NNT: Number needed to treat in PSORIASIS

Drug	Tx PASI 75(%)	PBO PASI 75(%)	Tx Effect PASI 75	NNT PASI 75	Tx effect PASI 90	NNT PASI 90	Comments PEP, Dose, Study
Methotrexate	35.5	18.9	16.6	6	2.3	43.5	CHAMPION
Apremilast	33.1	5.3	27.8	3.6			ESTEEM1
Etanercept	49	4	45	2.2	21	4.8	50mg BIW wk 12
Adalimumab	71	6.5	74.5	1.6	43	2.3	40mg EOW wk12
Ustekinumab	66	3	63	1.6	34.7	2.9	90 mg week 12
Infliximab	75.5	1.9	73.6	1.4	44.7	2.2	5mg/kg IV wk10
Secukinumab	81.6	4.5	77.1	1.3	58	1.7	300mg wk12
Ixekizumab	89.1	3.9	85.2	1.2	70.4	1.4	80 mg wk12

BE VIVID: PASI 90 responses at Week 16 and 52 after treatment with bimekizumab or ustekinumab, treatment history, and safety



- Patient groups were balanced for all baseline characteristics

Prior medication use	Placebo (n=86)	BKZ q4w (n=321)	UST (n=163)
Any systemic	64 (77.1)	267 (83.2)	132 (81.0)
Any biologic	33 (39.8)	125 (38.9)	63 (38.7)
IL-17 inhibitor	18 (21.7)	76 (23.7)	38 (23.3)
TNF inhibitor	16 (19.3)	51 (15.9)	24 (14.7)
Il-23 inhibitor	5 (6.0)	16 (5.0)	6 (3.7)

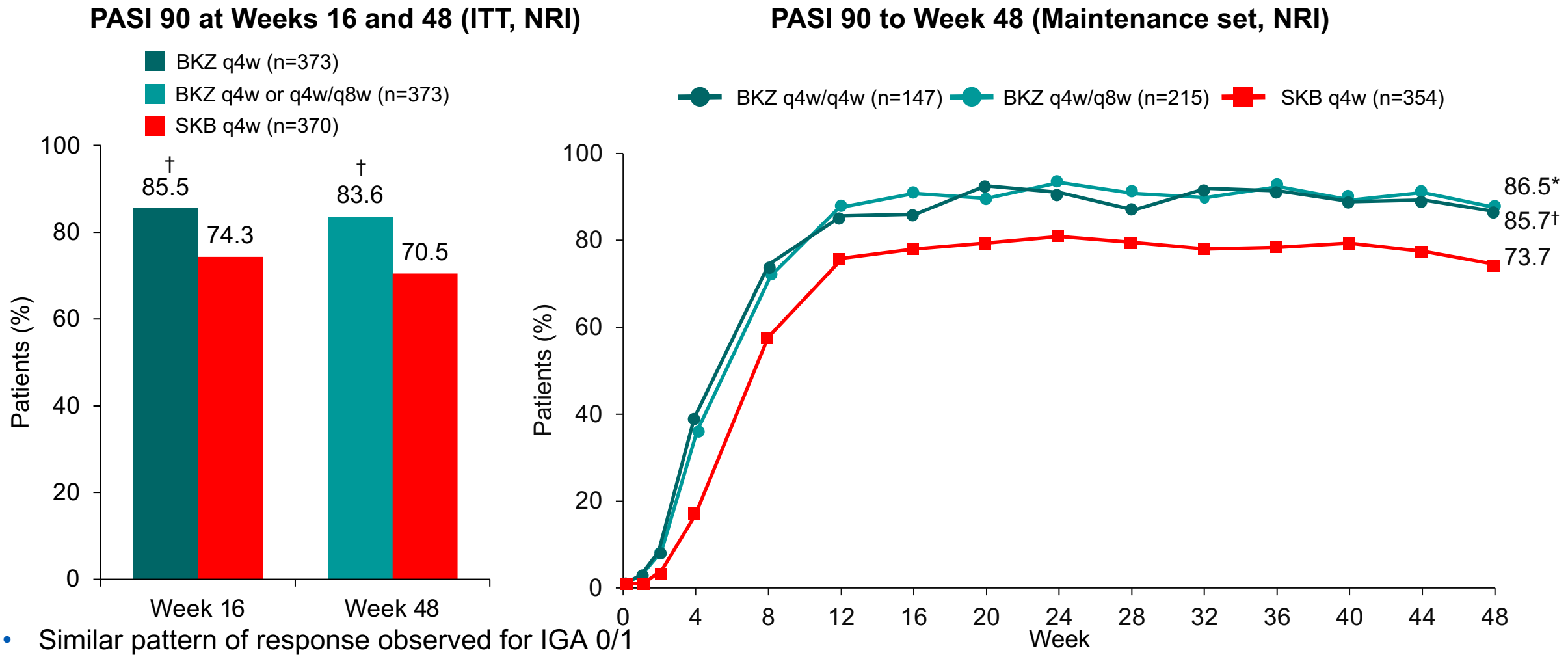
Data are n (%)

Safety

- **72 (18.2%) of BKZ-treated patients** experienced oral Candida infections up to Week 52 (UST: 1 [0.6%])
- 1 (0.3%) BKZ- and 0 UST-treated patients experienced IBD up to Week 52

- *P<0.001 vs placebo; †P<0.001 vs UST; P-values calculated using Cochran-Mantel-Haenszel test from the general association
- Reich K, et al. AAD 2020 Late-breaking presentation: Clinical trials Sponsored by UCB Pharma

Bimekizumab / Secukinumab
BE RADIANT: PASI 90 at Weeks 16 and 48

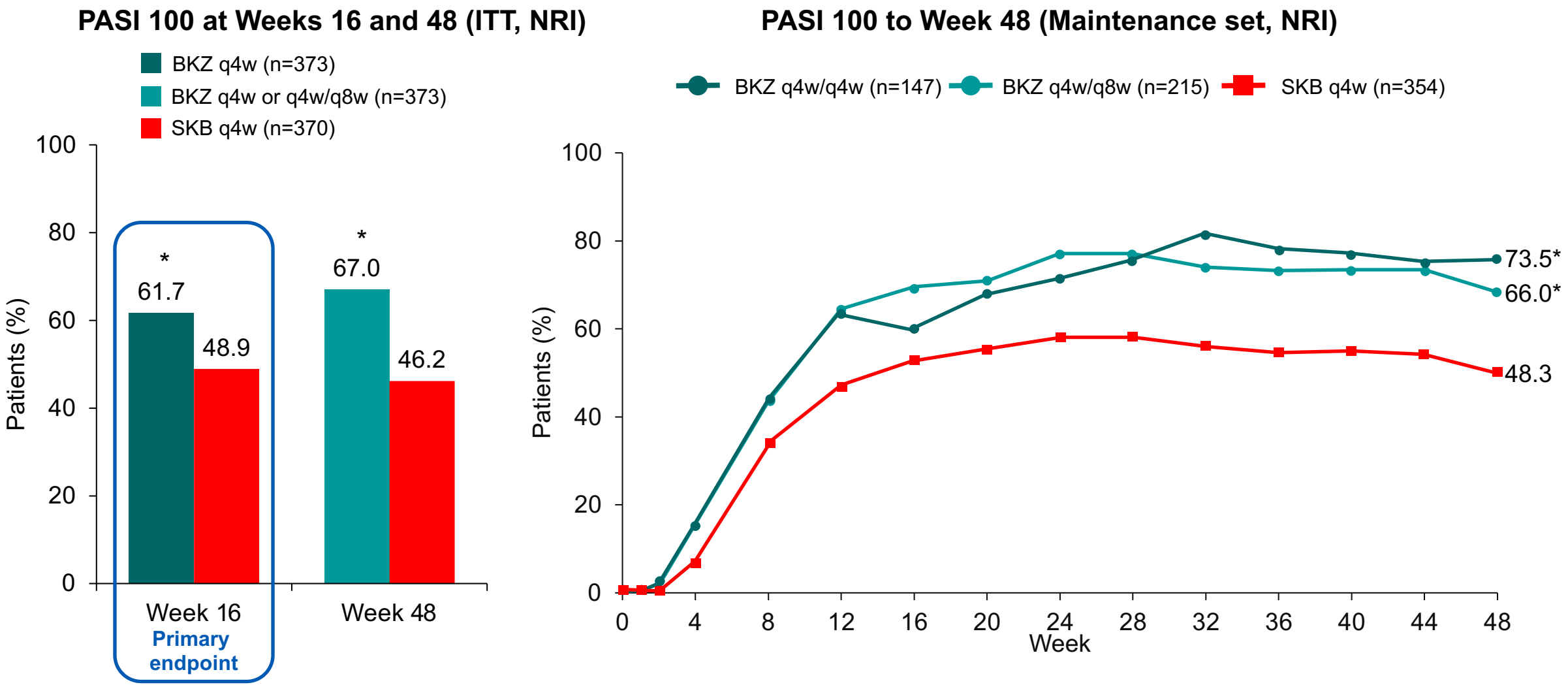


- Similar pattern of response observed for IGA 0/1

*P=0.002, †P<0.001 vs SKB. P values are nominal and not controled for multiplicity. Cochran Mantel Haenszel test for general assocation (stratification factors: prior biologic, region)

Reich K, et al. AAD VMX 2021, Late breaker; New Engl J Med 2021;April 23:DOI:!10.1056/NEJMoa2102383. Sponsored by UCB Pharma

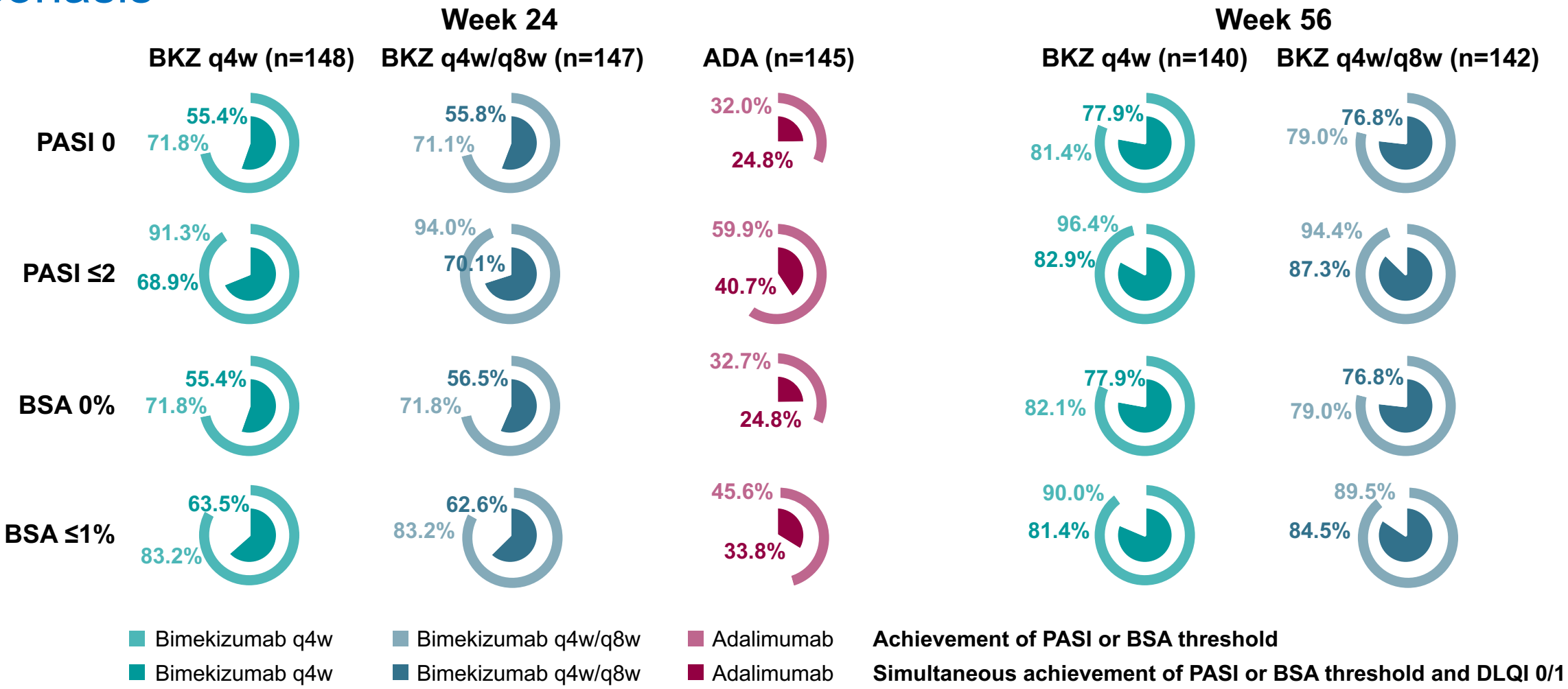
Bimekizumab / Secukinumab
BE RADIANT: PASI 100 at Weeks 16 and 48



*P<0.001 vs SKB. Cochran Mantel Haenszel test for general assocation (stratification factors: prior biologic, region)

Reich K, et al. AAD VMX 2021, Late breaker; New Engl J Med 2021;April 23:DOI:!10.1056/NEJMoa2102383. Sponsored by UCB Pharma

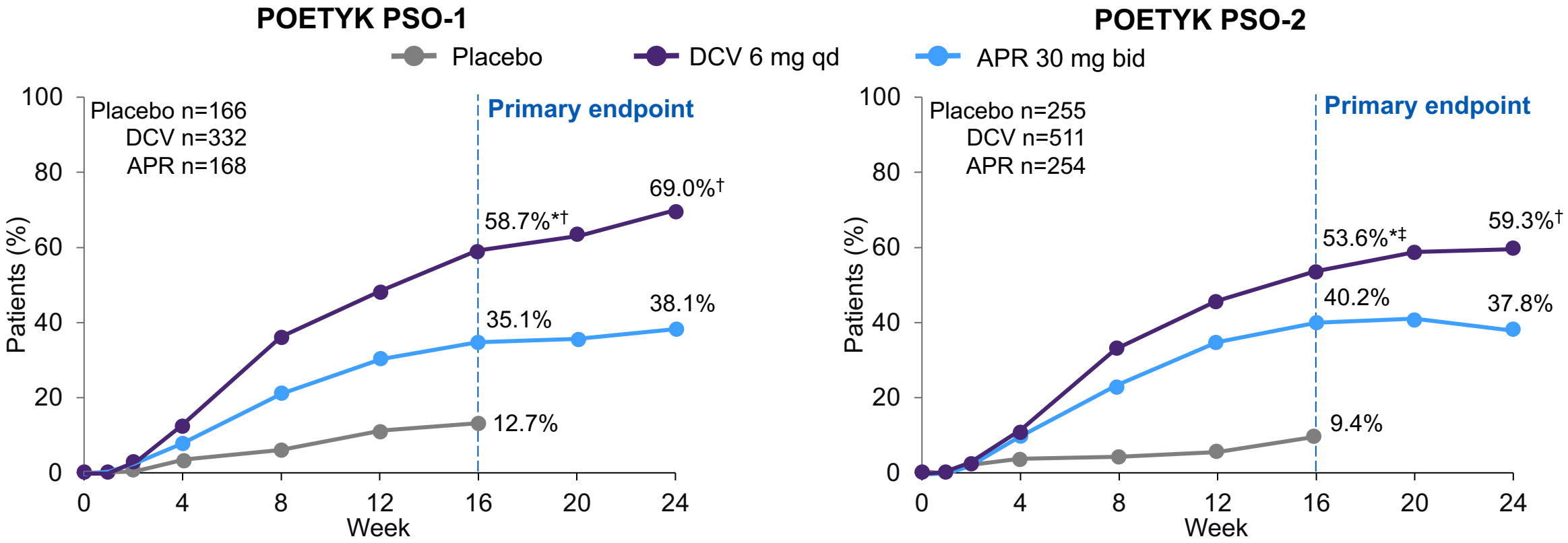
BE SURE: Simultaneous achievement of DLQI 0/1 and PASI or BSA thresholds with **bimekizumab** or adalimumab in patients with psoriasis



Blauvelt A, et al. AAD VMX 2021, P27464. Sponsored by UCB Pharma

Deucravacitinib (Tyk2 oral): POETYK PSO-1 and PSO-2: PASI 75 at Weeks 16 and 24

PASI 75 response at Week 16 (coprimary endpoint) and through Week 24 (NRI)



- 82.5% (PSO-1) and 81.4% (PSO-2) of deucravacitinib patients who achieved PASI 75 at Week 24, and continued treatment, maintained response at Week 52

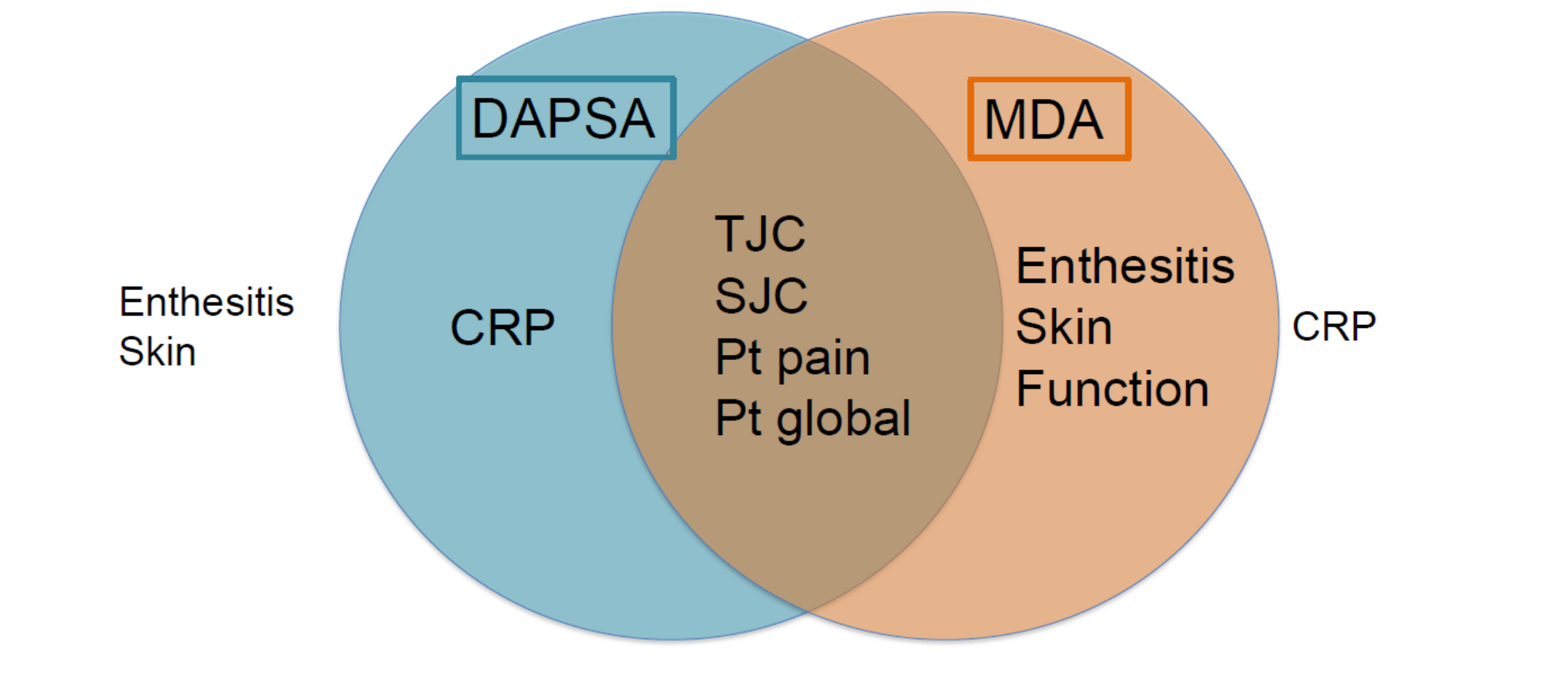
*P<0.0001 vs placebo, †P<0.0001 vs apremilast, ‡P=0.0003 vs apremilast

Armstrong AW, et al. AAD VMX 2021, Late breaker. Sponsored by Bristol Myers Squibb

Treat-to-Target

Composite Measures in PsA

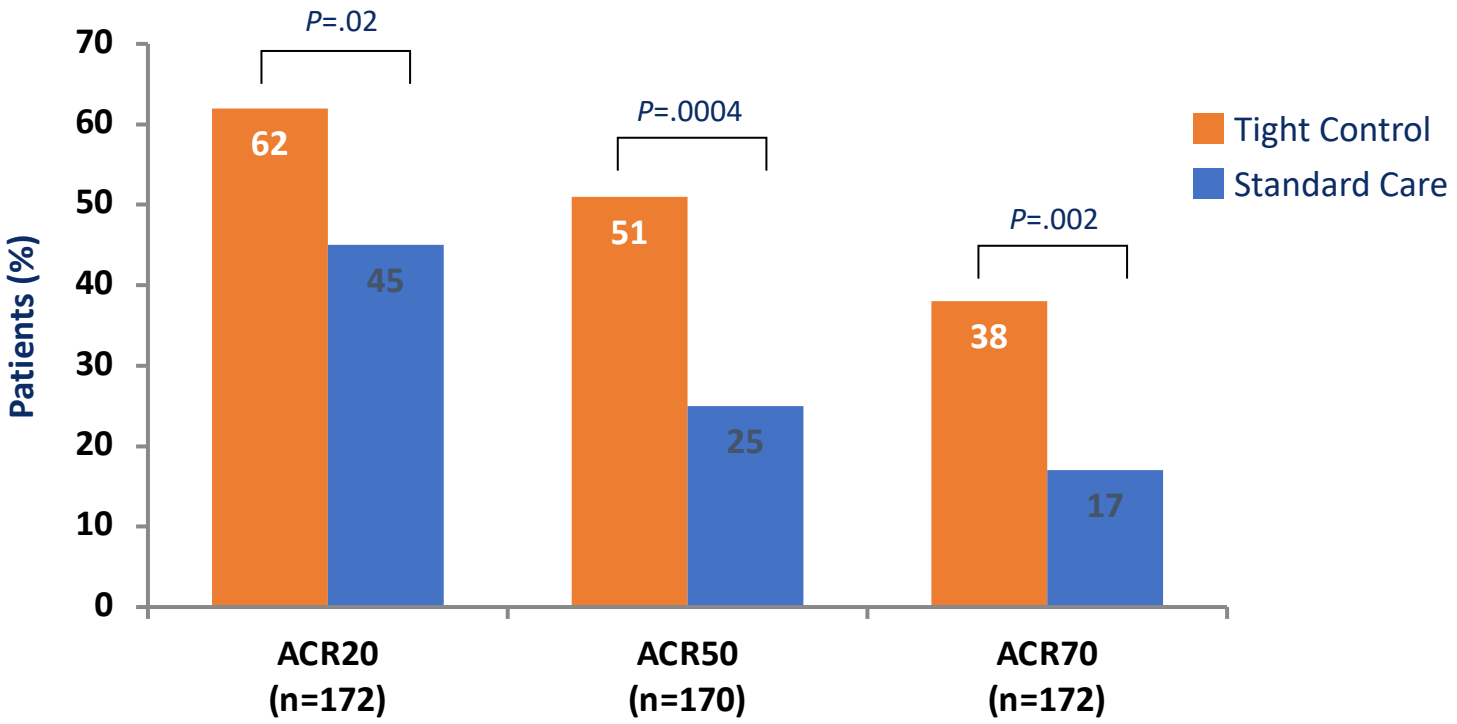
Low Disease Activity: DAPSA vs MDA/VLDA



Developed by Laura Coates.

Tight Control Was Associated with Significantly Greater Improvements in Signs and Symptoms of Disease at Week 48

Primary Outcome: Complete Case Analysis



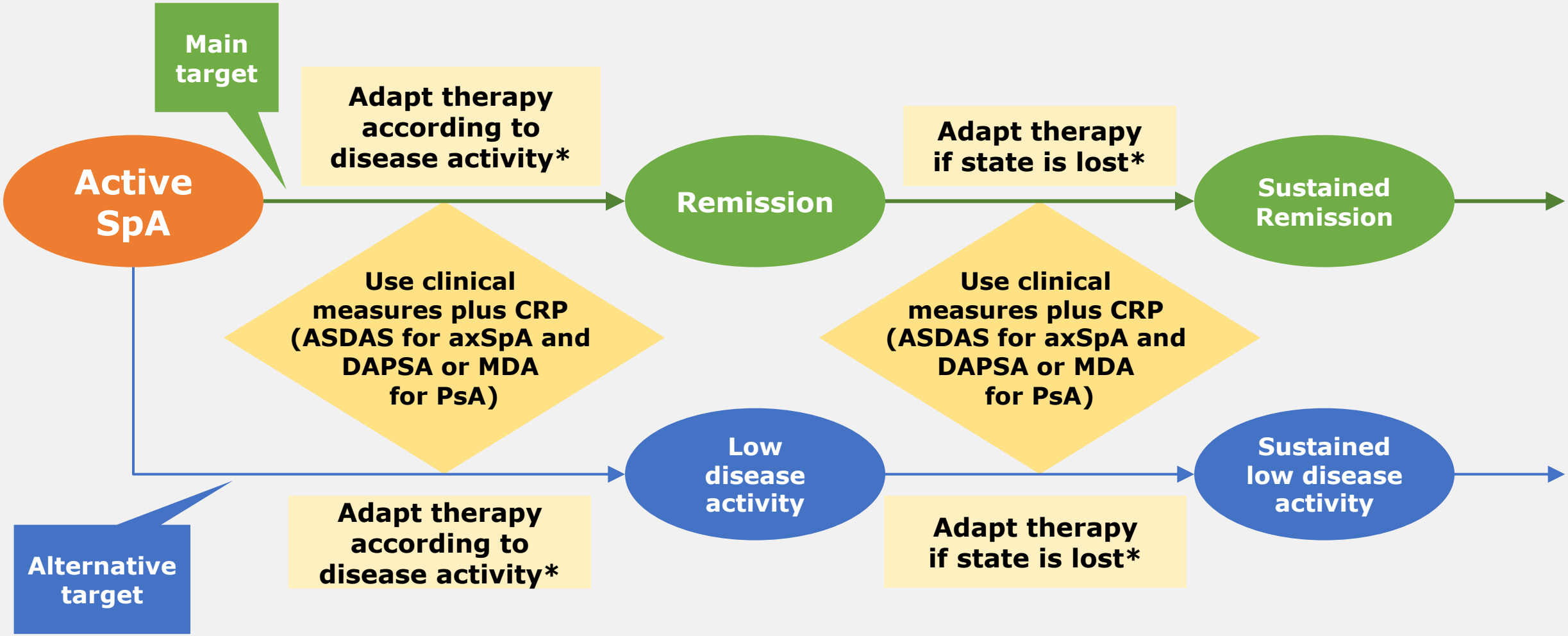
ITT with Multiple Imputations

Outcome Measure	OR	Lower 95% CI	Upper 95% CI	*P*-Value
ACR20	1.91	1.03	3.55	0.0392
ACR50	2.36	1.25	4.47	0.0081
ACR70	2.64	1.32	5.26	0.0058

ITT = intent-to-treat.

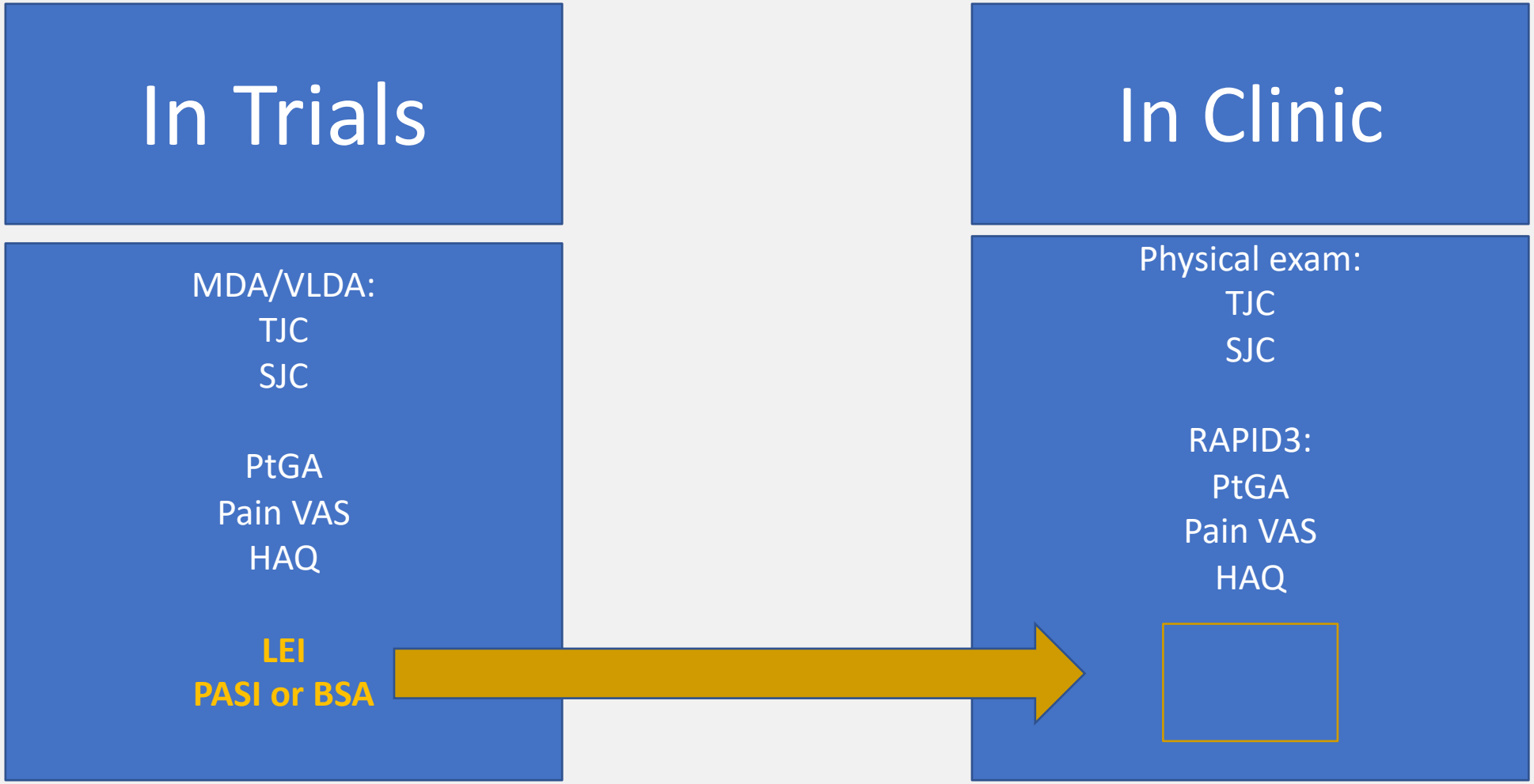
Coates LC, et al. *BMC Musculoskelet Disord*. 2013;14:101.

Treatment Target Algorithm



*Consider extra-articular manifestation, comorbidities, other patient factors and drug-related risk

Smolen JS, et al. Ann Rheum Dis. 2018;77(1):3-17.

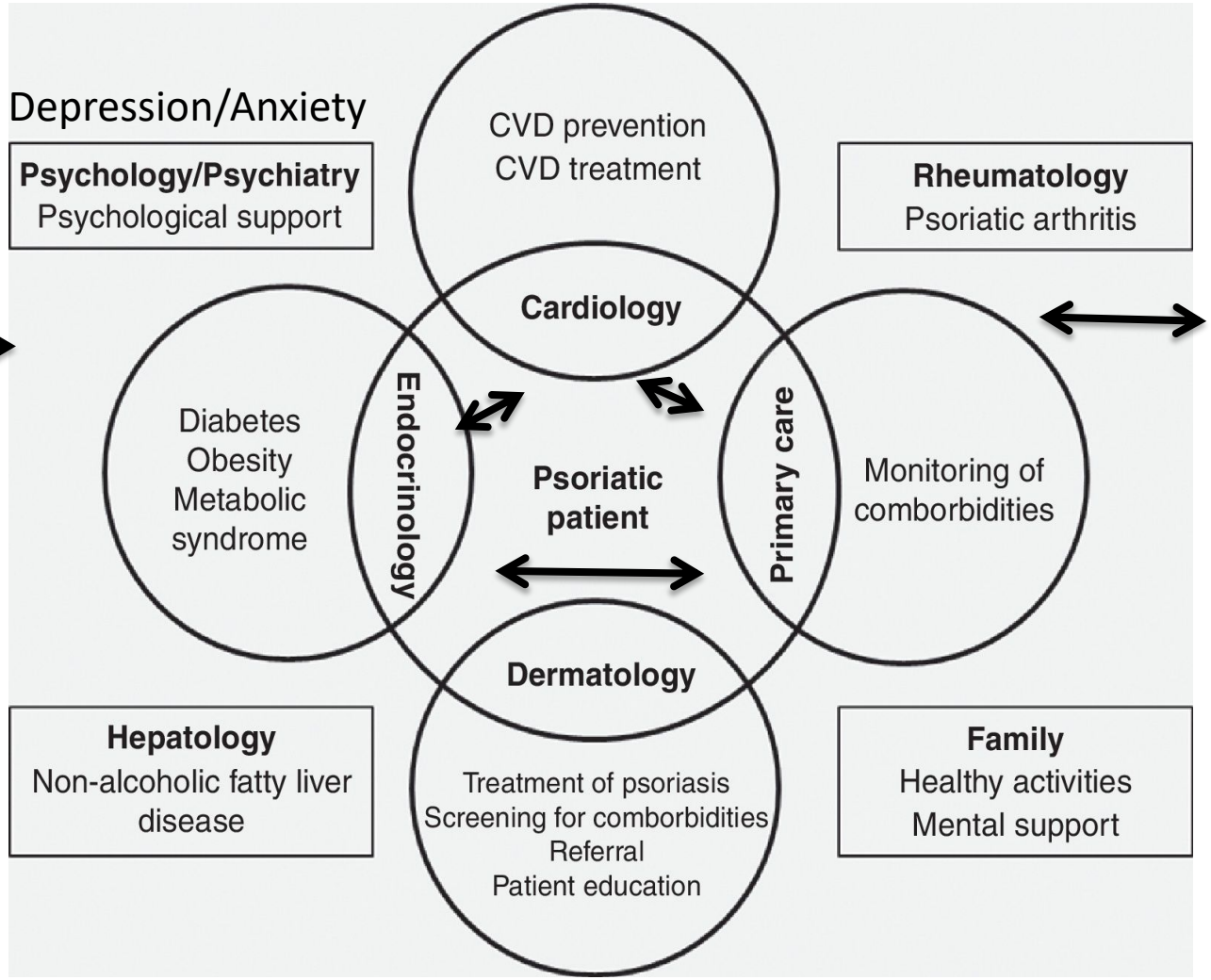


PtGA = patient global assessment.
Courtesy of Merola JF.

It Takes a Team…

Other co-prevalent conditions:

- IBD (Gastroenterology)
- Sleep disturbance (PCP vs. Sleep Med)
- Gout (Rheum)
- Smoking (PCP)
- Hidradenitis (Derm)
- Inflammatory eye disease (Ophtho)



Treatment considerations:

- Vaccination with systemic immunosuppression
- Medication monitoring
- Inter-disciplinary medication decision-making (PsO +/- PsA etc)
- Medication co-morbidity and med-med interactions

Adapted from Torres T, Bettencourt N. Rev Port de Cardiologia. 33(2) 95-99. 2014.

PPACMAN: Combined Clinics and Local/Regional Partnerships

Psoriasis and Psoriatic Arthritis Clinics Multicenter Advancement Network Consortium (PPACMAN) Survey: Benefits and Challenges of Combined Rheumatology-dermatology Clinics

Jean-Phillip Okhovat, Alexis Ogdie, Soumya M. Reddy, Cheryl F. Rosen, Jose U. Scher, and Joseph F. Merola

ABSTRACT. Optimal management of patients with both psoriasis and psoriatic arthritis (PsA) necessitates collaboration among dermatologists and rheumatologists. In this manuscript, we discuss challenges and opportunities for dual care models for patients with psoriasis and PsA and the results of a survey of combined clinics based in North America. (J Rheumatol 2017;44:693–4; doi:10.3899/jrheum.170148)

Key Indexing Terms:
PSORIATIC ARTHRITIS PSORIASIS COMBINED CLINIC GRAPPA

The Journal of Rheumatology 2017; 44:5; doi:10.3899/jrheum.170148

www.PPACMAN.org

Summary

- Domain-based approach to psoriatic disease treatment
  - Skin matters
- Updated GRAPPA treatment guidelines
- PsA current and emerging data; anti-TNF and beyond
- PsO current and emerging data: pushing the envelope on clear skin
- Treat to target: clinical trials and real-world practice
- Interdisciplinary collaboration optimizes outcomes for patients with psoriatic disease


Q&A

Thank you