



Every Second Counts!™

Corporate Presentation

November 2019

Forward Looking Statements

This presentation (together with any other statements or information that we may make in connection herewith) contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 with respect to Kiniksa Pharmaceuticals, Ltd. (and its consolidated subsidiary, together, unless context otherwise requires, “Kiniksa,” “we” or “our”). In some cases, you can identify forward looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “goal,” “design,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these identifying words. All statements contained in this presentation that do not relate to matters of historical fact should be considered forward-looking statements, including without limitation, statements regarding our strategy and corporate goals, business development activities, product development activities, clinical trials and other studies, regulatory and other applicable authority submissions, applications and approvals, our pre-commercial efforts, potential value drivers for the company, disease prevalence, potential market opportunities and competitive position, and plans for capital allocation.

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This presentation also contains estimates, projections, and/or other information regarding our industry, our business and the markets for certain of our product candidates, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, clinical trials, studies and similar data prepared by market research firms and other third parties, from industry, medical and general publications, and from government data and similar sources. Information that is based on estimates, forecasts, projections, market research, or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information.



- ✓ Passionate Employees
- ✓ Sequential Pipeline
- ✓ Autoimmune and Autoinflammatory Diseases
- ✓ Strong Biologic Rationale or Validated Mechanisms
- ✓ Potential for Multiple Indications



Building a fully-integrated global biopharmaceutical company



Focusing on strong biologic rationale and/or validated mechanisms

Targeting underserved pockets of unmet medical need

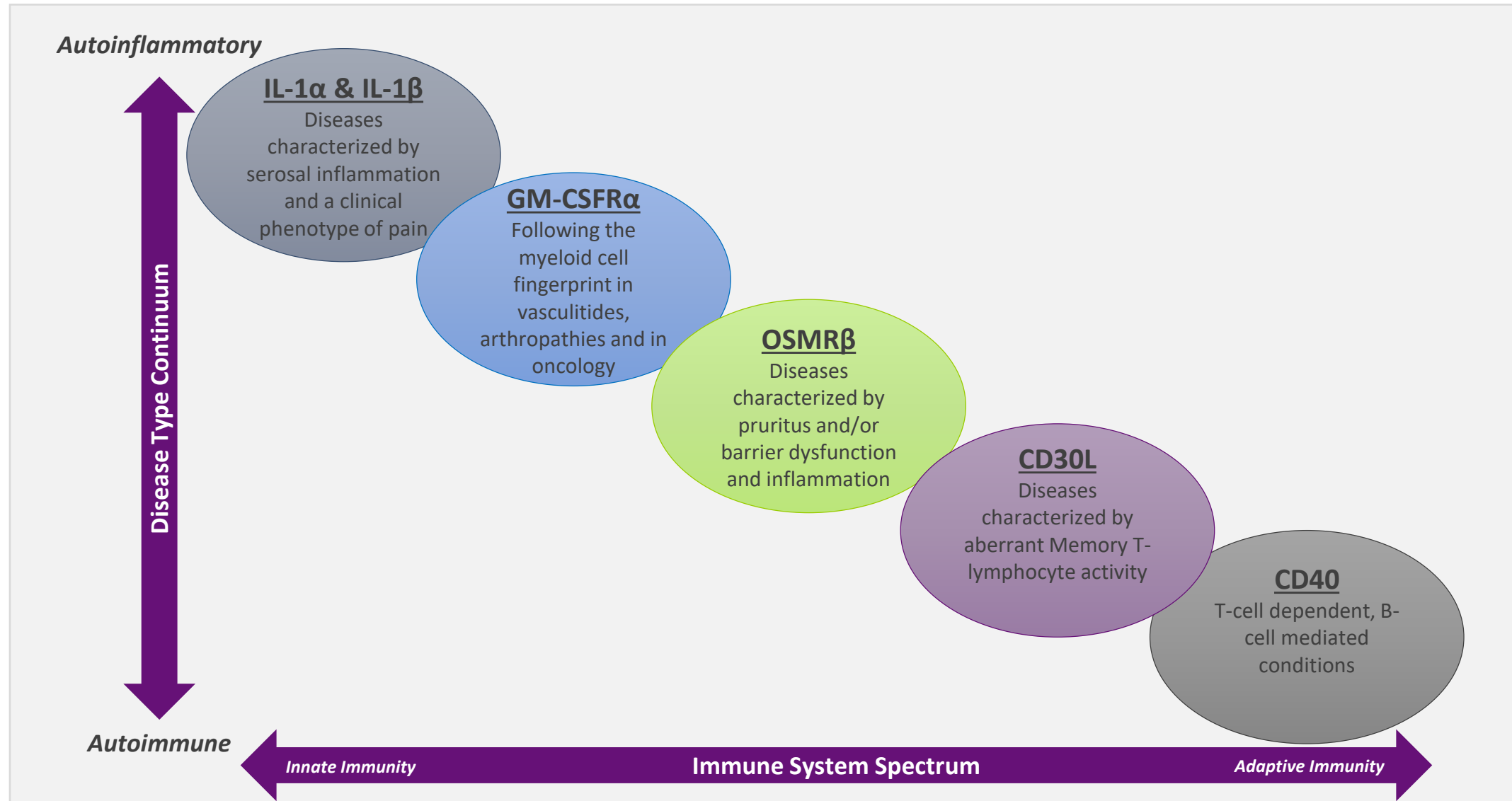
Acquiring/discovering molecules aimed at modulating central control nodes of the immune system

Allocating capital across the portfolio relative to the opportunity







Executing on communicated timelines
Every Second Counts!™

Discovering ◆ Acquiring ◆ Developing ◆ Commercializing

Development strategy focused on modulating central nodes of the immune system



Pipeline of product candidates across various stages of development

Program & Target	Indication	Preclinical	Phase 1	Phase 2	Phase 3	Status	Rights
Rilonacept¹ IL-1α & IL-1β	Recurrent Pericarditis					<ul style="list-style-type: none"> Breakthrough Therapy designation granted; enrolling single, pivotal Phase 3 trial 	Worldwide (excluding MENA)
Mavrilimumab GM-CSFRα	Giant Cell Arteritis (GCA)					<ul style="list-style-type: none"> Enrolling global Phase 2 proof-of-concept trial 	Worldwide
KPL-716 OSMRβ	Prurigo Nodularis (PN)					<ul style="list-style-type: none"> Enrolling Phase 2a trial in PN 	Worldwide
	Multiple Diseases Characterized by Chronic Pruritus ²					<ul style="list-style-type: none"> Enrolling exploratory Phase 2 study in diseases characterized by chronic pruritus 	
KPL-404 CD40	Autoimmune					<ul style="list-style-type: none"> Enrolling Phase 1 trial in healthy volunteers 	Worldwide
KPL-045 CD30L	Autoimmune					<ul style="list-style-type: none"> Preclinical activities 	Worldwide

1) Rilonacept (ARCALYST®) is approved and marketed for cryopyrin-associated periodic syndrome, in the United States by Regeneron Pharmaceuticals, Inc. We will assume the rights to this indication upon receiving approval for rilonacept in the recurrent pericarditis indication; 2) Chronic Idiopathic Pruritus, Chronic Idiopathic Urticaria, Plaque Psoriasis, Lichen Simplex Chronicus, Lichen Planus

Initial indications are based on validated mechanisms and/or strong biologic rationale

Mechanism of Action

Rationale

Initial Indication

Rilonacept

IL-1 α and IL-1 β cytokine trap

IL-1 α and IL-1 β are cytokines that have been shown to play a key role in inflammatory diseases¹

Final data from Phase 2 open-label study in subjects with **recurrent pericarditis** showed reduction in CRP and reported pain as well as increase in quality of life scores

Mavrimumab

monoclonal antibody inhibitor blocking GM-CSFR signaling

Reported data suggest GM-CSF is a key growth factor and cytokine in autoinflammation and autoimmunity²

GM-CSF and GM-CSFR α are both highly expressed in biopsies of **giant cell arteritis** patients vs. normal healthy controls

KPL-716

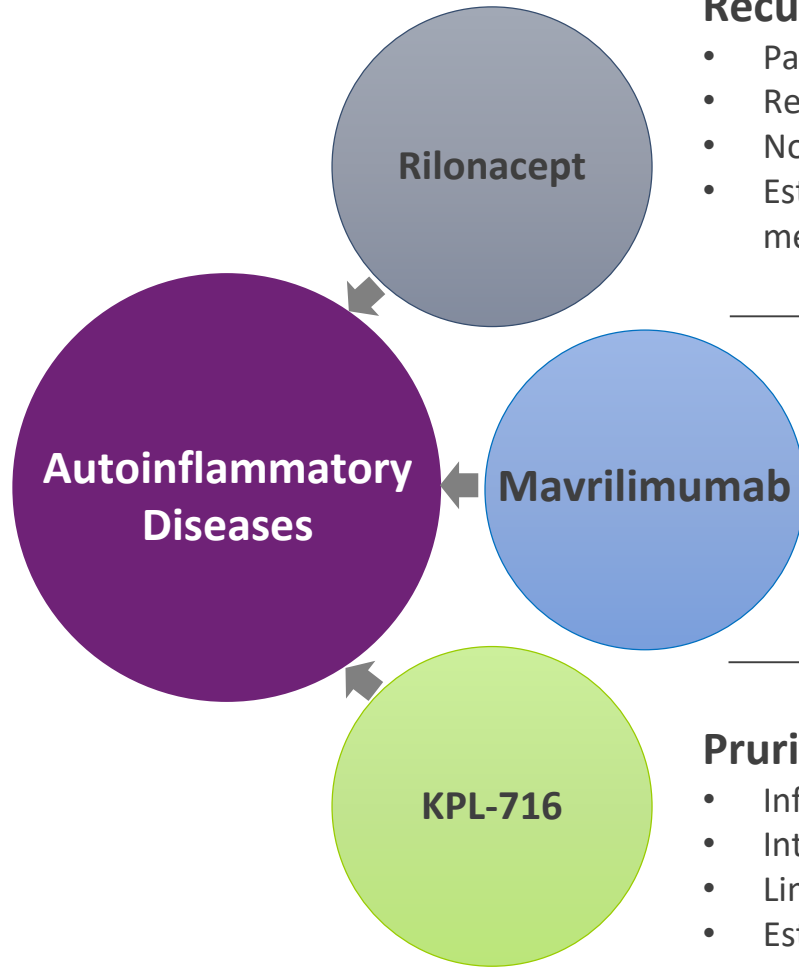
monoclonal antibody inhibiting signaling through OSMR β

IL-31 and oncostatin M are two key cytokines implicated in inflammation, pruritus and fibrosis³

IL-31, OSM and OSMR β mRNA are all upregulated in lesional biopsies of **prurigo nodularis** subjects vs. normal healthy controls

1) Dinarello CA, et al. Nat Rev Drug Discov 2012;11:633-652 and Brucato A, et al. Int Emerg Med 2018; 13:839-844; 2) Wicks, Roberts, Nature Review Immunology, 2015; Hamilton, Expert Review of Clinical Immunology, 11:4, 457-465; 3) Feeney et al., 2015 ACR/ARHP Annual Meeting, Abstract #1914; Ruzicka et al., N Engl J Med, 2017

Targeted exploration of attractive commercial opportunities



Recurrent Pericarditis

- Painful inflammatory cardiovascular disease
- Recurrence burden impacts morbidity and impairs quality of life
- No FDA-approved therapies
- Estimated U.S. prevalence ~40K patients seeking and receiving medical treatment

Expansion Potential

IL-1 mediated inflammatory cardiovascular conditions

Giant Cell Arteritis

- Chronic inflammation of medium-large blood vessels
- Acute events include permanent vision loss
- Only one FDA-approved therapy, but unmet need remains
- Estimated U.S. prevalence ~75K-150K patients

Vasculitides and inflammatory cardiomyopathies

Prurigo Nodularis

- Inflammatory skin disease characterized by pruritic lesions
- Intense desire to scratch results in a decrease in quality of life
- Limited and ineffective treatment options
- Estimated U.S. prevalence ~300K patients

Chronic pruritic conditions where inflammation and fibrosis may be present

Rilonacept – Phase 3

(IL-1 α and IL-1 β cytokine trap)



Rilonacept

Mavrilimumab

KPL-716

KPL-404

KPL-045

Opportunity in an inflammatory cardiovascular disease with no currently-approved therapies

Mechanism of Action¹	IL-1 α and IL-1 β cytokine trap
Lead Indication	Recurrent Pericarditis (approved in the U.S. for CAPS ⁴ , a rare autoinflammatory disease)
Addressable Population²	~14k patients in the U.S. (~3k refractory, ~6k poorly-controlled or steroid-dependent, ~5K steroid-intolerant)
Competition³	No FDA-approved therapies for recurrent pericarditis; differentiated from other marketed IL-1 agents
Clinical Development	Breakthrough Therapy designation granted; enrolling a global, pivotal Phase 3 clinical trial (RHAPSODY)
Rights	Worldwide (excluding MENA); BLA transfers to Kiniksa after receipt of positive Phase 3 clinical data

1) Brucato et al. JAMA. 2016, 316 (18): 1906-1912; Arcalyst Prescribing Information; 2) IQVIA PharMetrics Plus Claims Data 1/1/2013-3/31/2018; ClearView Analysis, UptoDate, Trinity Partners, Mayo Clin Proc. 2010 ;85 (6): 572-593; New Diagnostic Criteria for Acute Pericarditis: A Cardiac MRI Perspective, 2015 American College of Cardiology; 3) Drugs@FDA: Arcalyst Prescribing Information, Ilaris Prescribing Information, Kineret Prescribing Information; Kaiser et al. Rheumatol Int (2012) 32:295–299; Theodoropoulou et al. Pediatric Rheumatology 2015, 13(Suppl 1):P155 ; Fleischmann et al, 2017 ACR/ARHP Abstract 1196; Kosloski et al, J of Clin Pharm 2016, 56 (12) 1582-1590; Cohen et al. Arthritis Research & Therapy 2011, 13:R125; Cardiel et al. Arthritis Research & Therapy 2010, 12:R192; Hong et al. Lancet Oncol 2014, 15: 656-666; 4) Rilonacept (ARCALYST®) is approved and marketed for cryopyrin-associated periodic syndrome, in the United States by Regeneron Pharmaceuticals, Inc. We will assume the rights to this indication upon receiving approval for rilonacept in the recurrent pericarditis indication.



Recurrent pericarditis is a debilitating disease with no currently approved therapies

Pericarditis is chest pain caused by pericardial inflammation

Acute Pericarditis is diagnosed in patients with two of the following:

- (1) Retrosternal, pleuritic chest pain (85-90% of cases), (2) Abnormal ECG (ST elevation and PR depression); (3) Pericardial effusion^{1,2}

Often Idiopathic Etiology:

- Absent a clear sign of infection, it is assumed that most cases are post-viral, but are termed “idiopathic”

Recurrent Pericarditis:

- Diagnosed if there is recurrence after initial episode of acute pericarditis, with a symptom-free interval of > 4-6 weeks → First recurrence is followed by more recurrences between 20% - 30% of the time^{1,2}

Involvement of IL-1 in Recurrent Idiopathic Pericarditis:

- IL-1 has been implicated by several case reports and the AIRTRIP Study to be critical in idiopathic pericarditis

Recurrent pericarditis causes significant impairment of quality of life

Acute Episodes Have Favorable Prognosis:

- For most patients, acute pericarditis episodes last less than a few weeks and resolve on their own

Recurrent Disease Creates Burden on QOL:

- Although pericarditis is rarely life-threatening, patients may have significant impairment on quality of life due to chest pain:
 - Interference with sleep, as chest pain worsens while reclining
 - Lower productivity at work or school
 - Some patients may be on disability or close to it
 - Standard of care treatments have significant AEs

Complications Are Rare But Severe:

- Complications of pericarditis are rare (i.e., effusion, tamponade, constrictive pericarditis) but, when they occur, they can be life threatening and often require surgery

1) Maish et al European Heart Journal 2004, 25, 587-610; 2) Alder et Al. European Heart Journal, 2015 ESC guidelines

Patients with recurrent pericarditis have a high burden of disease that significantly impacts their overall health and quality of life



Impact of Pericarditis

30-40% of **refractory** and **steroid-dependent patients** experience ≥ 2 recurrences per year, significantly higher than the broad recurrent population

8% of refractory and steroid dependent patients experienced **cardiac tamponade** and 6% experienced **constrictive pericarditis** over the last 2 years

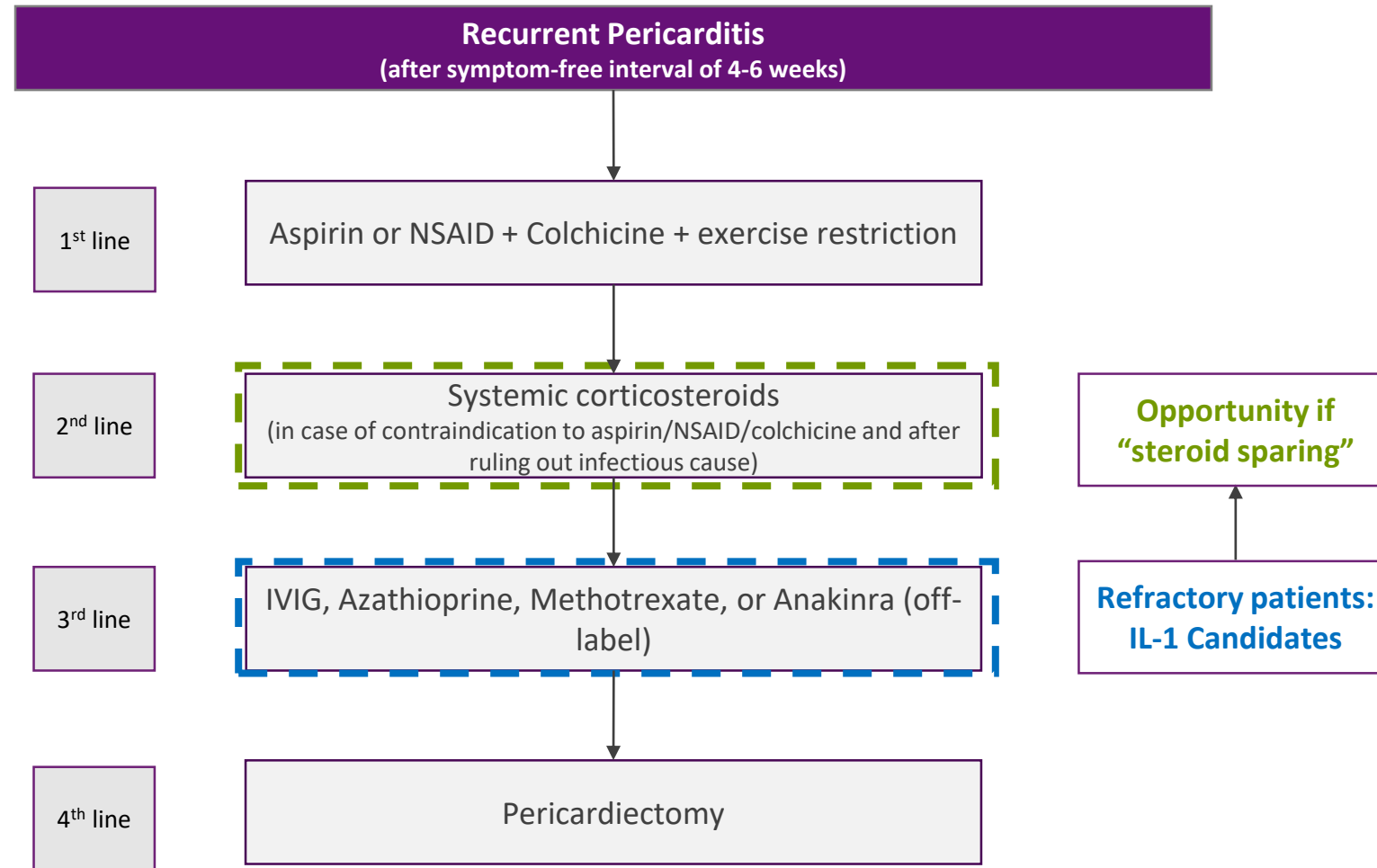
75% of refractory patients and 81% of steroid-dependent patients take **opioids** to deal with the intense pain associated with their disease

Unpredictability of disease activity causes **significant anxiety and depression**, resulting in disruption to day-to-day activities

Based on multiple claims data

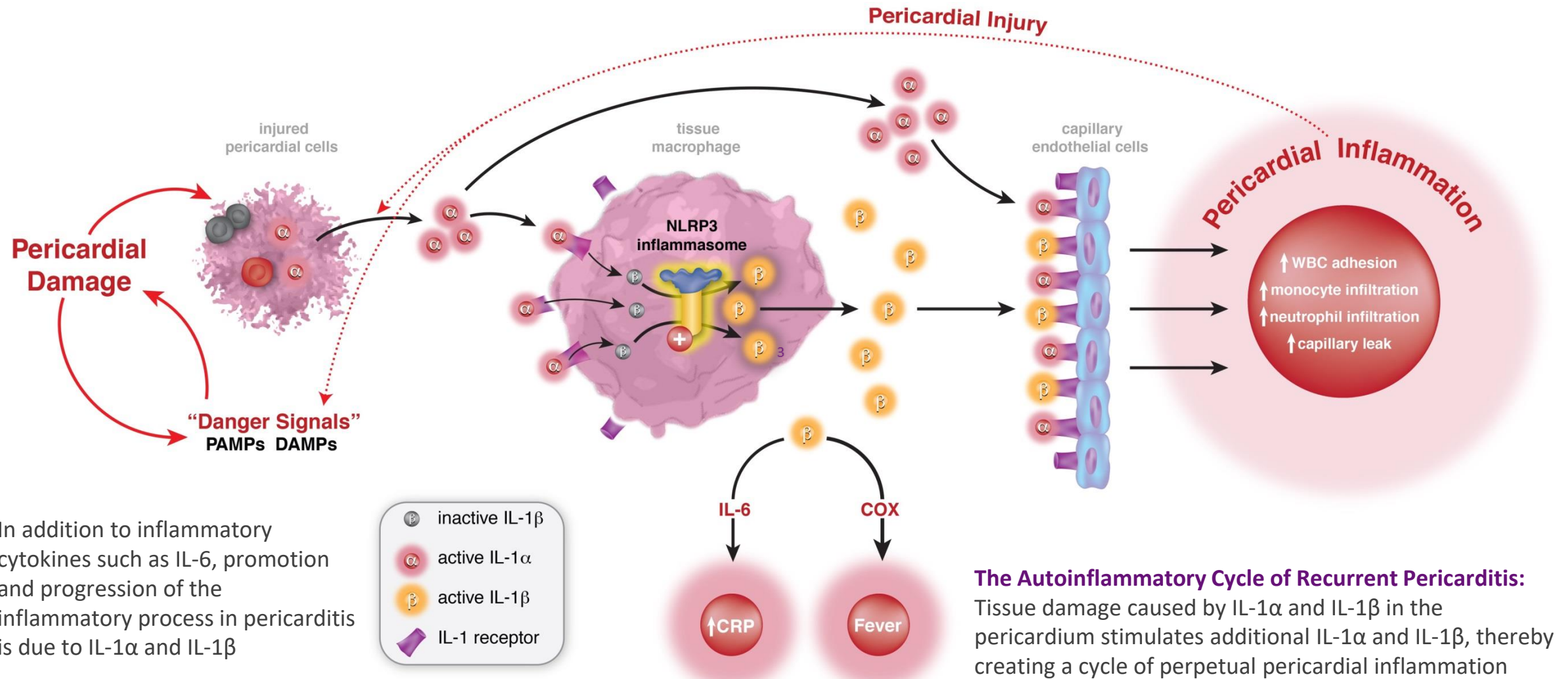
Source: IQVIA PharMetrics Plus Claims Data 1/1/2013 – 3/31/2018; ClearView Analysis.

Refractory patients are left with few treatment options; mitigating the dangers of long-term steroid use is an important unmet medical need



Sources: UptoDate, Trinity Partners, Kiniksa Analysis

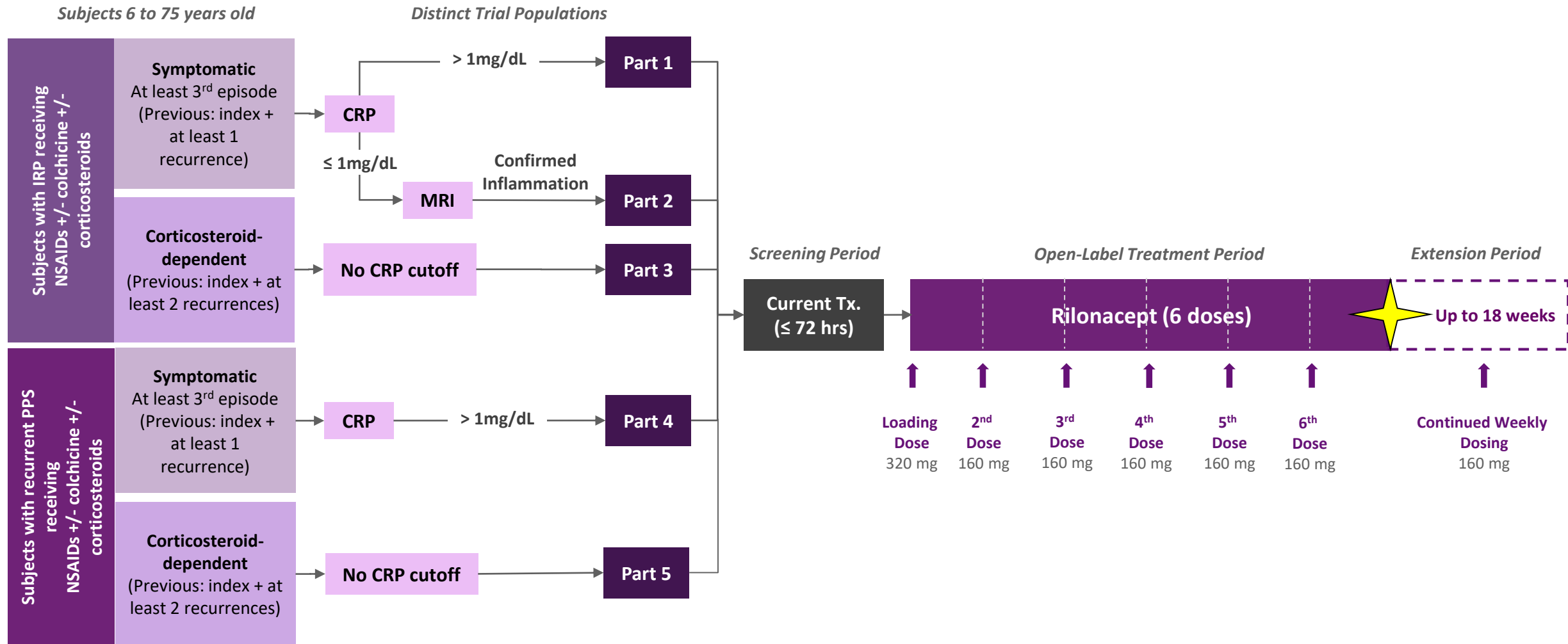
Role of IL-1 α and IL-1 β in the autoinflammatory cycle of recurrent pericarditis



CRP, C-reactive protein; DAMPs, damage-associated molecular patterns; IL, interleukin; PAMPs, pathogen-associated molecular patterns; WBC, white blood cell.

Brucato A, et al. Int Emerg Med 2018 <https://doi.org/10.1007/s11739-018-1907-x>
Dinarello CA, et al. Nat Rev Drug Discov 2012;11:633-652

Open-label Phase 2 clinical trial of rilonacept in pericarditis populations



Final open-label Phase 2 data: Baseline demographics and clinical characteristics

Baseline Demographics

General Characteristics	All Patients (n=25)
Unique patients, n	25
Mean age (range), yrs	42.8 (26-62)
Sex (male/female)	10/15
Race (white/African American)	22/3
Mean pericarditis episodes at enrollment ^a (range)	4.3 (3-10)
Mean disease duration (range), yrs	2.2 (0.2-7.9)

^aIncludes index, recurrent, and qualifying (if applicable) episodes

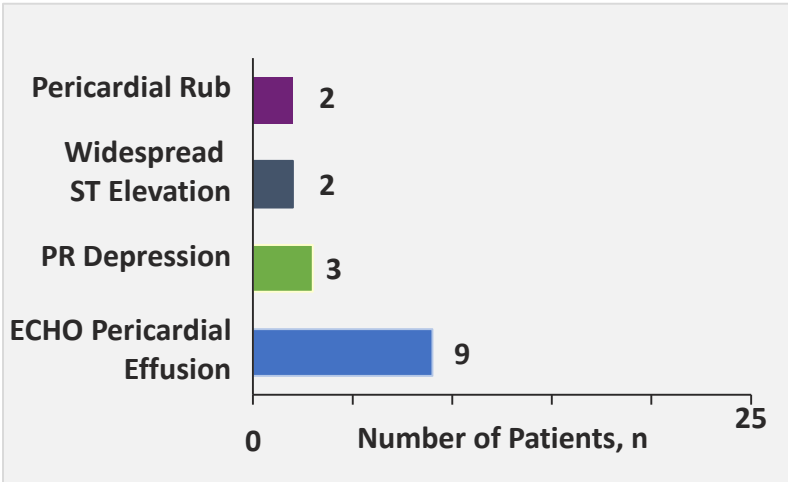
Clinical Characteristics

Disease Status:	Idiopathic RP			PPS	
	Active ^a	Active ^b	CS-dep ^c	Active ^d	CS-dep ^e
CRP requirement (mg/dL):	>1	≤1	N/A	>1	N/A
N:	12	3	6	1	3
Mean NRS ^f (SD)	4.6 (1.7)	4.7 (3.1)	1.2 (0.8)	4.0 (N/A)	2.0 (2.7)
Mean CRP (SD), mg/dL	4.9 (5.8)	0.5 (0.4)	0.2 (0.1)	1.1 (N/A)	0.1 (0.1)

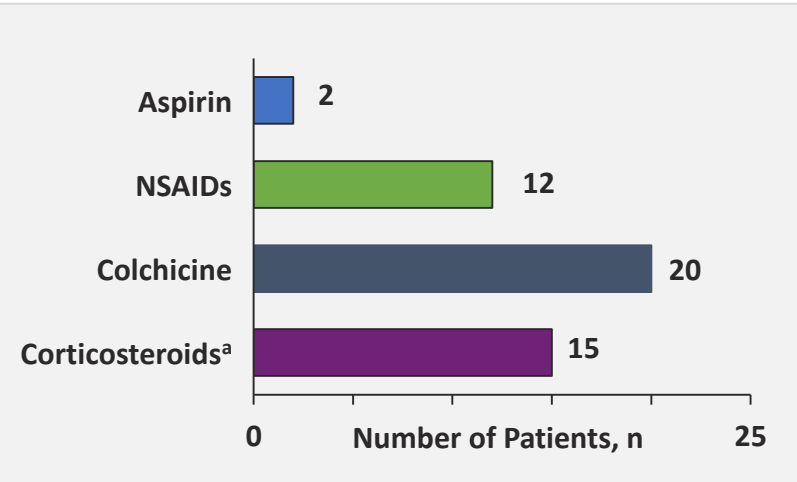
^aPart 1; ^bPart 2; ^cPart 3; ^dPart 4; ^ePart 5; ^f11-point numeric scale, ranging from zero (0, no pain) to ten (10, pain as bad as possible); CRP, C-reactive protein; CS-dep, corticosteroid-dependent; NRS, numeric rating scale; PPS, post-pericardiotomy syndrome

Final open-label Phase 2 data: Baseline demographics and clinical characteristics

Pericarditis Manifestations at Baseline; All Patients

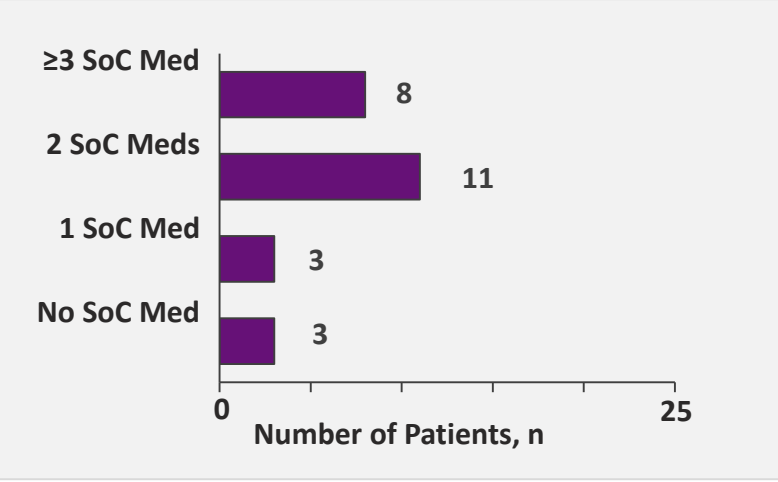


SoC Medications Received at Baseline; All Patients

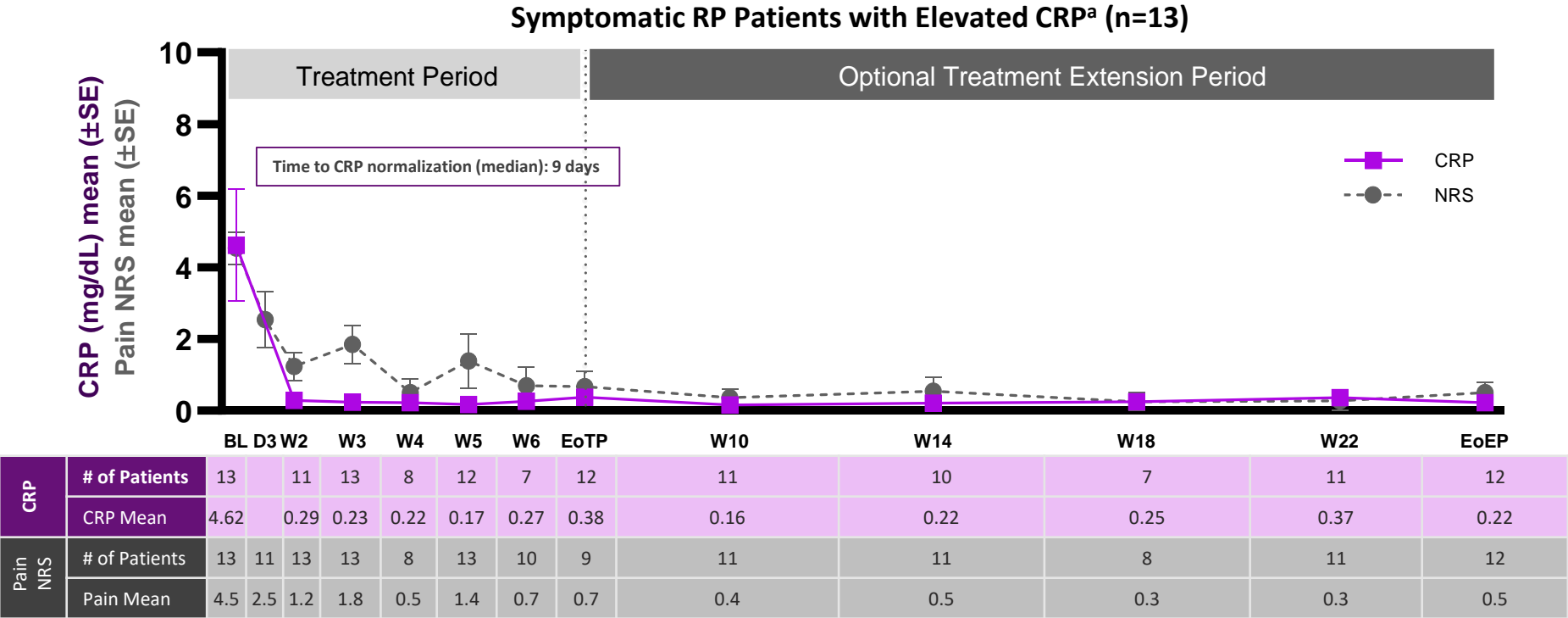


^aMean baseline prednisone dose among patients receiving prednisone: 12.7 mg/day (range from 1 to 50mg/day)

SoC Medication Categories at Baseline; All Patients

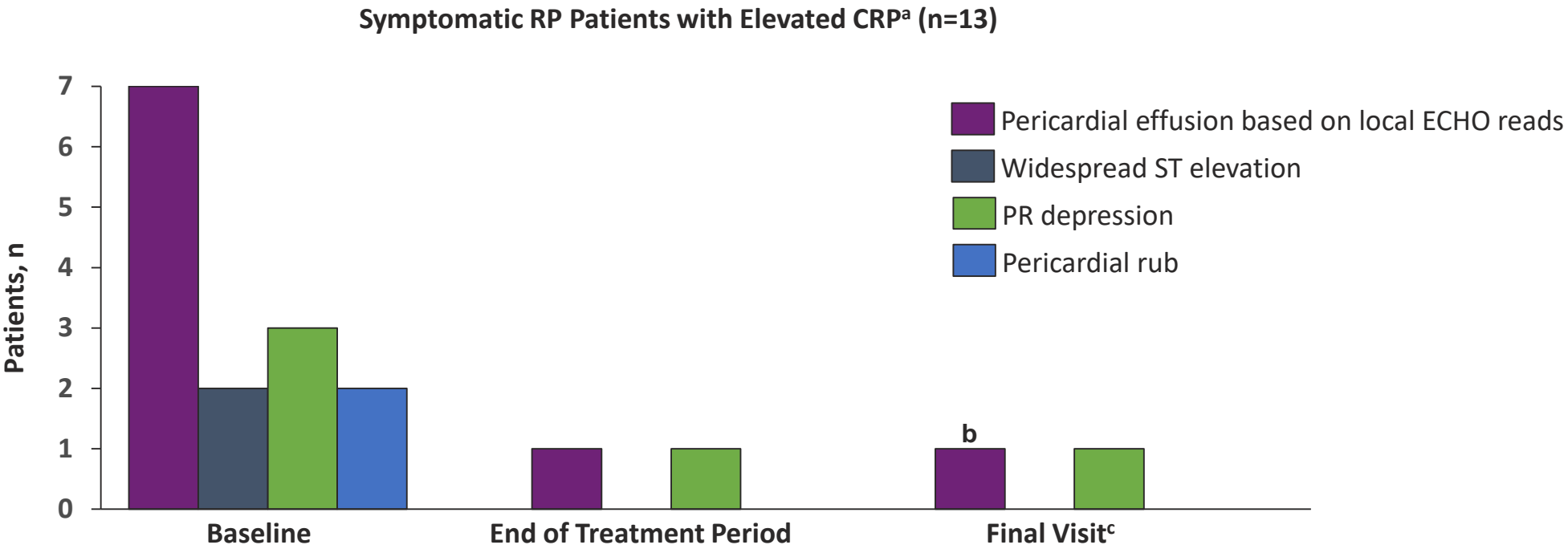


Final open-label Phase 2 data: Rapid, sustained, and clinically meaningful reductions in both reported pain and inflammation (Parts 1 and 4)



^aParts 1 and 4 combined. Patients with elevated CRP and symptomatic disease (Parts 1 and 4) are most representative of real-world recurrent pericarditis. Inclusion and exclusion criteria for the ongoing Phase 3 study RHAPSODY align with this patient population (clinicaltrials.gov/NCT03737110).
EoTP, end of treatment period; EoEP, end of extension period; CRP, C-reactive protein; NRS, numeric rating scale

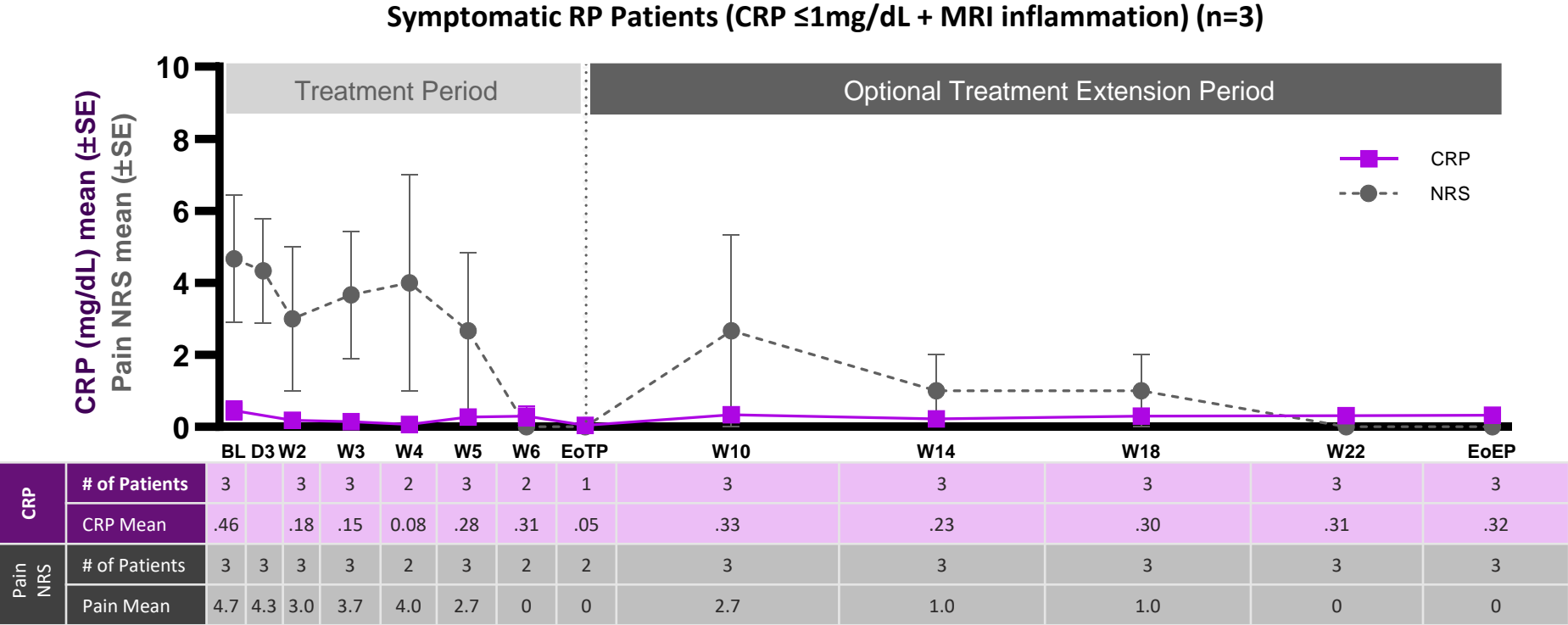
Final open-label Phase 2 data: Pericardial signs resolved or improved in all patients (Parts 1 and 4)



^aPart 1 and 4; ^bPatient with effusion at baseline, no effusion at EoT Visit and trivial effusion (not pathological) at Final Visit;
^cn=12; one patient discontinued study drug in TP due to SAE; no effusion at baseline or EoT Visit



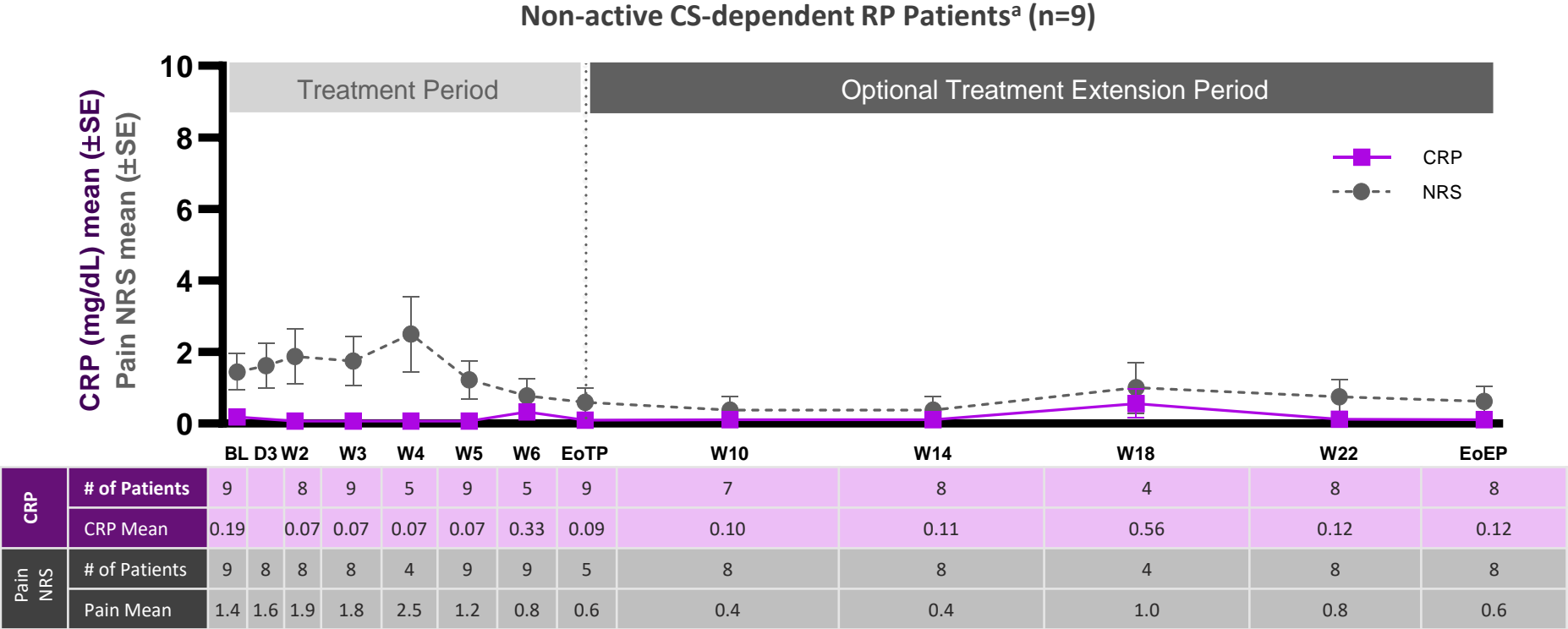
Final open-label Phase 2 data: Reduction in both reported pain and inflammation in symptomatic patients without elevated CRP and with MRI inflammation (Part 2)



EoTP, end of treatment period; EoEP, end of extension period; CRP, C-reactive protein; MRI, magnetic resonance imaging

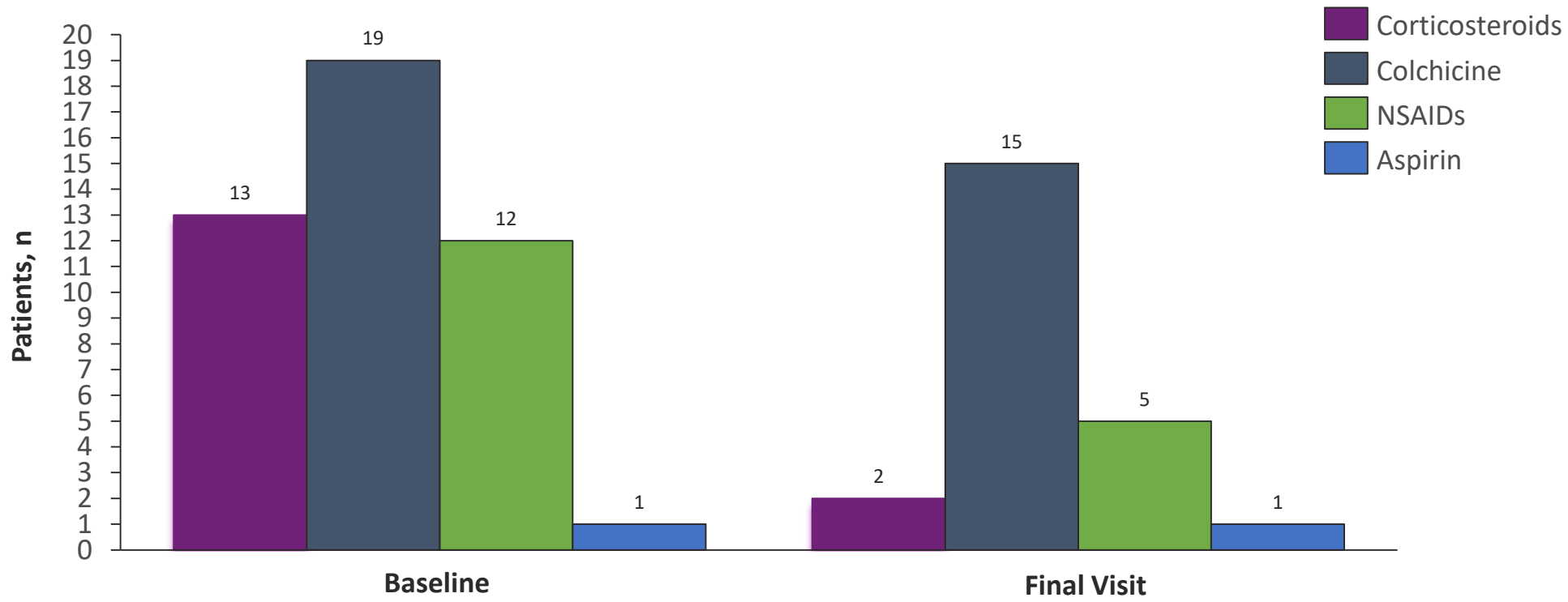


Final open-label Phase 2 data: Corticosteroid-dependent patients maintained low reported pain and inflammation without disease recurrence despite tapering off the corticosteroids while rilonacept treatment continued (Parts 3 and 5)



^aPart 3 and Part 5 combined
EoTP, end of treatment period; EoEP, end of extension period; CRP, C-reactive protein; NRS, numeric rating scale

Final open-label Phase 2 data: All patients on corticosteroids (CS) at baseline who completed 24 weeks of treatment stopped or tapered CS during rilonacept treatment without experiencing a pericarditis recurrence



Final open-label Phase 2 data: Of 13 patients on corticosteroids (CS) at baseline who completed 24 weeks of treatment, 11 discontinued CS and the CS dose was successfully tapered in the remaining 2 patients

	Idiopathic			PPS		Idiopathic or PPS
Disease Status:	Active ^a	Active ^b	CS-dep ^c	Active ^d	CS-dep ^e	All ^{a-e}
CRP requirement (mg/dL):	>1	≤1	N/A	>1	N/A	N/A
N:	12	3	6	1	3	25
Baseline						
Patients on prednisone ^f , n	4	2	6	0	3	15
Mean dose (mg/day)	8.4	40.0	8.9	0	7.7	12.7
Min	1.0	30.0	2.5	0	3.0	1.0
Max	12.5	50.0	30	0	15.0	50.0
Corticosteroid Changed During TP and EP Combined						
Prednisone dose decreased ^{g, h}	0/3	1/2 (50.0)	1/5 (20.0)	0/0	0/3	2/13 (15.4)
Prednisone stopped ^{g, h}	3/3 (100)	1/2 (50.0)	4/5 (80.0)	0/0	3/3 (100)	11/13 (84.6)
Prednisone dose increased ^g	0/3	0/2	0/5	0/0	0/3	0/13
Prednisone initiated ⁱ	0/11	0/3	0/5	0/1	0/3	0/23

^aPart 1; ^bPart 2; ^cPart 3; ^dPart 4; ^ePart 5; ^f2 patients on prednisone at baseline did not enter EP (one in Part 1 and in Part 3)

^gRefers to patients who entered the study on prednisone; ^h1 patient decreased prednisone dose in TP, and 1 stopped

prednisone in TP (both in Part 2); ⁱRefers to all patients in EP

CRP, C-reactive protein; CS-dep, corticosteroid-dependent; PPS, post-pericardiotomy syndrome; TP, treatment period; EP, extension period

Final open-label Phase 2 data: Rilonacept treatment resulted in improvement of PROMIS® Global Health scores for Physical and Mental Global Health

	Idiopathic or PPS	
	Active ^b (n=16)	CS-dependent ^c (n=9)
Global Physical Health, mean (SD)		
Baseline	39.94 (8.941)	43.3 (5.311)
End of TP	51.35 (7.962)	45.09 (4.057)
Final Visit	51.32 (6.564)	46.81 (9.266)
Global Mental Health, mean (SD)		
Baseline	44.5 (10.484)	46.49 (7.767)
End of TP	50.13 (11.325)	47.91 (5.509)
Final Visit	50.54 (10.995)	50.66 (6.299)

^aPROMIS® - Patient Reported Outcomes Measurement Information System. The higher the score, the better global health is. US national average score for Global Physical and Mental Health is 50 (SD 10); ^bPart 1, 2, and 4; ^cPart 3 and 5

Final open-label Phase 2 data: Annualized incidence of pericarditis episodes decreased during rilonacept treatment in the study

Disease Status: CRP requirement (mg/dL): N:	Idiopathic			PPS	
	Active ^a	Active ^b	CS-dep ^c	Active ^d	CS-dep ^e
	>1	≤1	N/A	>1	N/A
	12	3	6	1	3
Prior to the study ^f					
Pericarditis episodes per year, mean (SD)	4.4 (4.68)	2.0 (1.75)	4.5 (2.58)	1.3 (N/A)	3.7 (3.02)
During the study ^g					
Patients with pericarditis episodes, n	1 ^h	0	0	0	0
Pericarditis episodes per year, mean (SD)	0.18 (0.62)	0	0	0	0

^aPart 1; ^bPart 2; ^cPart 3; ^dPart 4; ^ePart 5; ^fEpisodes at enrollment include index, prior recurrences, and current episode; ^gEpisodes during the study include recurrences during TP and EP combined. Pericarditis recurrence during the study was based on Investigator’s judgement; ^hPatient had a mild pericarditis recurrence in TP, 5 days duration, with NRS pain increase from 0 to 2, CRP 0.10 mg/dL, not requiring addition of new medication to treat pericarditis; CRP, C-reactive protein; CS-dep, corticosteroid-dependent; PPS, post-pericardiotomy syndrome

Final open-label Phase 2 data: Summary of adverse events

Disease Status: CRP requirement (mg/dL): N:	Idiopathic			PPS		Idiopathic or PPS		
	Active ^a	Active ^b	CS-dep ^c	Active ^d	CS-dep ^e	Active ^{a, b, d}	CS-dep ^{c, e}	All ^{a-e}
	>1	≤1	N/A	>1	N/A	N/A	N/A	N/A
	12	3	6	1	3	16	9	25
≥1 TEAE, n (%)	12 (100)	3 (100)	6 (100)	1 (100)	3 (100)	16 (100)	9 (100)	25 (100)
≥1 treatment-related TEAE, n (%)	9 (75)	2 (66.7)	3 (50)	1 (100)	2 (66.7)	12 (75)	5 (55.6)	17 (68)
≥1 serious TEAE, n (%)	2 (16.7)	0	0	0	0	2 (12.5)	0	2 (8)
≥1 treatment-related serious TEAE, n (%)	1 (8.3)	0	0	0	0	1 (6.3)	0	1 (4)
≥1 TEAE leading to treatment discontinuation, n (%)	1 (8.3)	0	0	0	0	1 (6.3)	0	1 (4)
≥1 TEAE leading to death, n (%)	0	0	0	0	0	0	0	0
TEAEs by severity, n (%)								
Mild	9 (75)	3 (100)	4 (66.7)	1 (100)	2 (66.7)	13 (81.3)	6 (66.7)	19 (76)
Moderate	2 (16.7)	0	2 (33.3)	0	0	2 (12.5)	2 (22.2)	4 (16)
Severe	1 (8.3)	0	0	0	1 (33.3)	1 (6.3)	1 (11.1)	2 (8)
Reactions at injection site ^f , n (%)	5 (41.7)	1 (33.3)	3 (50)	1 (100)	2 (66.7)	7 (43.8)	5 (55.6)	12 (48)

^aPart 1; ^bPart 2; ^cPart 3; ^dPart 4; ^ePart 5; ^fIncludes injection site bruising, erythema, pain, reaction, joint warmth, and application site bruising and erythema;

CRP, C-reactive protein, CS-dep, corticosteroid-dependent; PPS, post-pericardiotomy syndrome

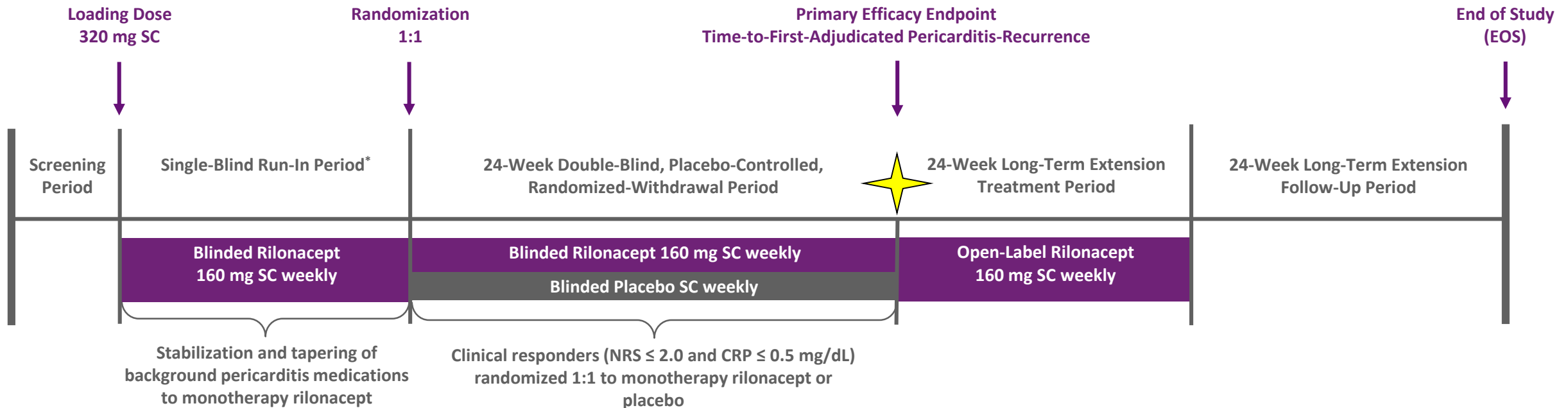
Final open-label Phase 2 data: Summary of adverse events

- There were 2 serious treatment-emergent AEs reported in Part 1, both of which resolved
 - 1 patient with subcutaneous abscess (possibly related to study drug that resolved with medical management) discontinued rilonacept treatment
 - 1 patient with atypical chest pain (not related to study drug) continued rilonacept treatment
- AEs observed with rilonacept treatment are consistent with the known safety profile of rilonacept
- The most common AEs were observed in the general disorders and administration site conditions (injection site reactions), infections and infestations, and musculoskeletal and connective tissue disorders classes

Case Study: Treatment/retreatment of recurrent pericarditis with rilonacept

- **Patient**
 - 50-year-old female with idiopathic pericarditis and 1 prior recurrence, enrolled in Part 1 during her third episode (pain NRS 6/10; CRP 8.85 mg/dL; pericardial effusion on echocardiography) while receiving colchicine 0.6 mg bid.
- **Pain and CRP Reduction During the Study**
 - Addition of rilonacept to colchicine background rapidly reduced pain (week 2 pain NRS 1/10; week 24 pain NRS 0/10), decreased CRP (week 2 CRP 0.66 mg/dL; week 24 CRP 0.09 mg/dL), and resolved pericardial effusion.
- **Safety**
 - Mild, transient injection site reactions occurred for 21 of 24 rilonacept injections; the patient also had reported mild AEs of heartburn, common cold, worsening of elevated LFTs, elevated cholesterol, elevated HDL, intermittent chest discomfort and elevated CK
- **After Completing the EP**
 - Approximately 8 weeks after rilonacept discontinuation, while continuing on colchicine 0.6 mg bid, the patient presented with pericarditis symptoms requiring addition of celecoxib 200 mg/day. Ten weeks later the patient developed frank pericarditis recurrence (pain NRS 7/10; CRP 23.1 mg/dL) and cardiac tamponade requiring pericardiocentesis. The patient was re-enrolled in the study.
- **Pain and CRP Normalized and Pericardial Effusion Resolved with Rilonacept Retreatment**
 - Rapid improvements in pain and CRP were observed after the first rilonacept administration (week 2 pain NRS 0/10; CRP 0.57 mg/dL). At the week 7 visit, NRS pain was 1/10, CRP was 0.09 mg/dL, and there was no evidence of pericardial effusion on echocardiography. At the last study evaluation available (1 month EP), NRS pain was 0/10 and CRP remained normal (0.08 mg/dL). At the Final Visit NRS pain was 0/10 and CRP remained normal (0.14 mg/dL).
- **Safety**
 - Mild, transient injection site reactions occurred in 17 out of 24 rilonacept administrations; the patient also developed mild AEs of hypokalemia, decreased WBC count, and increased lipids.

Pivotal Phase 3 clinical trial of rilonacept for recurrent pericarditis



Inclusion Criteria:

- All etiologies except infection and malignancy
- Present at screening with at least a third pericarditis episode, defined as at least 1 day with NRS pain of ≥ 4 and CRP value ≥ 1 mg/dL within the 7-day period prior to first study drug administration
- Concomitant NSAIDs and/or colchicine and/or oral corticosteroid treatment in any combination

Primary Outcome Measure (24 weeks):

- Time-to-first-adjudicated pericarditis-recurrence in the RW period

Secondary Outcome Measures (24-weeks):

- Proportion of subjects who maintained Clinical Response
- Percentage of days with no or minimal pain
- Proportion of subjects with absent or minimal pericarditis symptoms
- Proportion of subjects with adverse events

* Duration of the run-in period undisclosed in order to maintain study subjects blinded to the start of the randomized-withdrawal period.

Recurrent pericarditis prevalence in the U.S. estimated to be ~40k patients*

Addressable opportunity for rilonacept in the U.S. estimated to be ~14K patients*

~3k

**Refractory
Patients**

+

~6k

**Poorly-Controlled or
Steroid-Dependent
Patients**

+

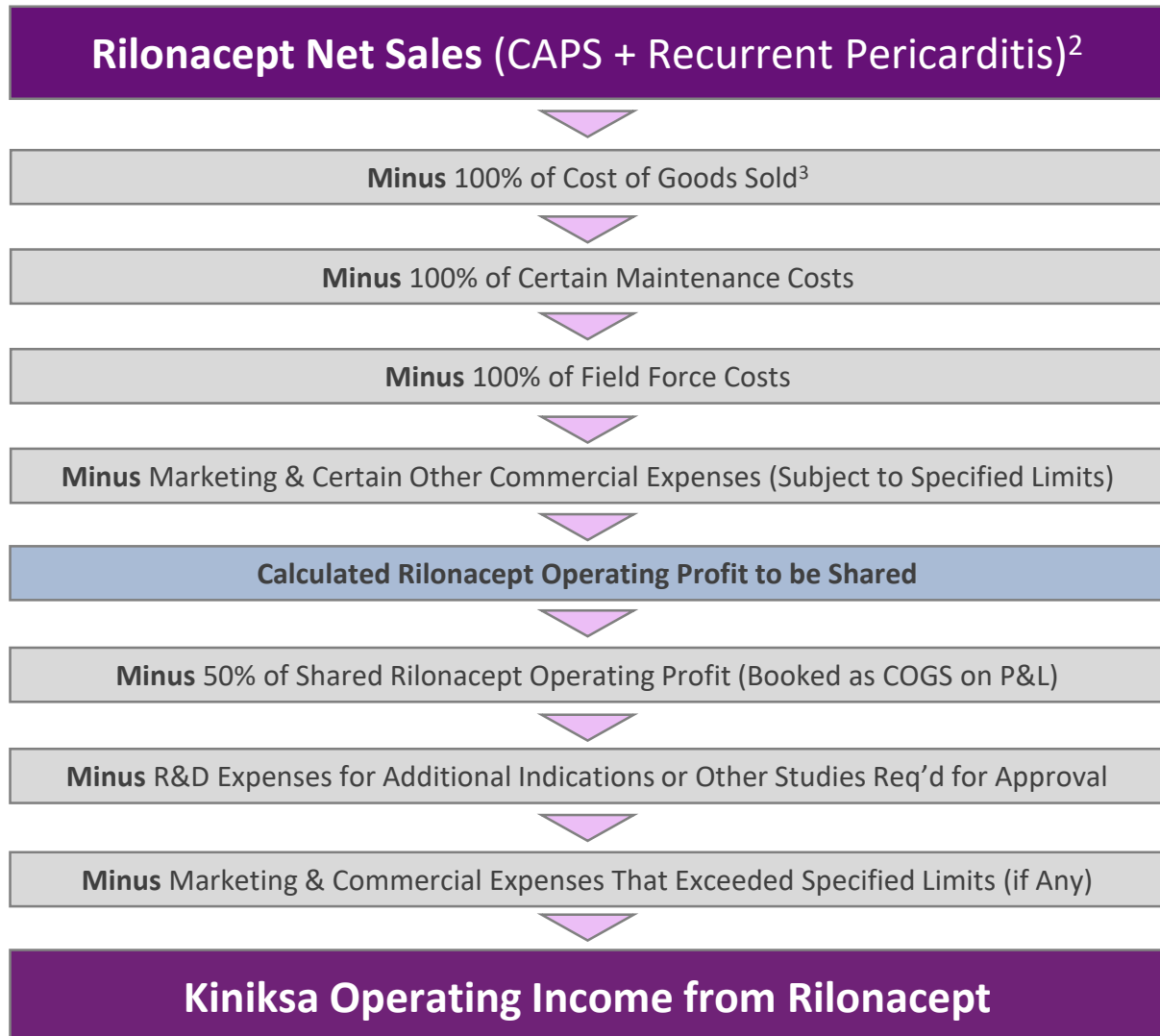
~5k

**Steroid-Intolerant
Patients Refractory to
NSAIDs and Colchicine**

Based on multiple claims data

* Estimates based upon the diagnosed and treated patients in the healthcare system per IQVIA PharMetrics Plus Claims Data 1/1/2013 – 3/31/2018; ClearView Analysis.

Summary of rilonacept profit share arrangement with Regeneron¹



- Upfront payment: \$5 million
- Future regulatory milestones: \$27.5 million in aggregate
- Kiniksa covers 100% of development expenses related to approval of additional indications
- In the U.S. and Japan, the initial license covers all indications other than CAPS⁴, DIRA⁵, oncology, and local application for eye and inner ear
- Kiniksa has rights to develop and commercialize rilonacept in our field worldwide, with the exception of MENA⁶
- After receipt of positive Phase 3 clinical data, the BLA⁷ for rilonacept transfers to Kiniksa
- Upon approval for a new indication, the scope of the license expands to include CAPS and DIRA in the US and Japan, and we will assume the sales and distribution of rilonacept in these additional indications
- Profits on sales of rilonacept will be equally split after deducting certain commercialization expenses subject to specified limits

1) Subject to description contained in definitive agreement; 2) Global net sales for CAPS and recurrent pericarditis recognized as revenue on Kiniksa's income statement; 3) Including cost of product purchased from Regeneron; 4) CAPS = Cryopyrin-Associated Periodic Syndromes; 5) DIRA = deficiency of the interleukin-1 receptor antagonist 6) MENA = Middle East and North Africa; 7) BLA = Biologics License Application

Mavrilimumab – Phase 2

(monoclonal antibody inhibitor targeting GM-CSFR α)

Rilonacept

Mavrilimumab

KPL-716

KPL-404

KPL-045

Mechanistic rationale for focusing on high unmet need vasculitides & inflammatory cardiomyopathies

Mechanism of Action¹	Monoclonal antibody inhibitor targeting GM-CSFR α ; a key mediator of inflammation and autoimmunity
Lead Indication	Giant Cell Arteritis (GCA)
Addressable Population²	~75k - 150k prevalent in the U.S.; similar prevalence in other major markets
Competition³	Only one FDA-approved therapy for GCA and unmet needs remain
Clinical Development	Enrolling a global Phase 2 proof-of-concept clinical trial
Rights	Worldwide

1) Sources: Wicks, Roberts, Nature Review Immunology, 2015; Hamilton, Expert Review of Clinical Immunology, 11:4, 457-465; 2) Chandran et al., Scand J Rheumatol, 2015; Trinity Consulting – HCUP/Medicare Data, Quantitative Survey (n=102 rheumatologists); 3) Cortellis, UpToDate; Correspondence, Trial of Tocilizumab in Giant-Cell Arteritis, NEJM, 2017

GCA is a serious condition characterized by inflammation of medium-large blood vessels; it can lead to bilateral blindness if left untreated

1 Chronic Inflammation of Medium-Large Blood Vessels

- GCA is characterized by inflammation of medium-large blood vessels with **predisposition for the cranial branches of the carotid artery** and is typically **found in patients over 50 years old**.
- Due to the impact on the carotid arteries, GCA is **often characterized by temporal specific symptoms like headaches**, jaw claudication and scalp tenderness

2 If left untreated, GCA can cause serious complications

- While the onset of symptoms tends to be subacute, patients can experience **acute events including permanent vision loss (~10-20% of patients)** and/or aneurysms/dissections (~1-6% of patients)
- Due to the threat of these more serious complications, giant cell arteritis is **considered a medical emergency**; treatment with high-dose steroids effectively prevents complications

3 GCA variants associated with unique presentations

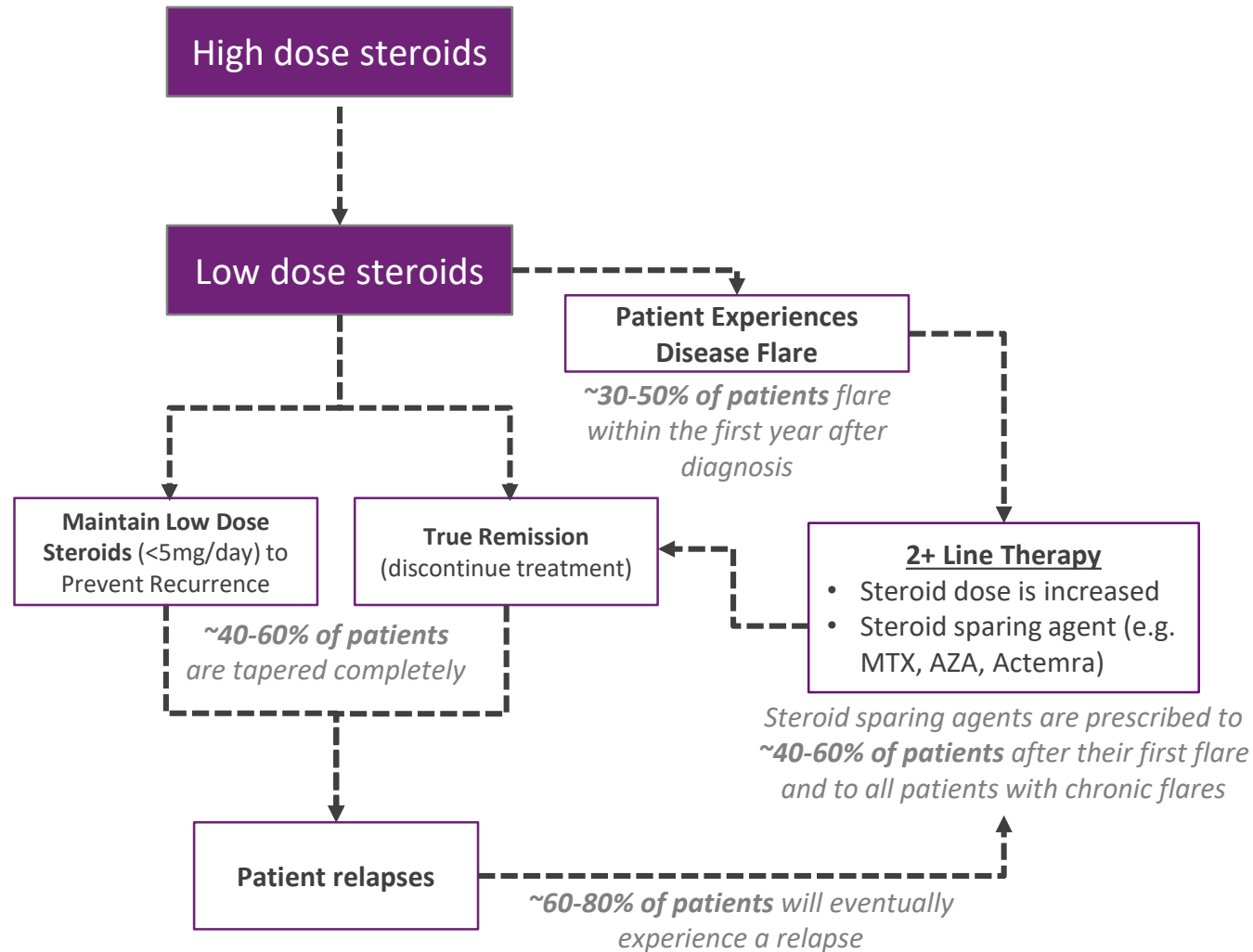
- **LV-GCA**, characterized by the involvement of the aorta and its major proximal branches, is estimated to be involved in anywhere from **~30-80% of patients**
- **~40-50%** of GCA patients **suffer from Polymyalgia Rheumatica**, a rheumatic disease characterized by widespread aching and stiffness; symptoms are relieved immediately upon starting on low-dose steroids

“ There is an urgency of treatment with these patients, compared to other conditions it's serious.” – Rheumatologist

“ There are people out there that need to get this disease under control, but they never receive the correct treatment, this is life threatening!” – Rheumatologist

“ I hate steroids, the long –term side effects are sometimes worse than the disease but, I definitely don't want to go blind.”
– GCA Patient

Current treatment paradigm for GCA involves high-dose steroids for all patients upon clinical suspicion



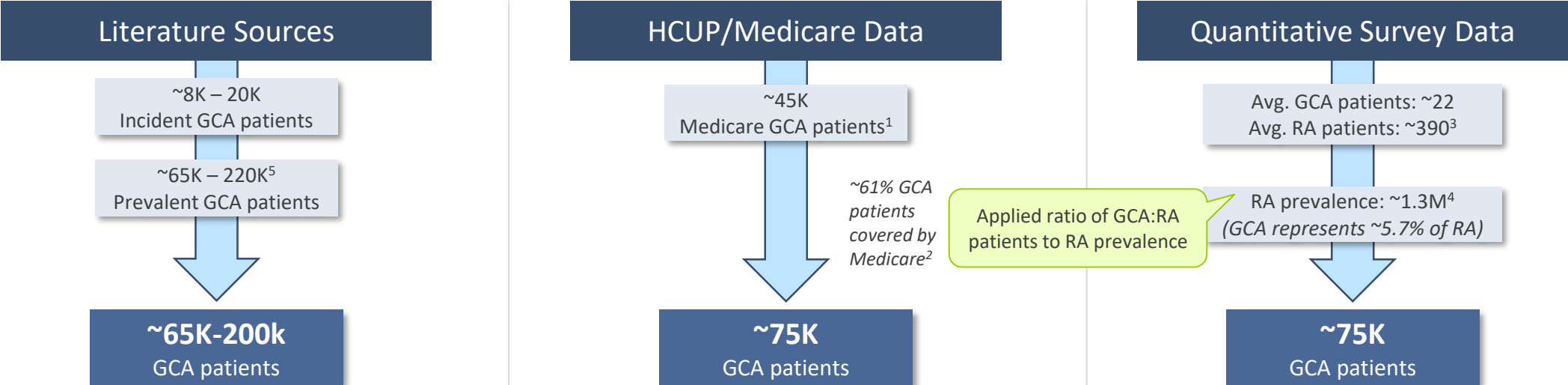
All Patient Receive High-Dose Steroids:

- High-dose steroids are **effective at preventing disease related complications**; however, they may lead to **life altering side-effects** like osteoporosis and diabetes

No Algorithmic Treatment Approach:

- A few treaters initiate **steroid sparing agents** early on in the treatment paradigm, relying on them more for the chronic treatment of GCA
- Others treat GCA in more of a stepwise fashion, adding new agents on top of steroids only following disease flares/relapse

GCA prevalence in the U.S. estimated to be between 75k-150k



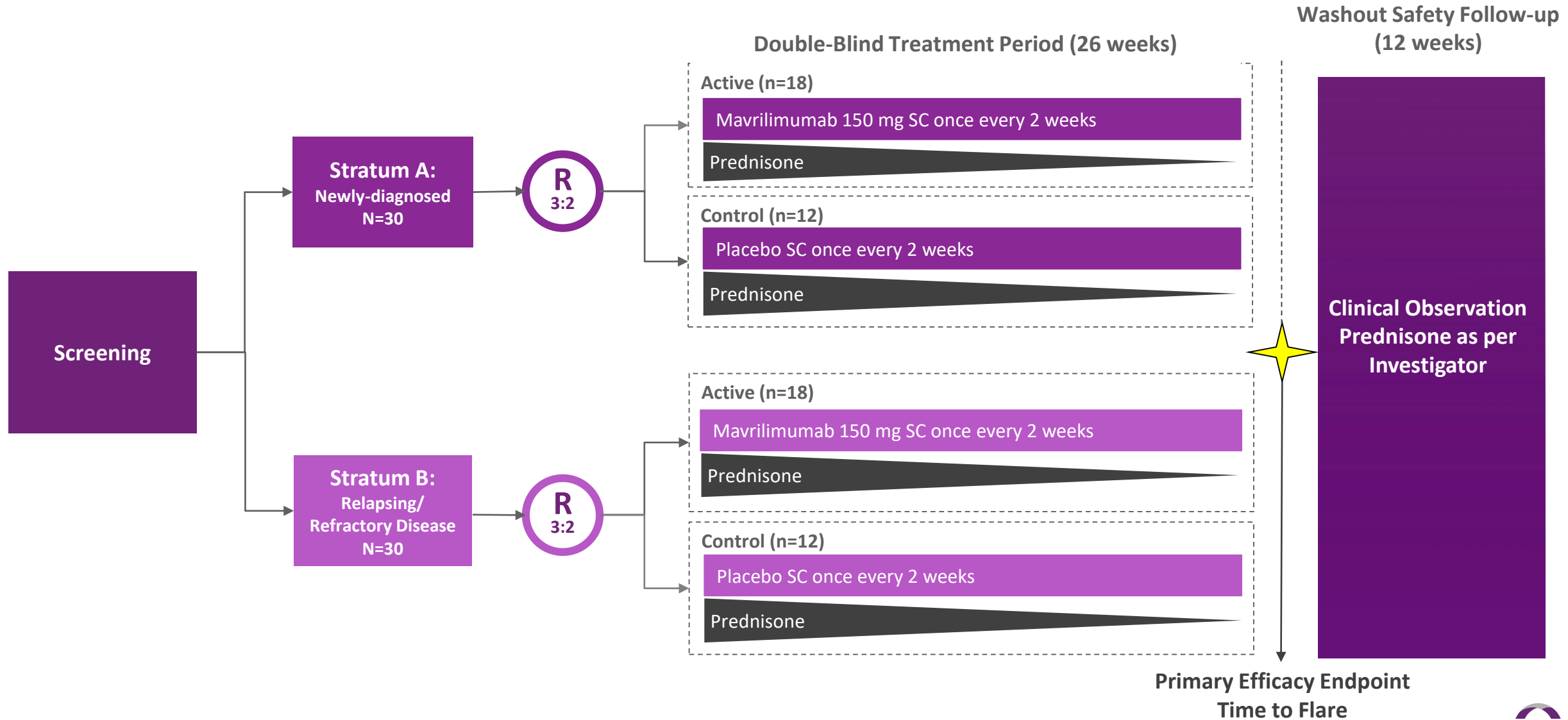
Key Considerations to Market Sizing Approach

Wide range	Under-representation	Under-representation
<ul style="list-style-type: none">• High geographic variation: GCA prevalence estimates vary across geographies with Northern European populations showing the highest rates and Asian populations the lowest• Weighted by US demographics: Given the demographic breakdown of the US, prevalence of GCA is likely ~75k-150k (less than that of purely Northern Europeans, but more than estimates from Asian countries)	<ul style="list-style-type: none">• Represents Actively Managed Patients: Medicare analysis does not capture GCA patients who were not actively managed within a given year; thus, the estimate from this analysis will exclude some remission patients or patients likely to relapse	<ul style="list-style-type: none">• Represents patients actively seen by a Rheum: Rheumatologists reported the number of GCA patients they manage. Patients who are not actively managed would likely be excluded from these estimates

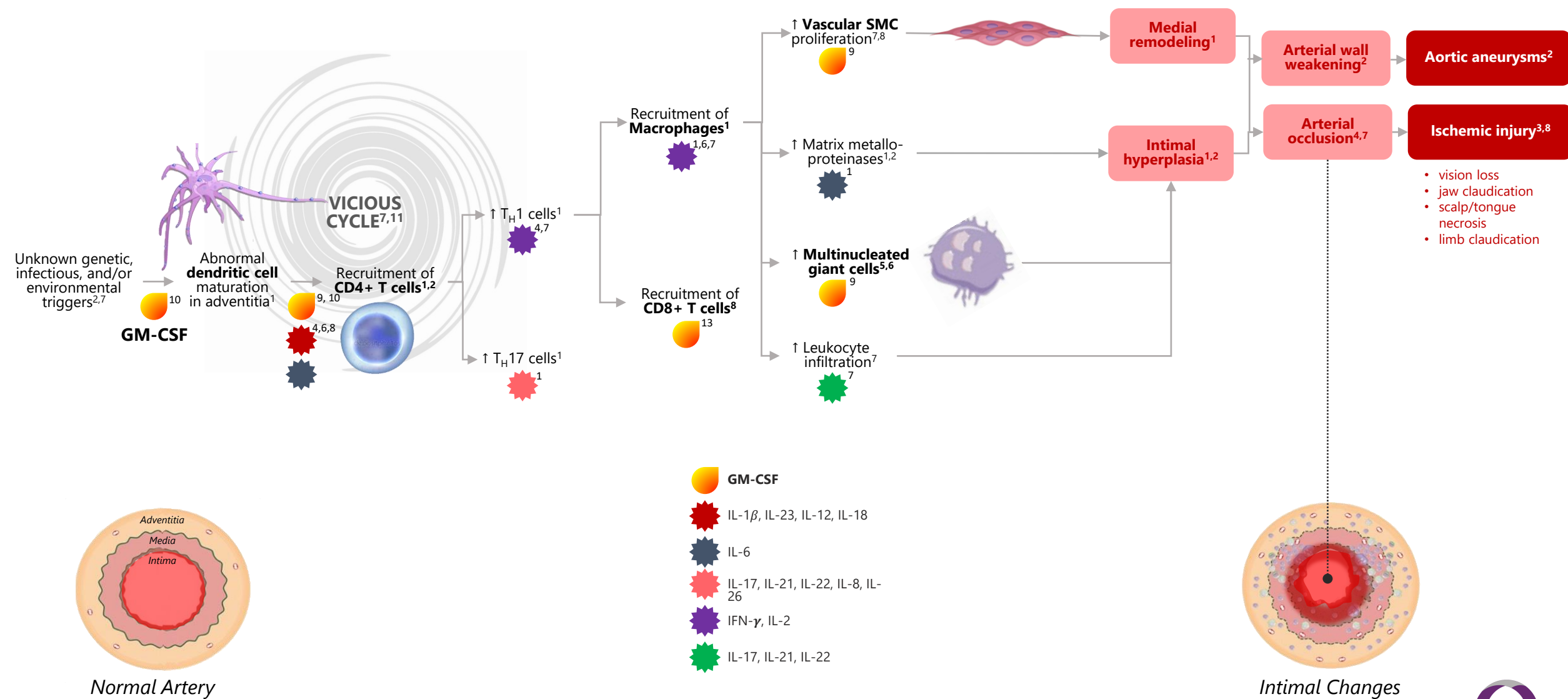
Sources: 1.) Medicare analysis conducted 1/2018 2.) Trinity Partner’s Quantitative Primary Market Research (n=74) 3.) Trinity Partner’s Quantitative Primary Market Research (n=196) (includes data from screener portion of survey) 4.) Prevalence of rheumatoid arthritis in the United States adult population in healthcare claims databases, 2004-2014, Hunter et al. 2017, 5.) Crowson et. al, 2017



Randomized, double-blind, placebo-controlled Phase 2 study of mavrilimumab in GCA



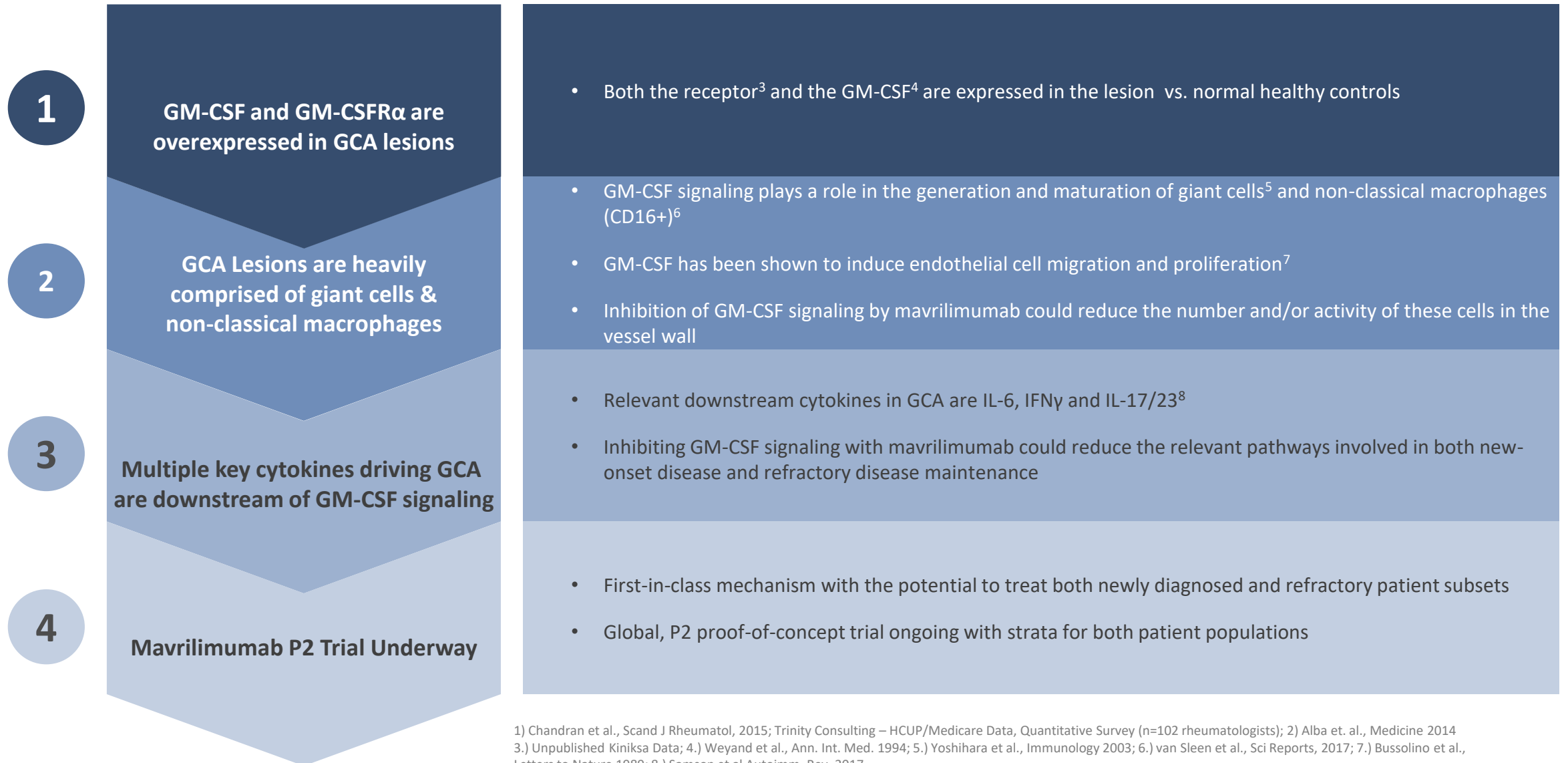
Central Role of GM-CSF in Pathophysiology of Giant Cell Arteritis



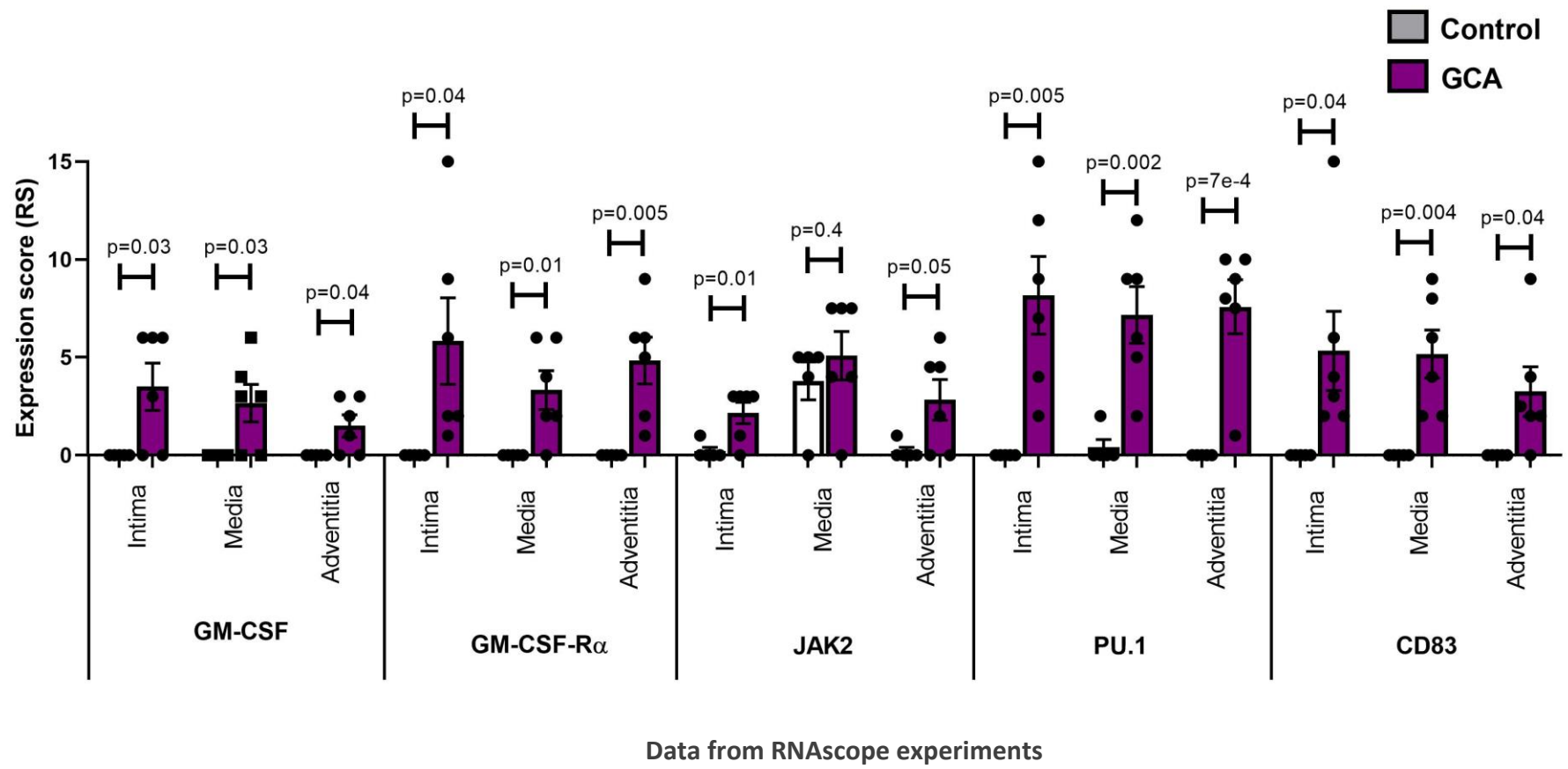
1. Al-Mousawi AZ, et al. Ophthalmol Ther 2019;8:177-193. 2. Boura P, et al. Updates in the Diagnosis and Treatment of Vasculitis. Chapter 4 2013; <http://dx.doi.org/10.5772/55222>. 3. Cho HJ, et al. Disease-a-Month 2017;63:88-91. 4. Ly KH, et al. Autoimm Review 2010;9:635-645. 5. Lazarewicz K, et al. BMJ 2019;365:l1964 doi: 10.1136/bmj.l1964. 6. O'Neill L, et al. Rheumatol 2016;55:1921-1931. 7. Planas-Rigol E, et al. J Vasc 2016;1:2:DOI: 10.4172/2471-9544.100103. 8. Samson M, et al. Autoimmun Rev 2017;16:833-844. 9. Cid MC, et al. GM-CSF Pathway Signature Identified in Temporal Artery Biopsies of Patients With Giant Cell Arteritis. 2019 EULAR;12-15 June. Madrid, Spain. 10. Cid M, et al. Ann Rheumatol 2019; DOI: 10.1136/annrheumdis-2019-eular.2694. 11. Pupim L, et al. Rheumatology 2019;58:<https://doi.org/10.1093/rheumatology/kez063.060>. 12. Herndler-Brandstetter D, et al. Cell Research 2014;24:1379-1380. 13. Becher B, et al. Immunity 2016;45:963-973.



GM-CSF is a key growth factor believed to be involved in the pathology of GCA

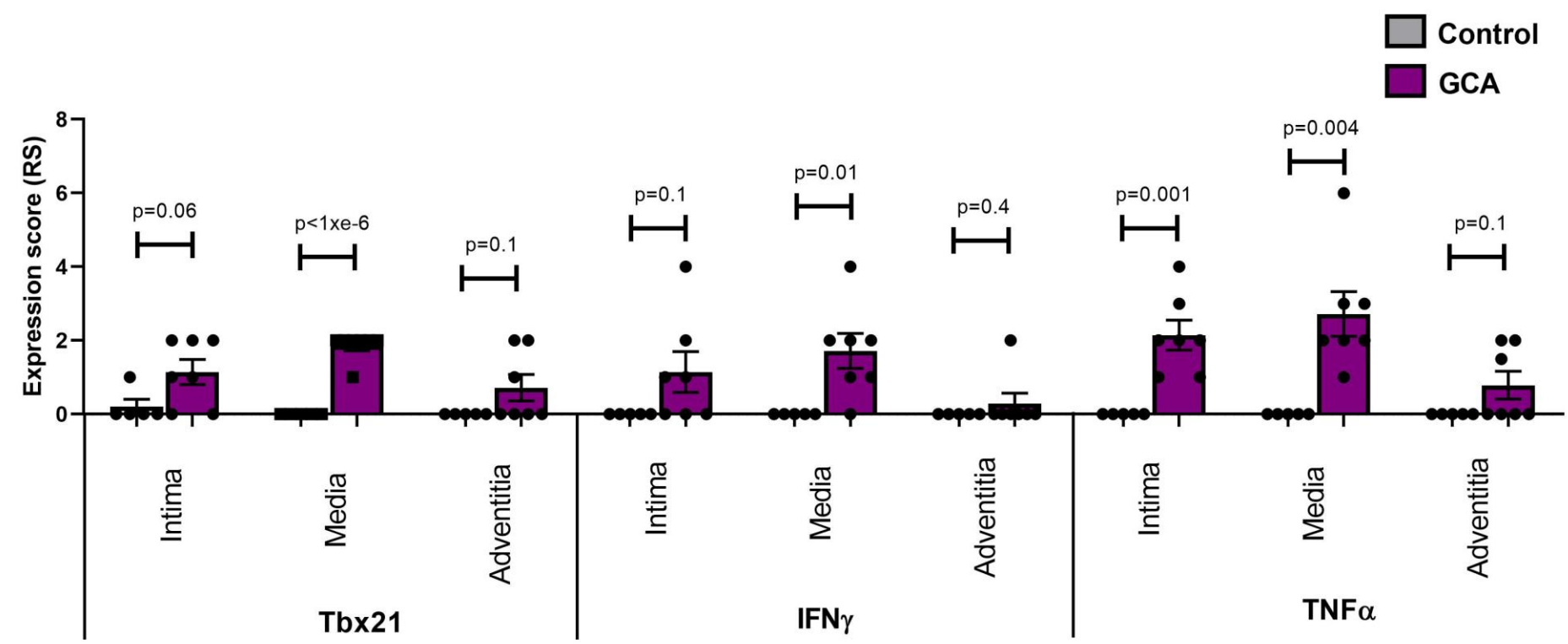


Transcriptomic analysis showed elevated mRNA expression of genes associated with GM-CSF-R α pathway



Poster Presentation at European Congress of Rheumatology 2019 (EULAR): *GM-CSF Pathway Signature Identified in Temporal Artery Biopsies of Patients With Giant Cell Arteritis*
Maria C. Cid, Rohan Gandhi, Marc Corbera-Bellalta, Nekane Terrades-Garcia, Sujatha Muralidharan, John F. Paolini

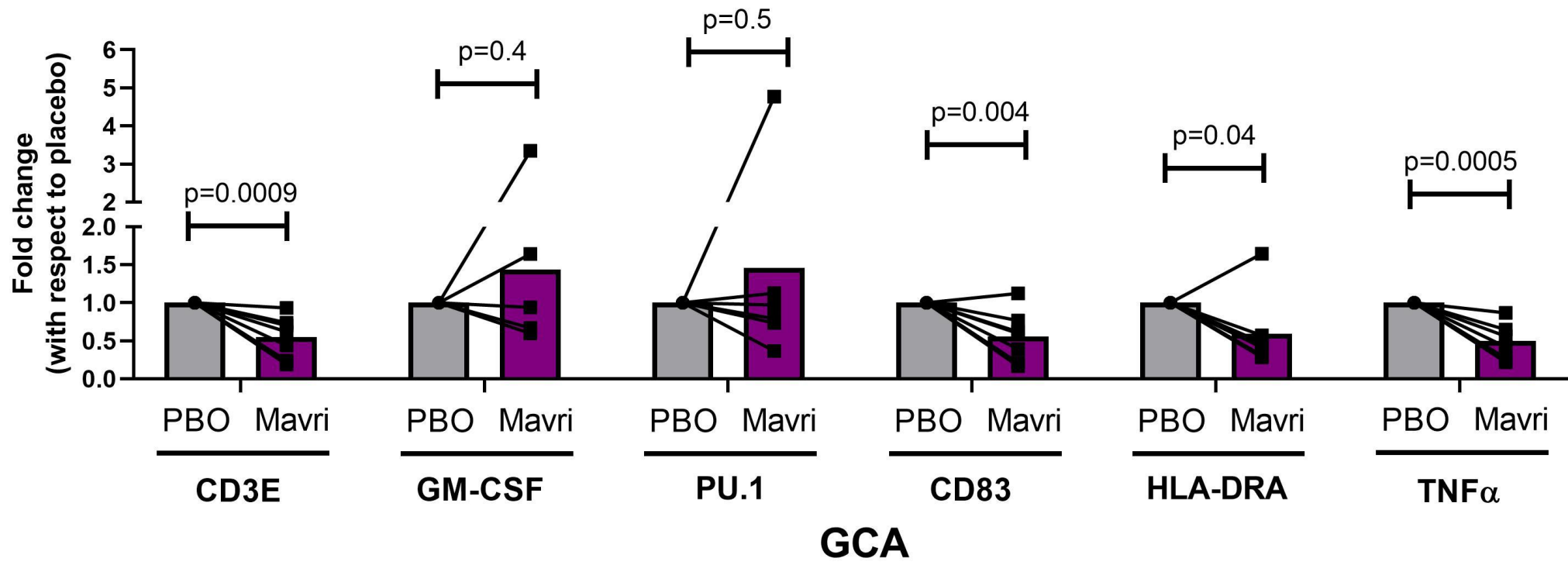
mRNA expression of multiple genes associated with T_H1 pathway was elevated in GCA arteries



Data from RNAscope experiments

Poster Presentation at European Congress of Rheumatology 2019 (EULAR): *GM-CSF Pathway Signature Identified in Temporal Artery Biopsies of Patients With Giant Cell Arteritis*
Maria C. Cid, Rohan Gandhi, Marc Corbera-Bellalta, Nekane Terrades-Garcia, Sujatha Muralidharan, John F. Paolini

Mavrilimumab shown to suppress the expression of genes associated with immune cell infiltration, inflammation and GM-CSF pathway in cultured GCA arteries



Poster Presentation at European Congress of Rheumatology 2019 (EULAR): *GM-CSF Pathway Signature Identified in Temporal Artery Biopsies of Patients With Giant Cell Arteritis*
Maria C. Cid, Rohan Gandhi, Marc Corbera-Bellalta, Nekane Terrades-Garcia, Sujatha Muralidharan, John F. Paolini



KPL-716 – Phase 2

(monoclonal antibody inhibitor targeting OSMR β)

Rilonacept

Mavrilimumab

KPL-716

KPL-404

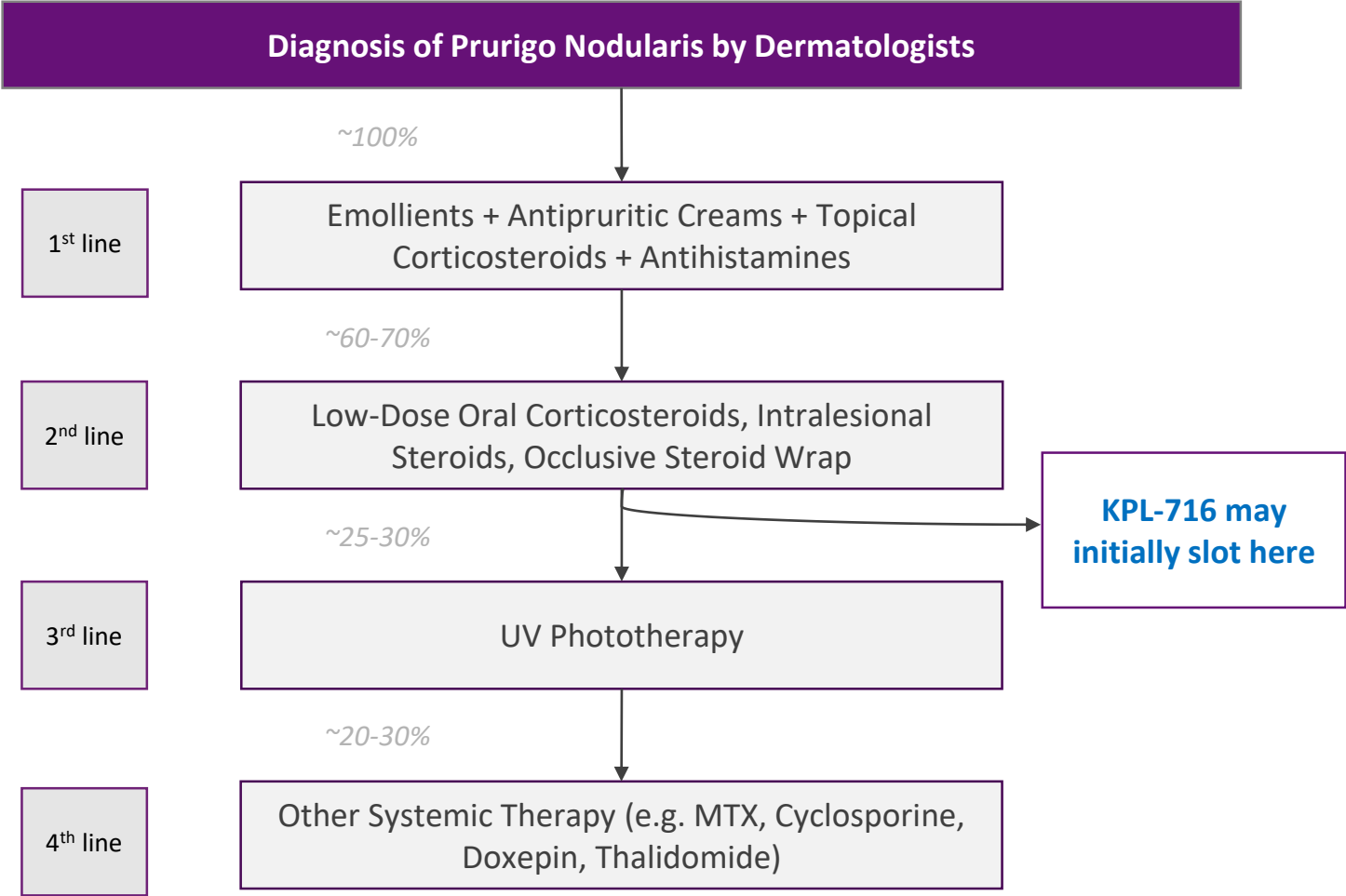
KPL-045

Differentiated molecule with potential to treat variety of pruritic, inflammatory and fibrotic indications

Mechanism of Action¹	Monoclonal antibody inhibitor targeting OSMR β ; a key receptor subunit shared by IL-31 and Oncostatin M
Lead Indication	Prurigo nodularis
Addressable Population²	~300k prevalent in the U.S.
Competition	No FDA-approved therapies for prurigo nodularis
Clinical Development	Enrolling a Phase 2a clinical trial in prurigo nodularis and an exploratory Phase 2 study in diseases characterized by chronic pruritus
Rights	Worldwide

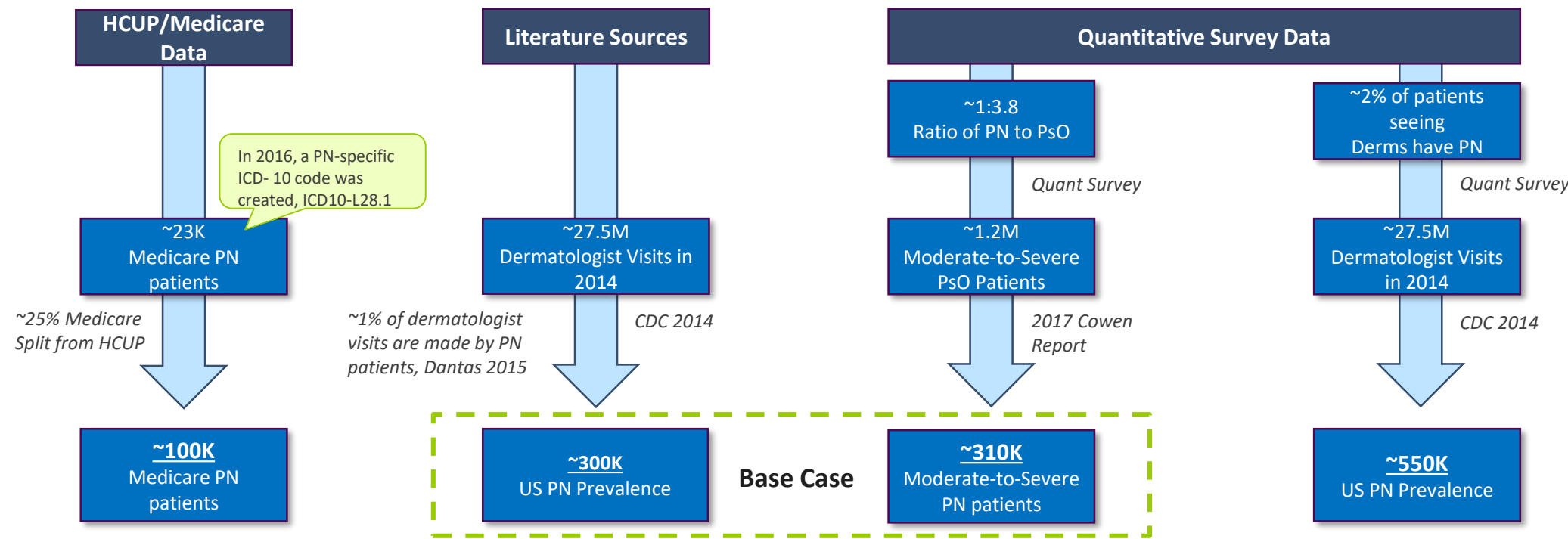
1) Trinity Qualitative Interviews; 2) Trinity Consulting - HCUP/Medicare Data 2012/2013; Quantitative Survey (n=100 dermatologists); Dantas, 2015, "Prevalence of dermatoses in dermatologic evaluation requests from patients admitted to a tertiary hospital for 10 years"; Mortz et al., British Journal of Dermatology, 2001

Prurigo nodularis is typically treated by dermatologists through a combination of medications and behavioral therapies; treatment is usually unsuccessful



Note: none of the above therapies are approved specifically for prurigo nodularis

The prevalence of prurigo nodularis is estimated at ~300K in the U.S.



Sources: CDC 2014: National Ambulatory Medical Care Survey: 2014 State and National Summary Tables <https://www.cdc.gov/nchs/data/ahcd/namcs_summary/2014_namcs_web_tables.pdf>; Cowen and Company, Therapeutic Categories Outlook: Comprehensive Study September 2017; Primary Market Research; 3. Dantas, 2015, "Prevalence of dermatoses in dermatologic evaluation requests from patients admitted to a tertiary hospital for 10 years"

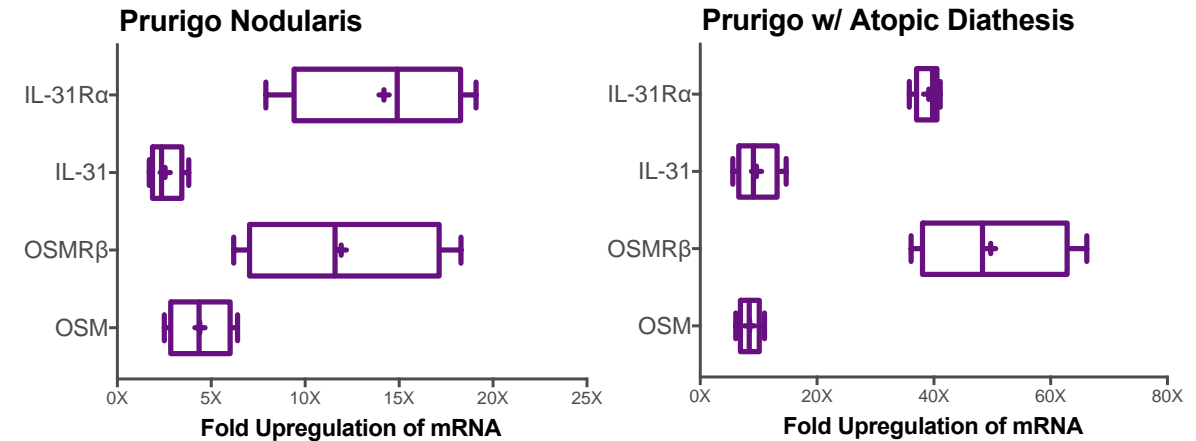


IL-31 and OSM are implicated in the pathology of prurigo nodularis

Quantitative Real-time PCR Analysis of IL-31 mRNA in Human Skin

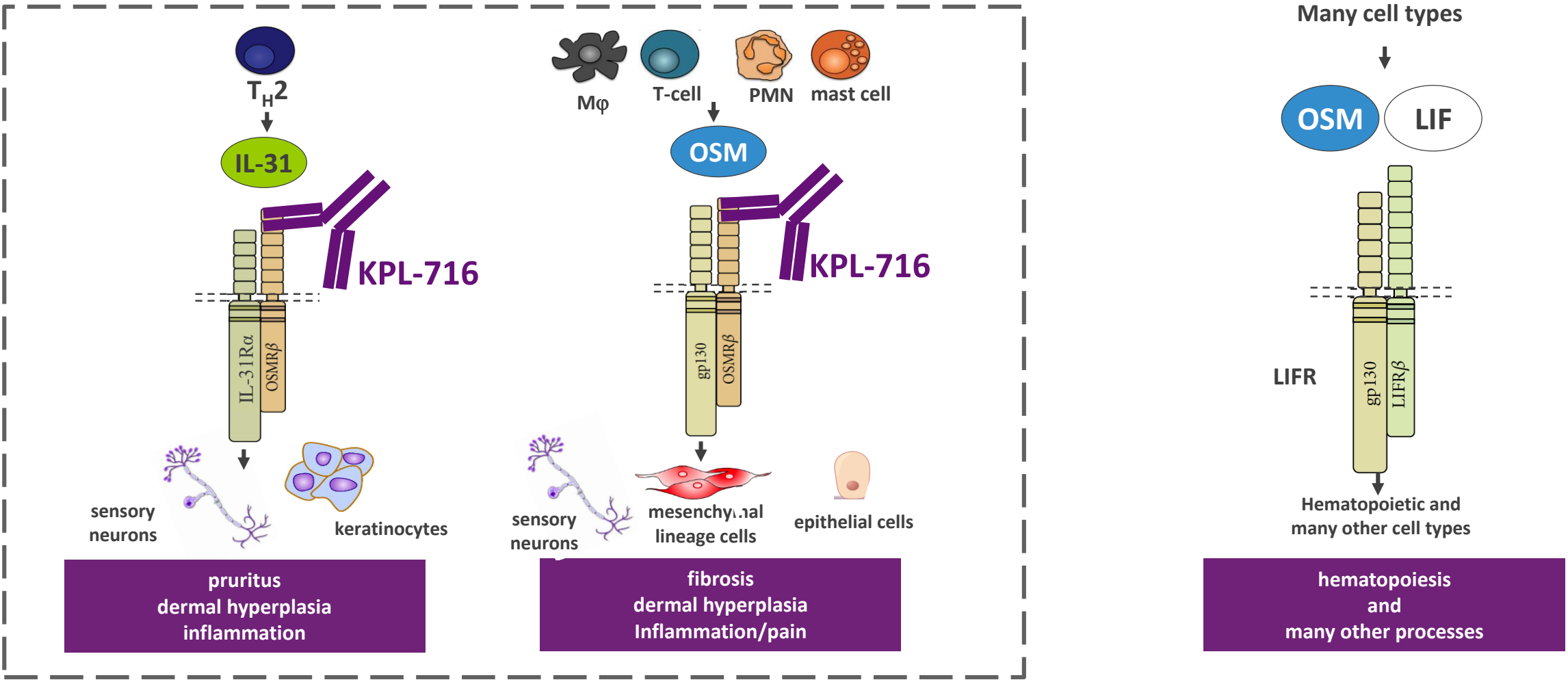
- **IL-31 significantly overexpressed in pruritic skin vs. non-pruritic skin**
 - Highest levels of IL-31 were detected in PN, one of the most pruritic forms of chronic skin inflammation
- **In PN lesions there is a 50-fold upregulation of IL-31 mRNA vs. normal skin and a 4.5-fold upregulation vs. lesional atopic dermatitis**
 - While there was some variability in IL-31 mRNA levels seen among PN patients, levels in all patients were significantly elevated compared with healthy controls

Dual-targeting of OSM and IL-31 through OSMR β blockade has the potential to be disease modifying

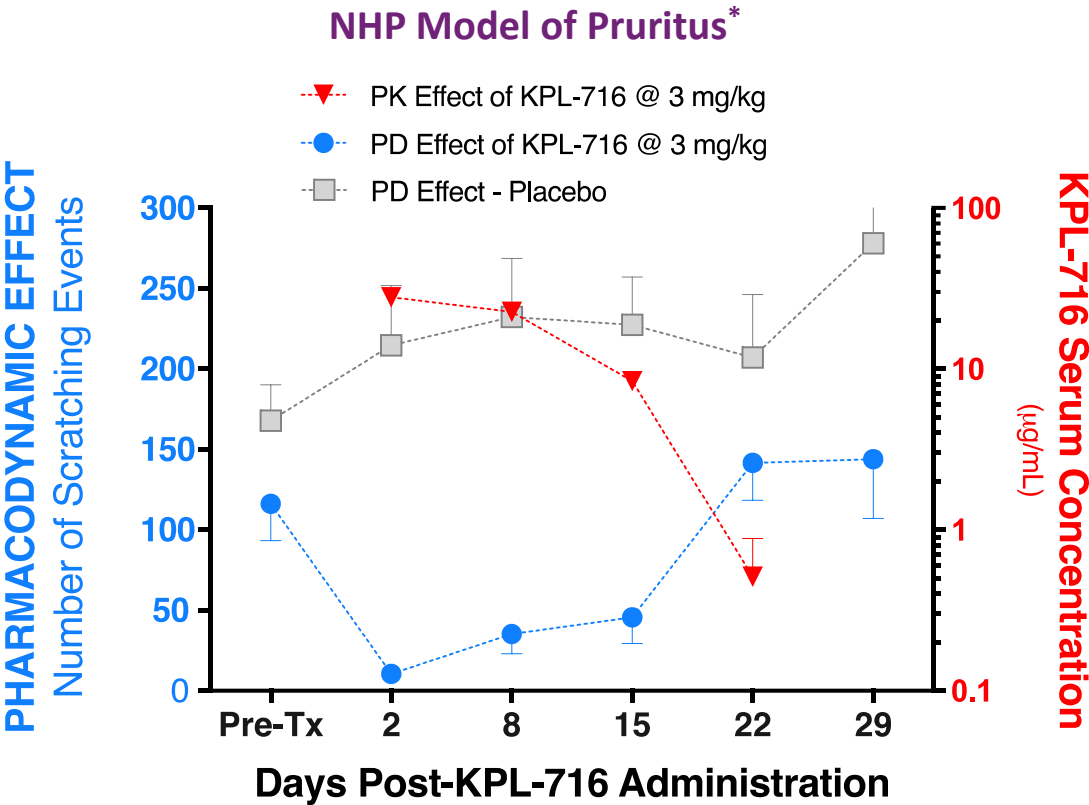


- Messenger RNA levels of IL-31, OSM and their receptor subunits (IL-31R α and OSMR β) are significantly elevated in lesions of prurigo nodularis, implicating them as major drivers of pruritus, leading to disease pathophysiology
- This phenotype is even more evident in the case of patients with prurigo nodularis that have an atopic diathesis since their receptor subunits are even more highly up-regulated than in prurigo nodularis alone
- These data provide strong mechanistic rationale to target both IL-31 and OSM by blocking OSMR β

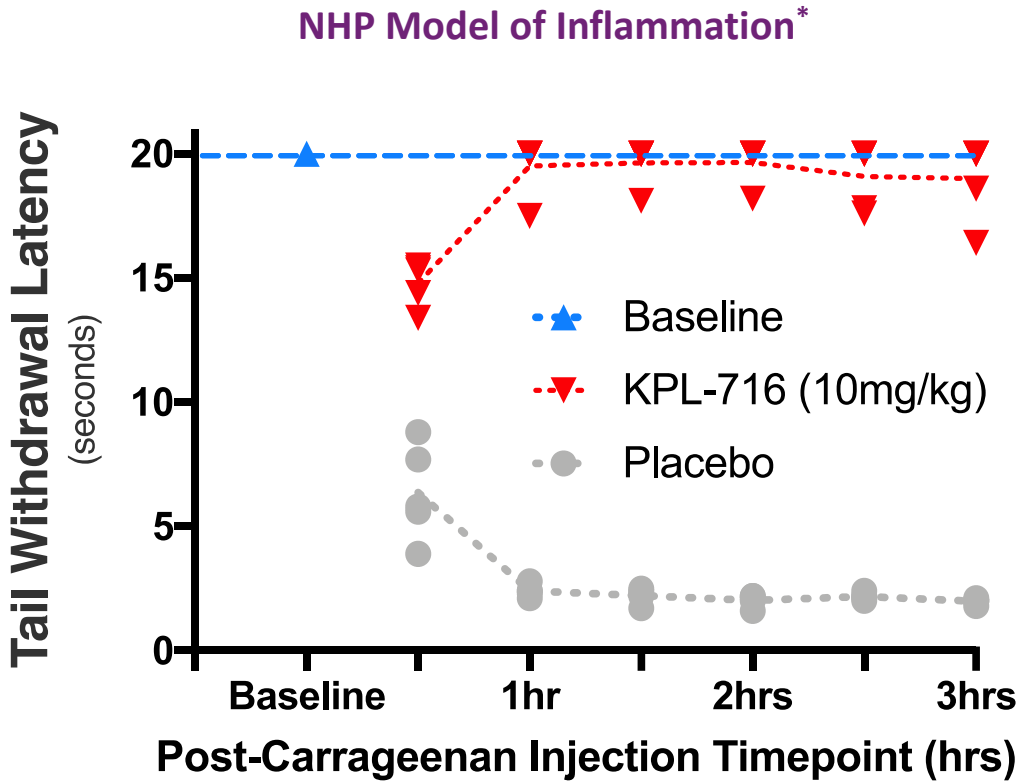
KPL-716 inhibited IL-31 & OSM signaling through OSMR β but avoided inhibiting signaling critical to hematopoiesis through OSM/LIFR in *in vitro* studies



KPL-716 showed signs of potential efficacy in two validated non-human primate models of pruritus and inflammation after a single dose



A single dose of KPL-716 at 3mg/kg inhibited pruritic response driven by supraphysiologic levels of IL-31 for over 2 weeks

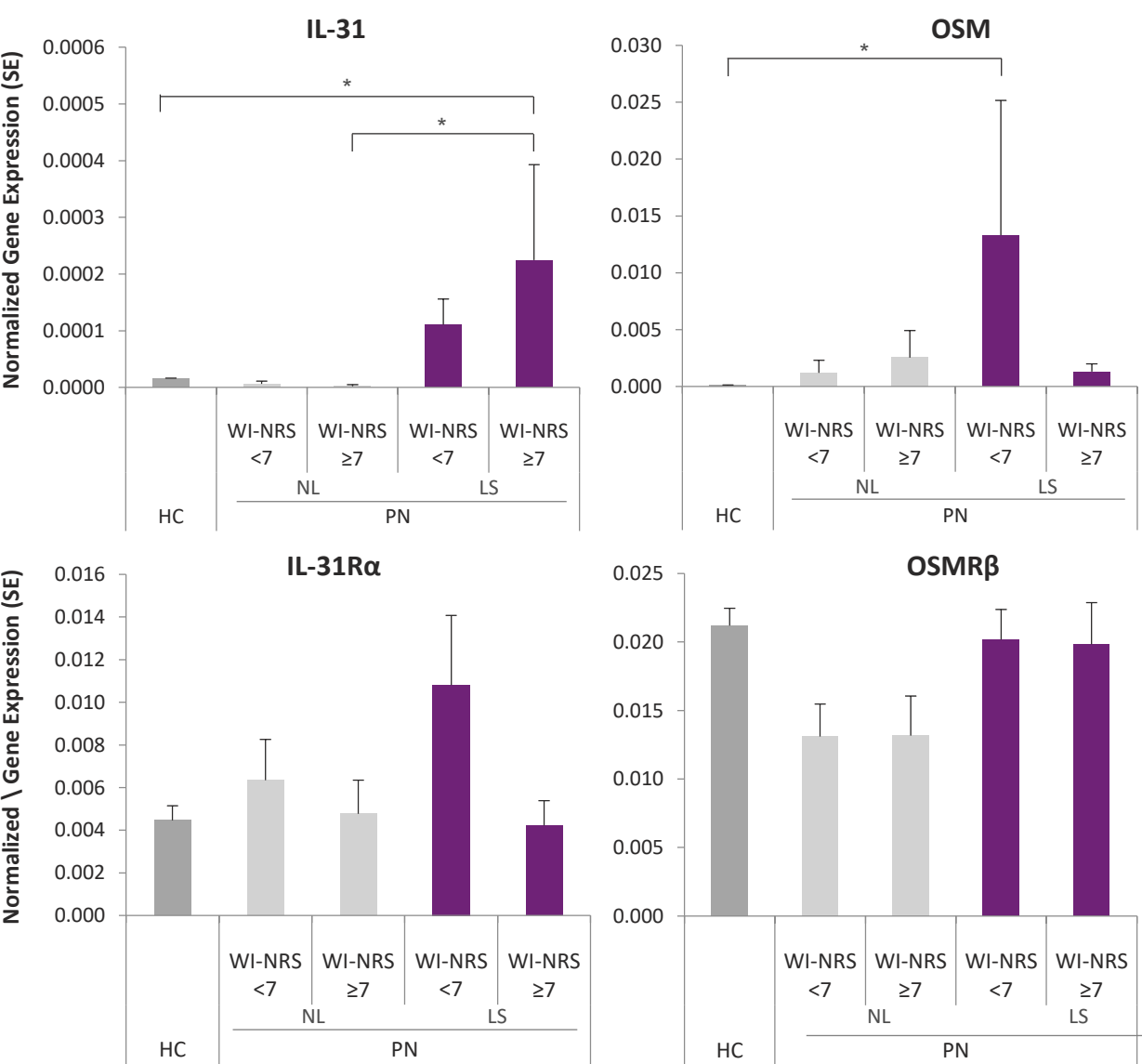


A single dose of KPL-716 at 10mg/kg increased tail withdrawal latency; implicates OSMR β in the inflammatory response

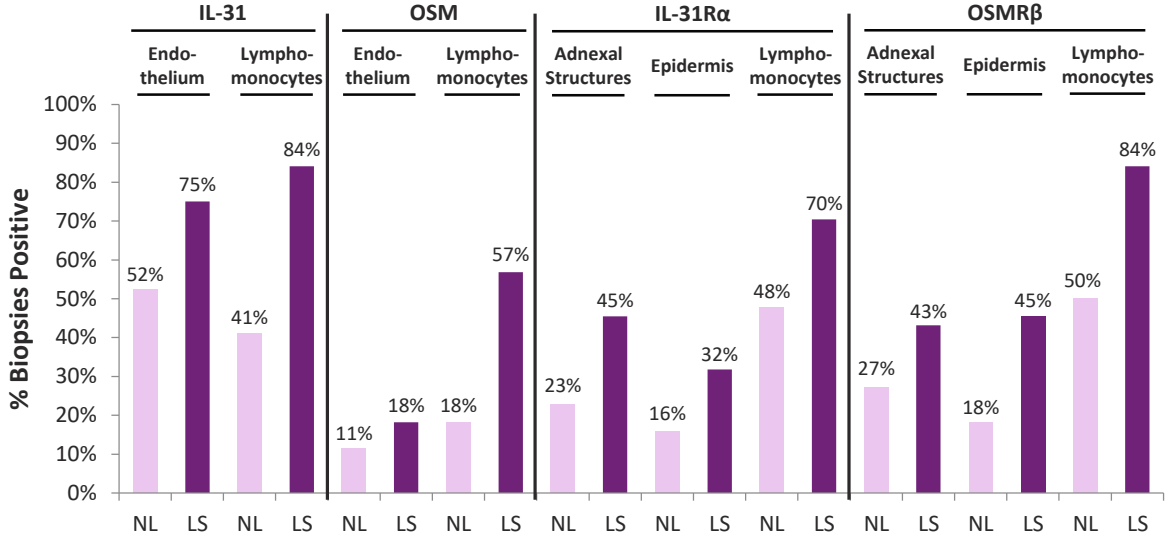
* Unpublished data: not to be reproduced without Kiniksa's express permission

All components of the Type II OSMR β signaling complex show upregulation in lesional skin of PN patents; IL-31 is more highly expressed in those reporting severe pruritus

Levels of Gene Expression in PN and HC Skin Biopsies



Presence of Type II OSMR β Signaling Complex Protein in PN Skin Biopsies*



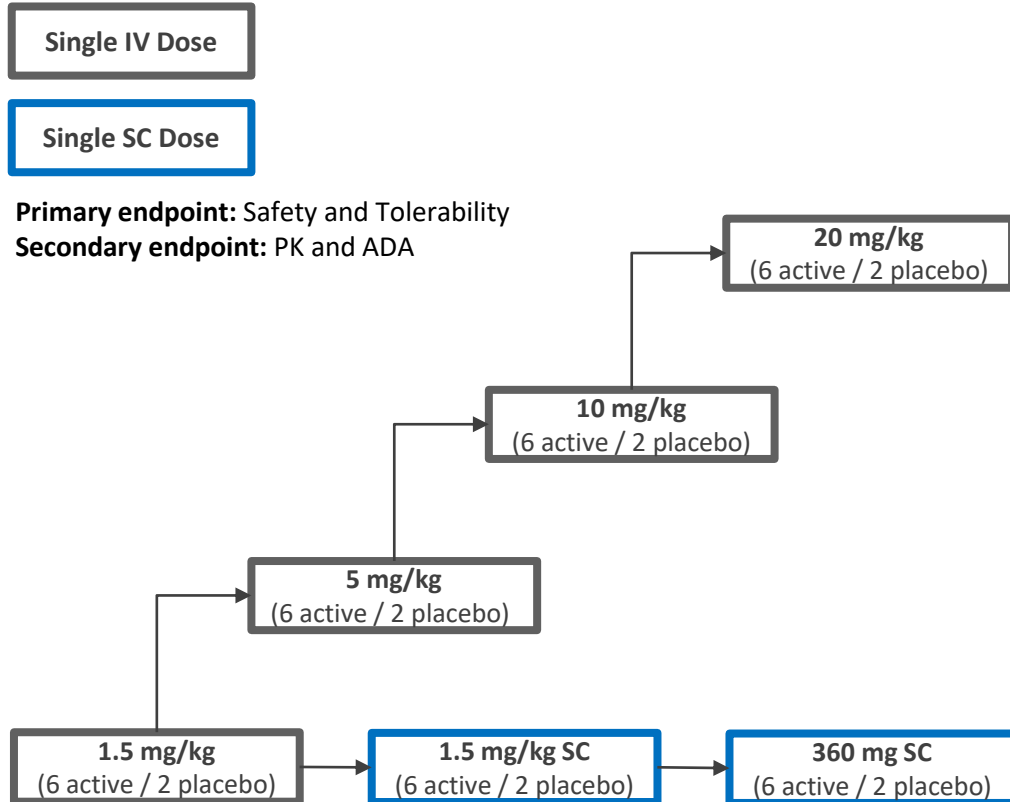
IHC scores each biopsy on a 1-4 scale; 1=negative, 2=questionably present; 3=present; 4= strongly present; biopsies scored 3 or 4 are considered positive

- OSM, OSMR β , IL-31, and IL-31R α mRNA expression was higher in lesional (LS) PN biopsies compared with non-lesional (NL) biopsies; all components except for OSMR β , which is known to be constitutively expressed, showed elevation compared to healthy controls (HC)
 - LS samples from PN patients with WI-NRS ≥ 7 expressed higher levels of IL-31 mRNA compared with HC samples ($p < 0.05$) and NL samples
 - Protein, analyzed through immunohistochemistry (IHC), for each of the Type II OSMR β signaling proteins shows upregulation in LS vs NL biopsies of PN patients' skin
- These data suggest a role for the OSMR β axis (IL-31, OSM, IL-31R α , OSMR β) in the pathogenesis of PN given its prevalent expression in PN lesional skin**

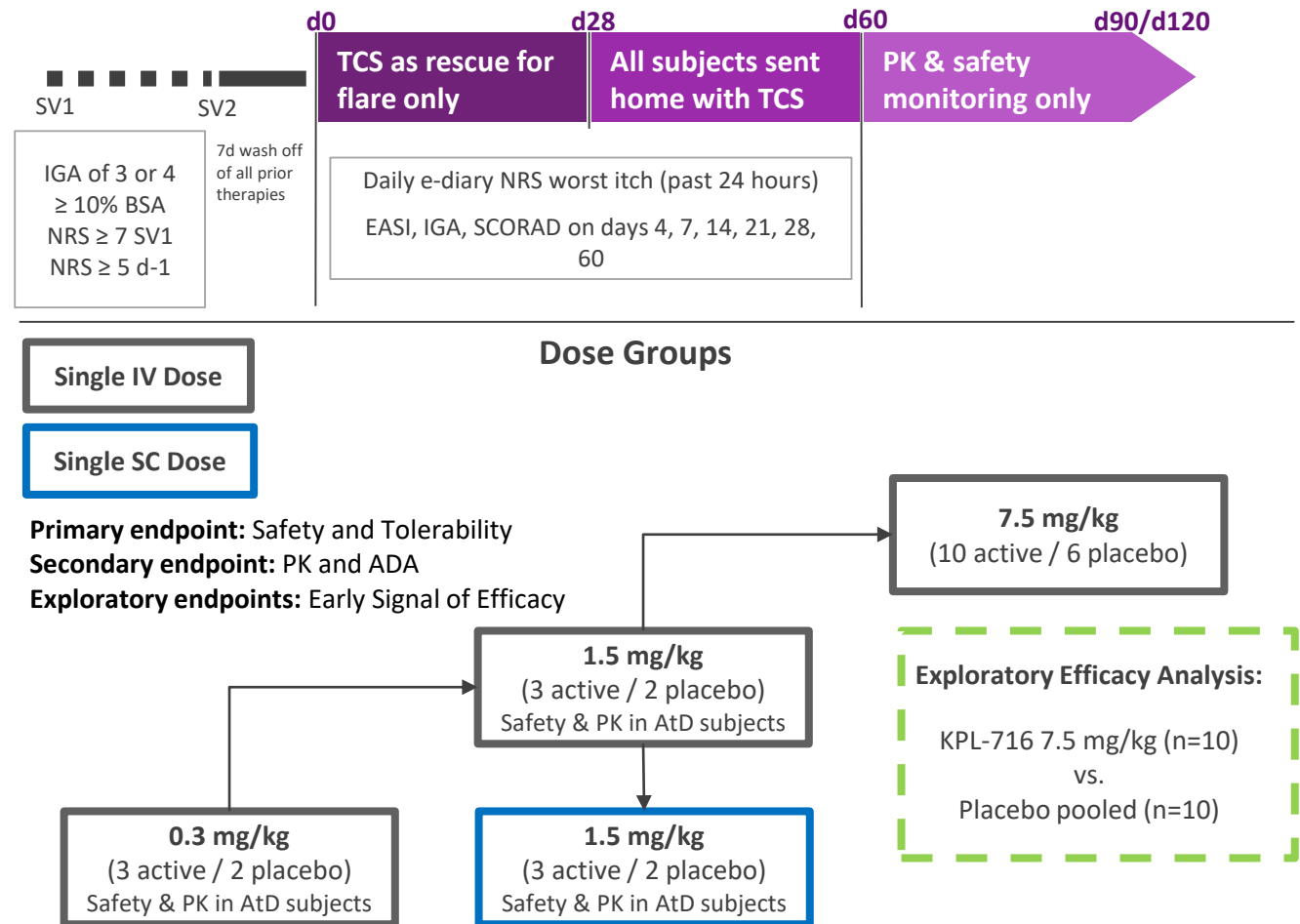
HC, healthy volunteers; IL-31R α , interleukin 31 receptor α ; LS, lesional; NL, non-lesional; SE, standard error; WI-NRS, Worst Itch Numeric Rating Scale. WI-NRS ranges from 0 ("no itch") to 10 ("worst imaginable itch"). * $P < 0.05$
*Key tissue compartments for each component included; data for additional tissue compartments available

KPL-716 placebo-controlled, single-ascending-dose Phase 1a/1b study design

Phase 1a: Normal Healthy Volunteer (n=50) Dose Groups



Phase 1b: Subjects with Atopic Dermatitis (n=32) Patient Experience



Baseline parameters were balanced overall

KPL-716 recipients had more atopic dermatitis flares in the year prior to enrollment, suggesting more unstable disease at baseline compared with placebo

Baseline Demographics/Disease Characteristics: AD	KPL-716 7.5 mg/kg IV	Placebo Pooled IV
Age, mean (SD), years	29.7 (11.2)	41.7 (10.9)
Male, %	50	70
White, %	70	70
Elevated IgE, %	60	60
History of any allergic disease, %	40	60
#AD flares in past year, mean (SD)	28.1 (41.6)	3.7 (3.5)
Body surface area affected by AD, mean (SD)	24.2 (8.0)	34.1 (28.0)
Weekly average WI-NRS, mean (SD)	8.0 (1.3)	8.2 (0.7)
Total EASI, mean (SD)	19.9 (7.6)	25.3 (14.1)
Total SCORAD, mean (SD)	66.7 (10.7)	60.7 (13.7)
IGA=3, %	80	80
IGA=4, %	20	20

Baseline is defined as the last measurement prior to dosing, AD = atopic dermatitis, IV = intravenous, IGA = Investigator’s Global Assessment (severity scale), WI-NRS = Worst Itch Numerical Rating Scale, EASI = Eczema Area and Severity Index, SCORAD = Scoring atopic dermatitis (severity scale)

KPL-716 was well-tolerated in single-dose Phase 1a/1b study

- No Deaths
- No SAEs
- No Discontinuations due to AEs
- No Infusion Reactions
- No Injection Site Reactions
- No Thrombocytopenia
- No Peripheral Edema
- No Conjunctivitis
- Drug-Related Treatment Emergent Adverse Events (DR-TEAEs) infrequent and not related to dose
- All resolved without sequelae

Normal Healthy Volunteers

AE	KPL-716 (IV)					Placebo (IV)	KPL-716 (SC)		Placebo (SC)
	1.5 mg/kg n=6	5 mg/kg n=6	10 mg/kg n=6	20 mg/kg n=6	Pooled n=8		1.5 mg/kg n=6	360 mg n=7	Pooled n=5
DR-TEAE	0	Mild headache (n=1)	0	0	0		Mild flushing (n=1)	Mild anemia (n=1)	0

Subjects with Atopic Dermatitis

AE	KPL-716 (IV)				Placebo (IV)	KPL-716 (SC)	Placebo (SC)
	0.3 mg/kg n=3	1.5 mg/kg n=3	7.5 mg/kg n=10	Pooled n=10		1.5 mg/kg n=4	Pooled n=2
DR-TEAE*	0	Mild headache (n=1), Decreased appetite (n=1)	Moderate dizziness (n=1)	Mild somnolence (n=1)		Mild dizziness (n=1)	0
AD flare	1	0	2	3		0	0
Study day of AD flare	7	N/A	14, 20	1, 5, 45		N/A	N/A

* The only moderate DR-TEAE occurred after a protocol violation.

Exploratory efficacy endpoints and analysis plan

Efficacy Endpoints

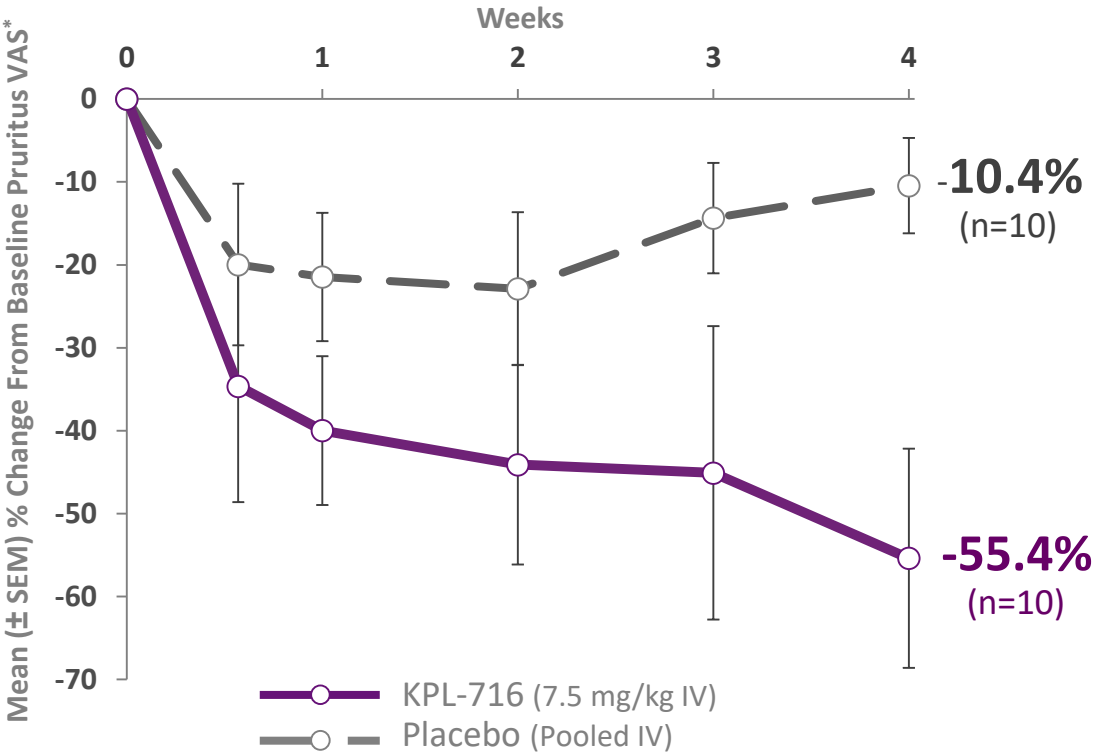
- **Pruritus:**
 - Weekly average of daily WI-NRS (worst itch in past 24 hours) collected by daily eDiary
 - Pruritus Visual Analog Scale, a component of SCORAD (average itch in past 3 days) collected at study visits
 - **Sleep loss VAS:**
 - A component of SCORAD (average sleep loss in past 3 nights)
 - **Eczema Area Severity Index (EASI)**
-

Post Hoc Efficacy Analysis

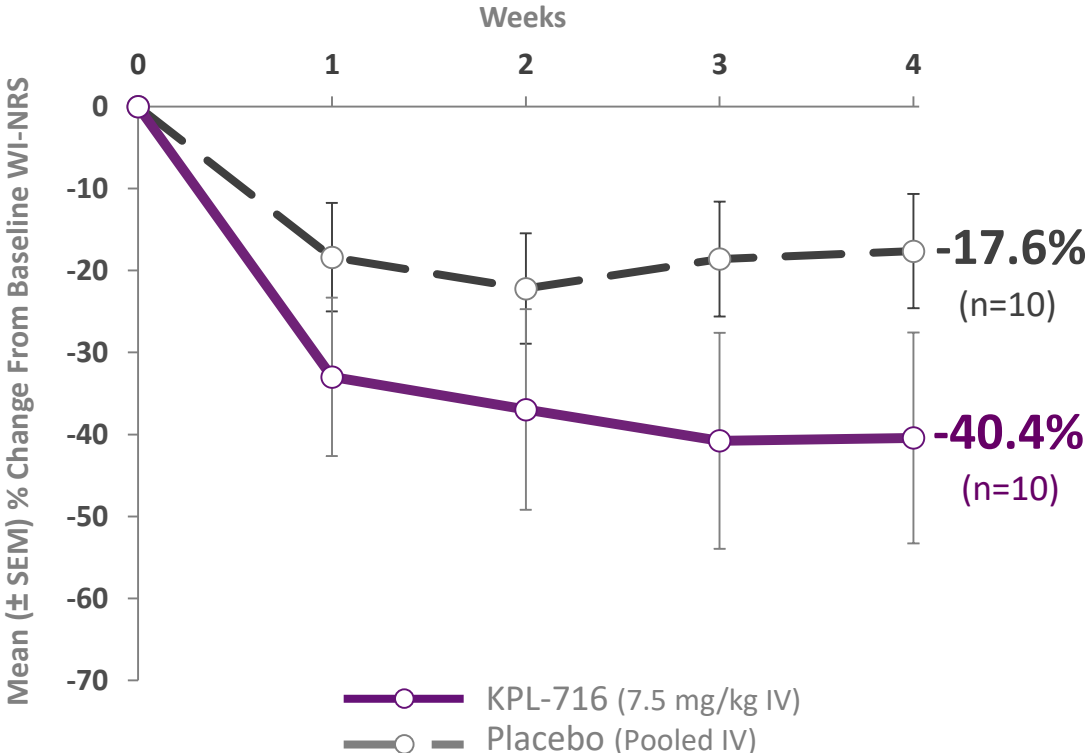
- **10 KPL-716 subjects (7.5 mg/kg IV) versus 10 placebo subjects (pooled IV) from baseline to Day 28**
- **“Last Observation Carried Forward” approach used for data values after rescue medication administered. Subject was considered non-responder after rescue (responder analysis).**
 - Two KPL-716: 2 AD flares (d15 and d21)
 - Three placebo: 2 AD flares (d3, d14), 1 anti-histamine use for upper respiratory infection (d26)
- **Similar results obtained if data values after rescue medication administration were included or excluded**

Single doses in Phase 1a/1b provided early evidence indicative of target engagement and showed reduction in pruritus over the 28-day monotherapy period

Pruritus Visual Analog Scale (VAS)*



Weekly Average Worst Itch Numerical Rating Scale (WI-NRS)

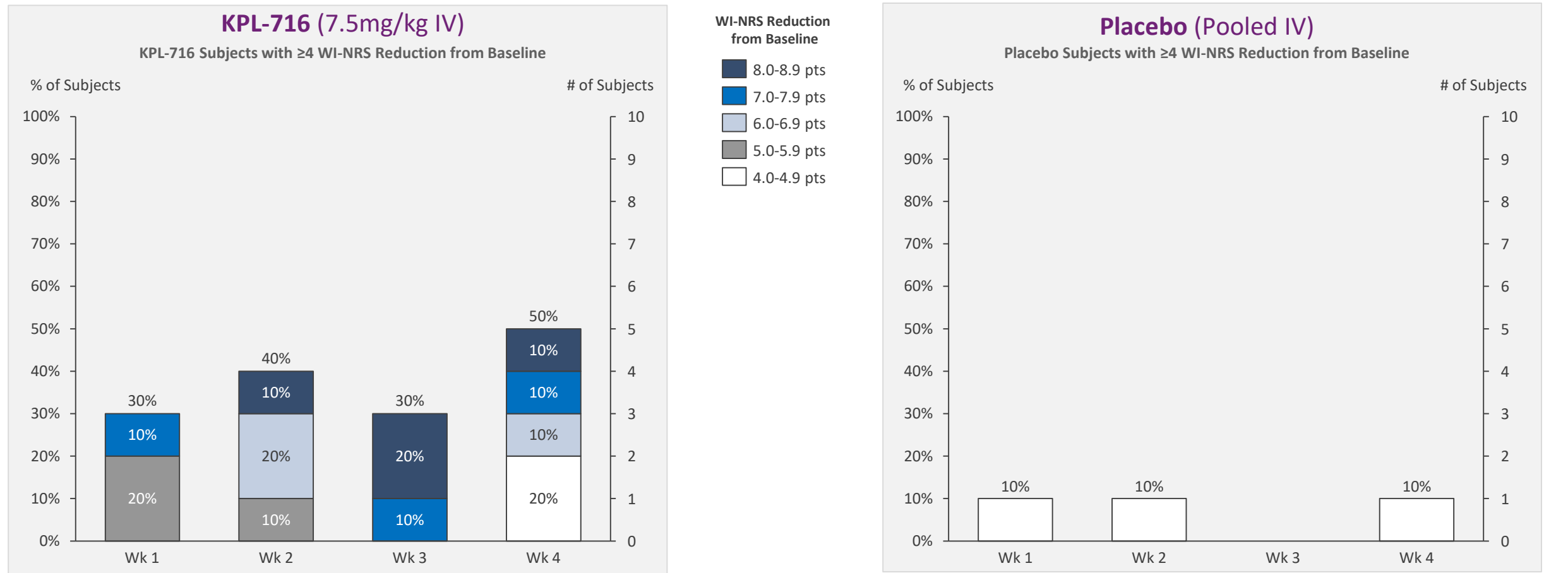


In subjects who received rescue medication, last observation was carried forward. Two KPL-716 recipients (d15, d21) and three placebo recipients (d3, d14, d26)

* VAS = Visual Analog Scale and a component of SCORAD (Scoring atopic dermatitis) severity scale



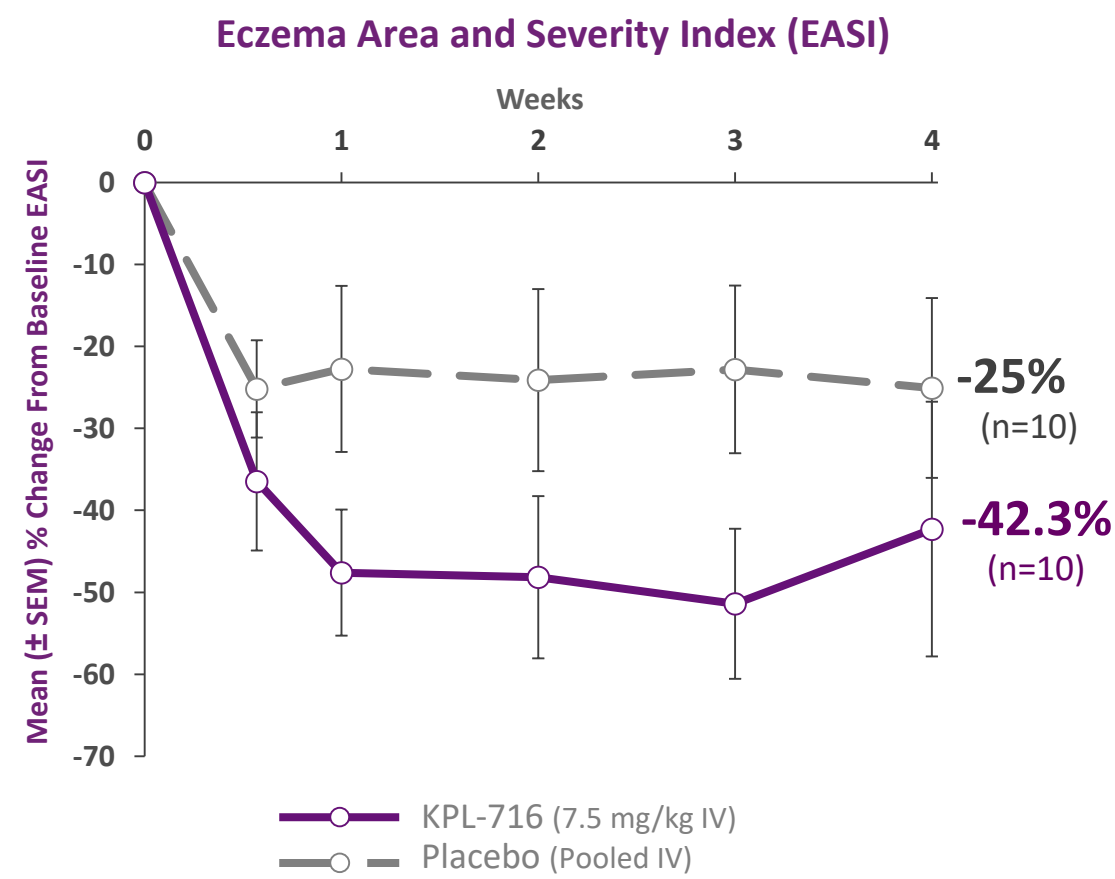
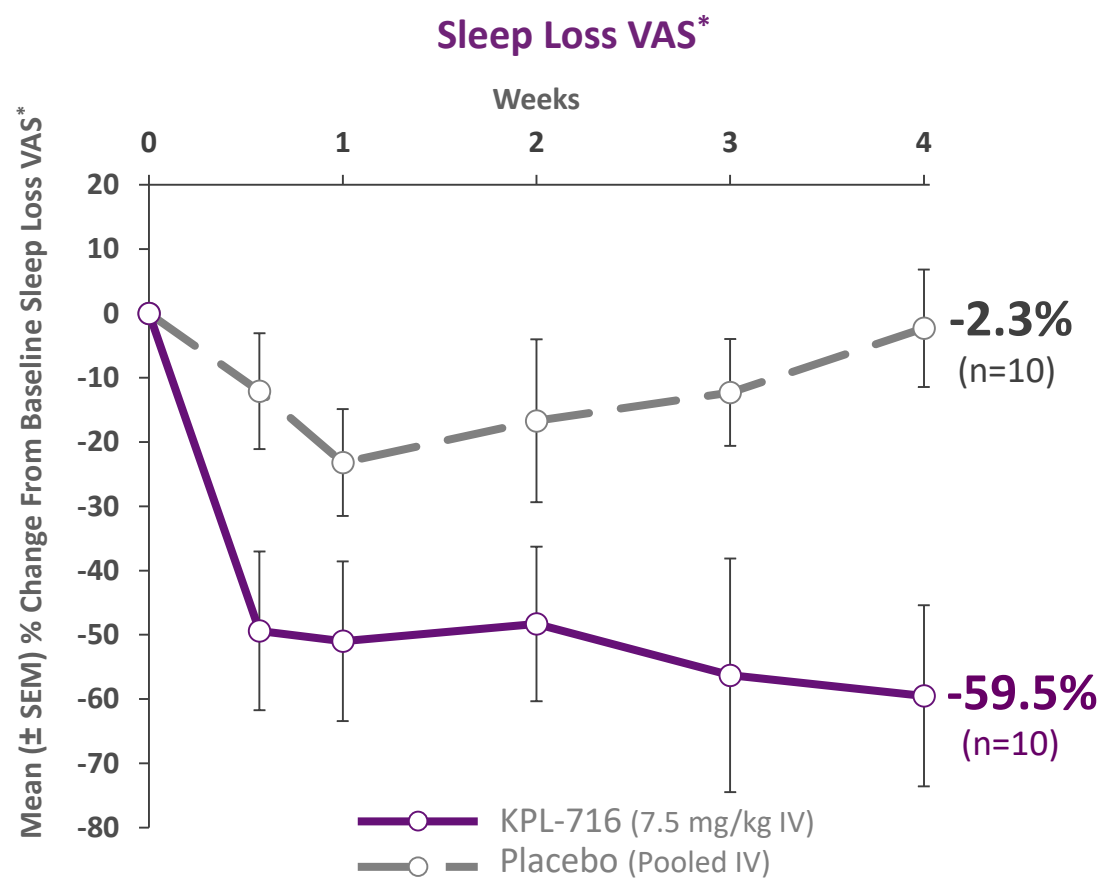
The maximum decrease in WI-NRS at day 28 in the absence of concomitant TCS was ≥ 8-points in KPL-716 recipients compared to ≥ 4-points in placebo



WI-NRS = Worst Itch Numerical Rating Scale, TCS = topical corticosteroids



Single doses in Phase 1a/1b showed reduction in sleep loss and disease severity over the 28-day monotherapy period



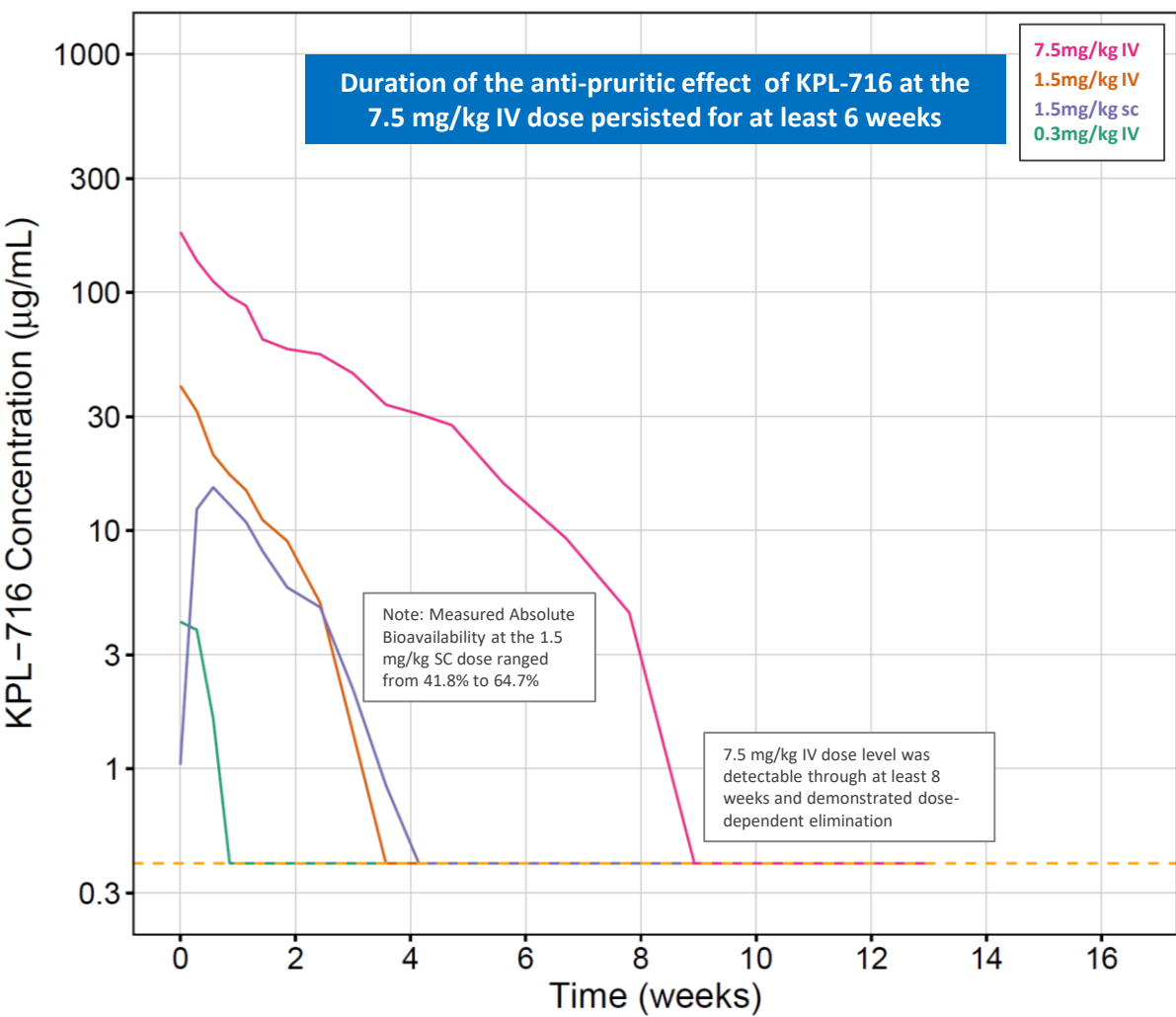
In subjects who received rescue medication, last observation was carried forward. Two KPL-716 recipients (d15, d21) and three placebo recipients (d3, d14, d26)

* VAS = Visual Analog Scale and a component of SCORAD (Scoring atopic dermatitis) severity scale

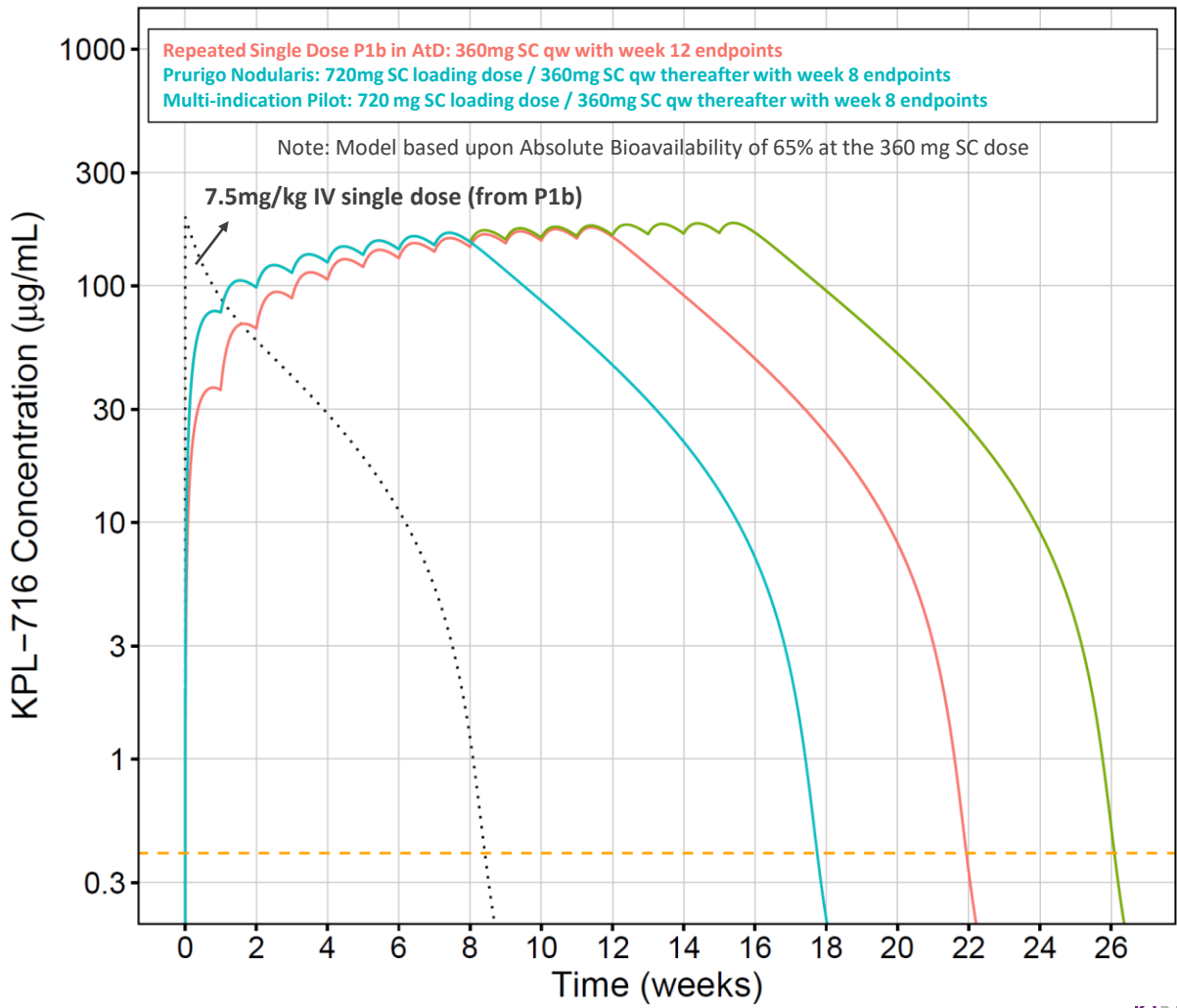


PK/PD model predicts that weekly SC dosing provides sufficient/high exposures for current POC studies as well as studying alternate dosing regimens in future dose-finding studies (e.g., q2w and/or qm)

Measured KPL-716 PK From P1b Single Dose



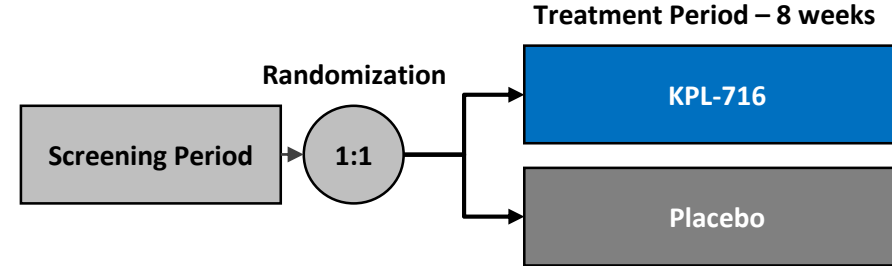
Phase 1b data used to build predictive PK/dosing model for currently ongoing multiple-dose studies (RSD, PN, Chronic pruritus pilot)



KPL-716 Phase 2a trial in prurigo nodularis

Phase 2a Proof-of-Concept

- **Objective:** Assess pruritus reduction
- **Dose:** 720 mg SC loading dose --> 360 mg single SC QW thereafter



Primary Endpoint:

- % change from baseline in weekly average Worst Itch-Numeric Rating Scale (WI-NRS)

Key Secondary Endpoints:

- Proportion of subjects achieving at least a 4-point reduction from baseline in weekly average WI-NRS
 - % change from baseline in pruritus Visual Analog Scale (VAS)

Other Secondary Endpoints:

- Exploratory tools will be used to measure disease modification

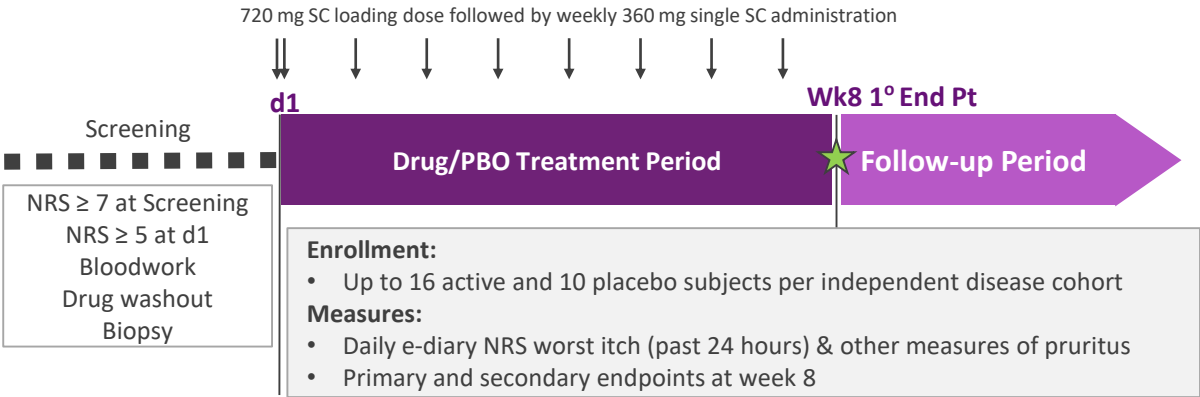
KPL-716 exploratory Phase 2 study in diseases characterized by chronic pruritus

Pilot Study Rationale

- (1) Investigate presence of IL-31 & OSM signature in multiple diseases characterized by chronic pruritus
- (2) In diseases where IL-31 is present (based on post-hoc biopsy analysis) → link inhibition of IL-31 with KPL-716 to clinical response
- (3) Diseases where IL-31 is NOT present (based on post-hoc biopsy analysis) → Investigate whether blocking OSMRβ has any effect

Chronic Idiopathic Urticaria (CIU)	<ul style="list-style-type: none">US Prevalence: ~2-3 M^{1,2}Pruritus Burden: ~1-in-3 experience pruritus refractory to conventional therapies; ~15-20% treated with Xolair continue to experience pruritus³
Chronic Idiopathic Pruritus (CIP)	<ul style="list-style-type: none">US Prevalence: Treating physicians report ~1 CIP patient for every 3 atopic dermatitis patients^{3,4}.Pruritus Burden: ~50% experience symptoms lasting for >1-yr; ~1-in-3 treated patients experience refractory pruritus³
Lichen Planus (LP)	<ul style="list-style-type: none">US Prevalence: ~0.5 M⁵Pruritus Burden: ~1-in-3 treated patients experience refractory pruritus³
Lichen Simplex Chronicus (LSC)	<ul style="list-style-type: none">US Prevalence: Treating physicians report ~1 LSC patient for every PN patient³ (~0.3 M addressable in the US)^{6,7}Pruritus Burden: ~40% of treated patients experience refractory pruritus³
Plaque Psoriasis	<ul style="list-style-type: none">US Prevalence: ~12 M^{8,9}Pruritus Burden: ~2-3 M patients in US with moderate-to-severe pruritus⁹

Subject Experience in Each Disease Cohort



Note: US prevalence figures are estimates based on references which may include only a single EU country and/or based on primary market research where physicians were asked to relate the estimated number of patients they treat with the target disease in relation to another disease they treat where the prevalence estimates are more well known

1) Gaig et al., Epidemiology of urticaria in Spain, J Investig Allergol Clin Immunol. 2004 | 2) Saini, Chronic Spontaneous Urticaria, Immunology & Allergy Clinics, 2014 | 3) Kiniksa survey data (n=83 dermatologists, n=38 allergists) | 4) Weishaar et al., European Guideline on Chronic Pruritus; Acta Derm Venereol 2012 | 5) Cleach & Chosidow, Lichen Planus, NEJM 2012 | 6) Dantas, 2015, Prevalence of dermatoses in dermatologic evaluation requests from patients admitted to a tertiary hospital for 10 years, An Bras Dermatol. 2015 | 7) HCUP/Medicare Data 2012/2013 | 8) Michalek et al., A systematic review of worldwide epidemiology of psoriasis, J Eur Acad Dermatol Venereol. 2017 | 9) Menlo Tx Company Presentation June 2018

Interim KPL-716 repeated-single-dose Phase 1b summary

Enrolled 43 subjects with moderate-to-severe atopic dermatitis experiencing moderate-to-severe pruritus

- Randomized 1:1 between weekly subcutaneous (SC) injections of either placebo or 360mg of KPL-716 for 12 weeks
- Interim data includes all subjects through the 12-week treatment period

Primary endpoint: safety and tolerability of KPL-716

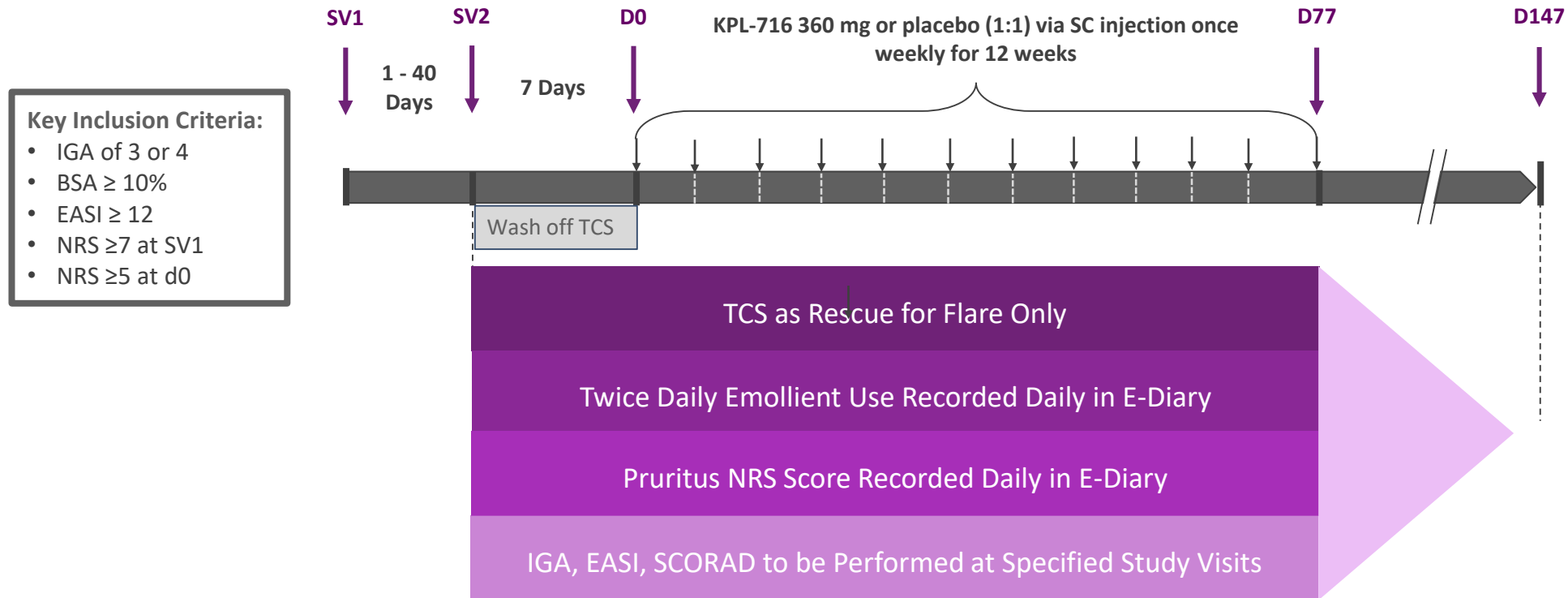
Exploratory endpoints:

- Worst-Itch Numerical Rating Score (WI-NRS) as recorded in a daily e-diary
- Measures of atopic dermatitis disease severity

Topline Observations:

- KPL-716 showed rapid and sustained reductions in pruritus versus placebo for the duration of the treatment period
 - The mean change from baseline in weekly-average WI-NRS at Week 1 was -28.1% in KPL-716 recipients compared to -6.8% in placebo recipients
 - The mean change from baseline in weekly-average WI-NRS at Week 12 was -55.0% in KPL-716 recipients compared to -30.9% in placebo recipients
 - 52.6% of KPL-716 recipients demonstrated a ≥ 4 -point reduction in weekly-average WI-NRS at Week 12 compared to 26.3% of placebo recipients
- There were no meaningful benefits of repeated-single-doses of KPL-716 on other efficacy endpoints specific to atopic dermatitis, including Eczema Area and Severity Index (EASI) and Scoring Atopic Dermatitis (SCORAD)
- There were no serious adverse events. However, there were more atopic dermatitis flares in KPL-716 recipients compared to placebo recipients (47.6% for the KPL-716 arm vs. 4.5% for the placebo arm) through the 12-week treatment period. KPL-716 was otherwise well-tolerated

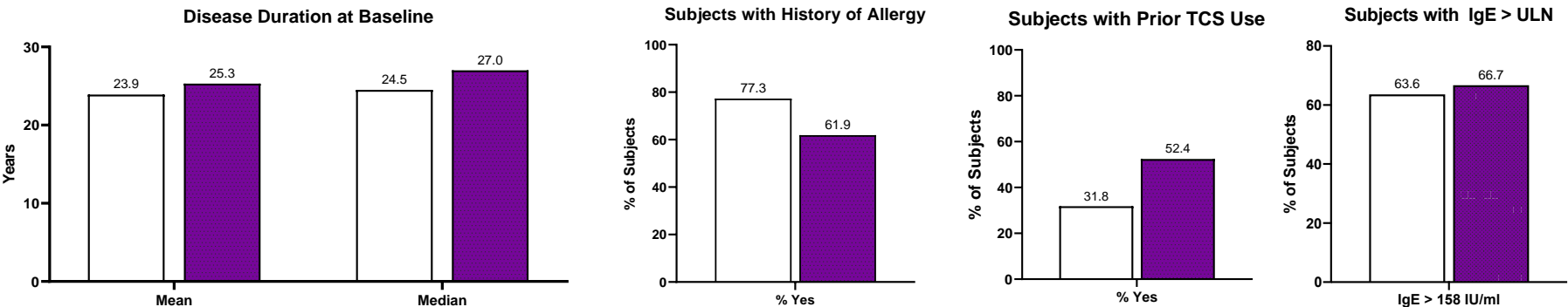
KPL-716 placebo-controlled repeated-single-dose Phase 1b study design in patients with moderate-to-severe atopic dermatitis



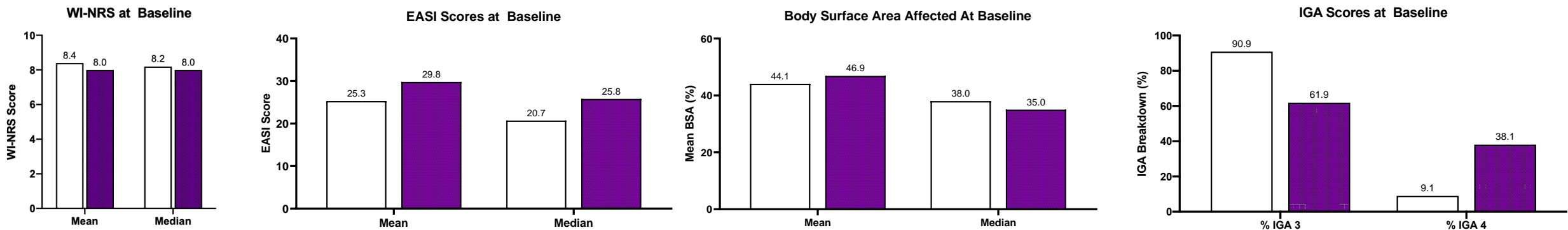
Baseline subject and disease characteristics

□ PBO (All Subjects)
■ KPL-716 (All Subjects)

Baseline Subject Characteristics



Baseline Disease Characteristics



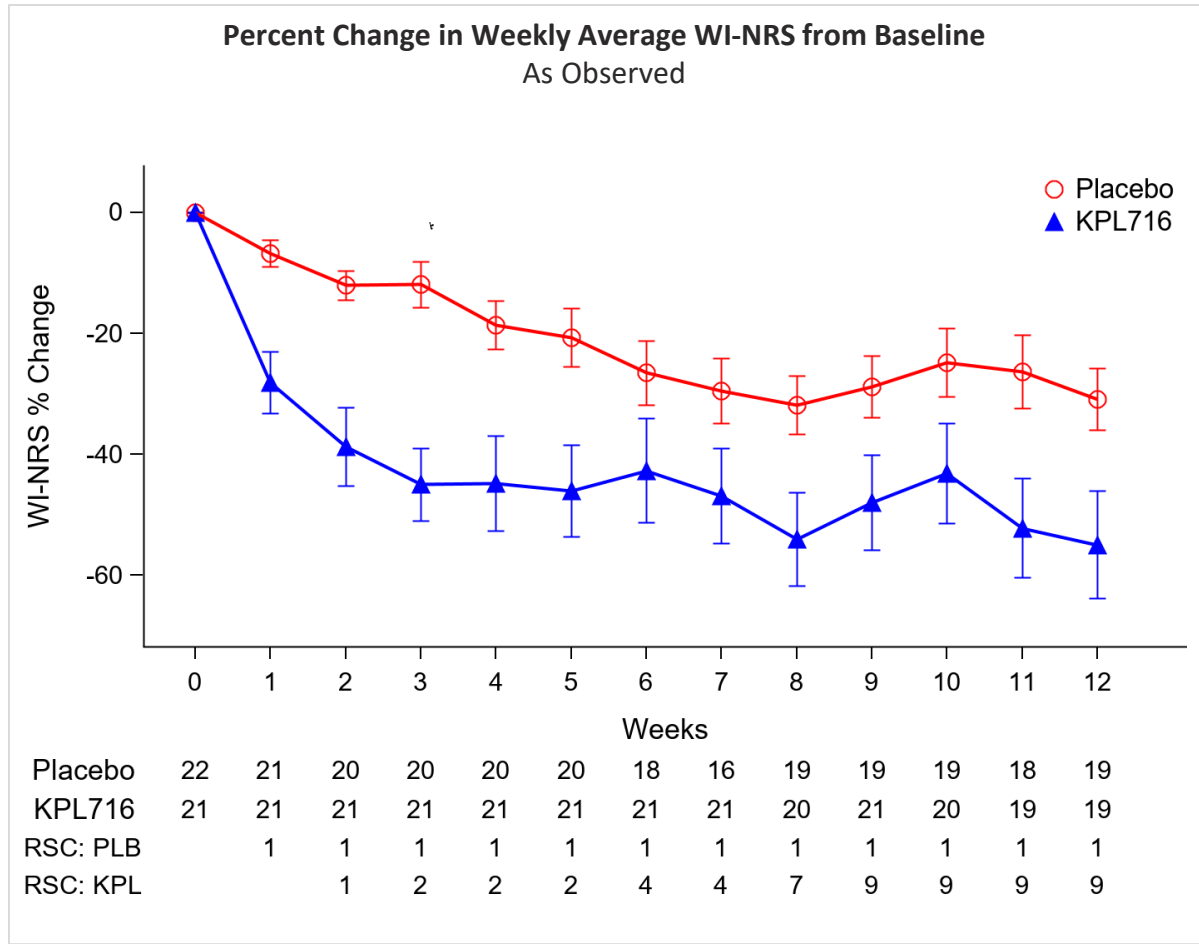
Overview of treatment-emergent adverse events (TEAE) through 12-week treatment period

	Placebo (N=22)	KPL-716 (N=21)
Any TEAE	12 (54.5%)	18 (85.7%)
Any Drug-Related TEAE	4 (18.2%)	8 (38.1%)
Any Moderate or Severe TEAE	6 (27.3%)	11 (52.4%)
Any Drug-Related Moderate or Severe TEAE	0	2 (9.5%)
Any Treatment-Emergent Serious AE	0	0
Any Drug-Related Serious TEAE	0	0
Any Atopic Dermatitis Flare-Related TEAE	1 (4.5%)	10 (47.6%)
Any Injection Site Reaction	2 (9.1%)	3 (14.3%)
Any TEAE Led to Dose Interruptions	1 (4.5%)	2 (9.5%)
Any TEAE Led to Study Drug Discontinuation	0	2 (9.5%)
Any TEAE Led to Death	0	0

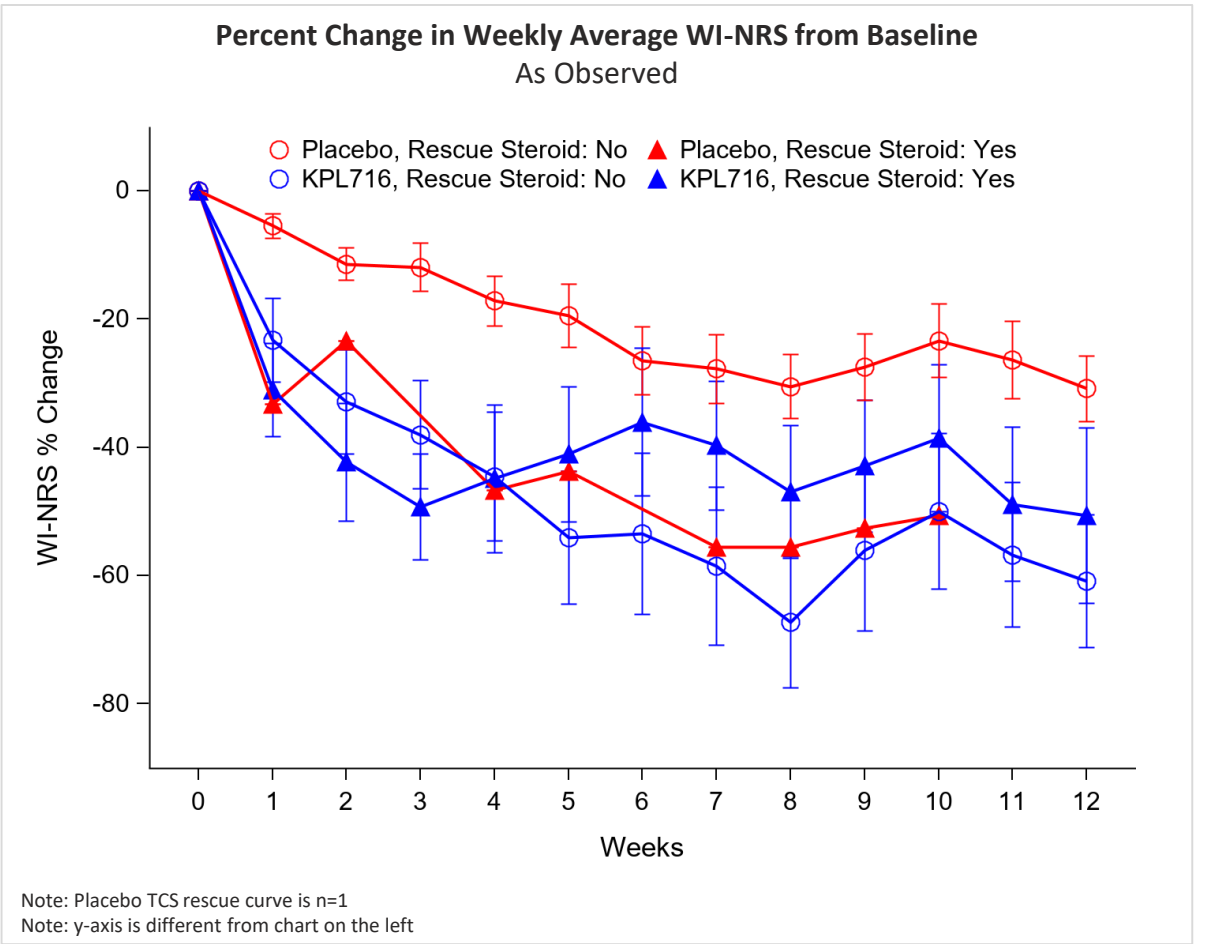
Moderate / Severe Drug-Related TEAE

	Placebo (N=22)	KPL-716 (N=21)
Subjects with At Least 1 Drug-related Moderate or Severe TEAE	0	2 (9.5%)
Infections and infestations	0	1 (4.8%)
Eczema impetiginous	0	1 (4.8%)
Psychiatric disorders	0	1 (4.8%)
Depression	0	1 (4.8%)
Skin and subcutaneous tissue disorders	0	1 (4.8%)
Dermatitis atopic	0	1 (4.8%)

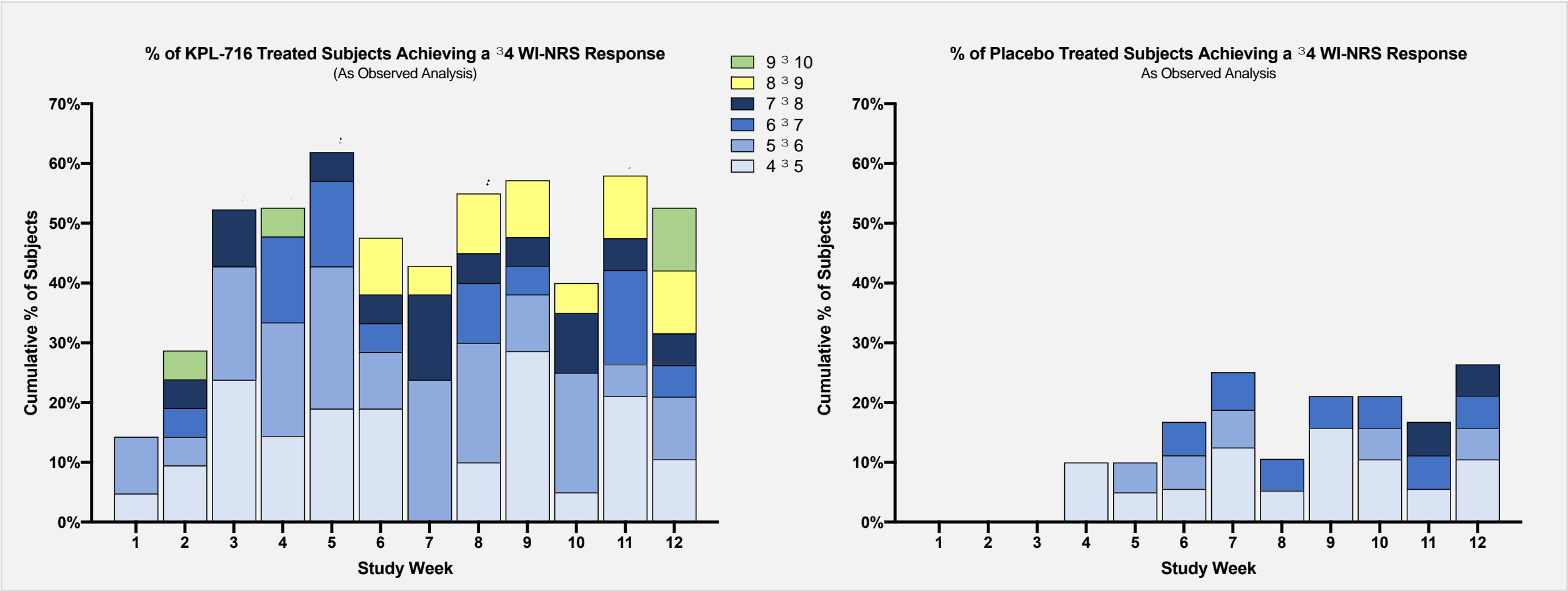
KPL-716 showed rapid and sustained reduction in pruritus versus placebo despite more flares in the active treatment arm



RSC: PLB - Rescue TCS used in placebo arm
RSC: KPL – Rescue TCS used in KPL-716 arm
Note: Based on full interim data set as of 1st database lock

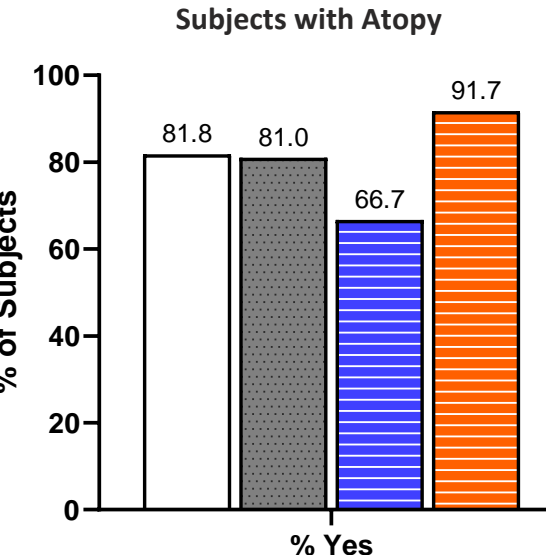
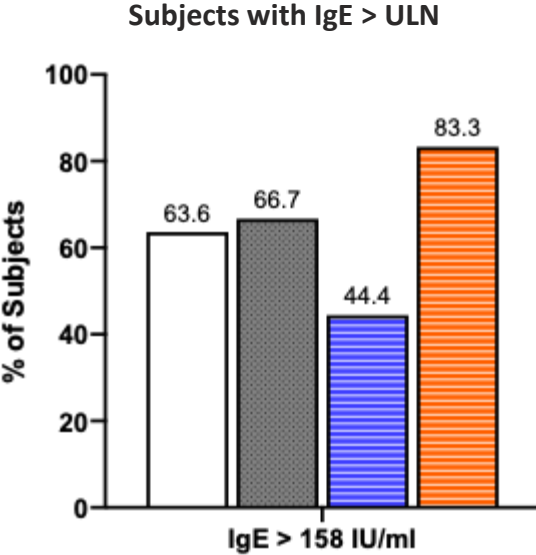
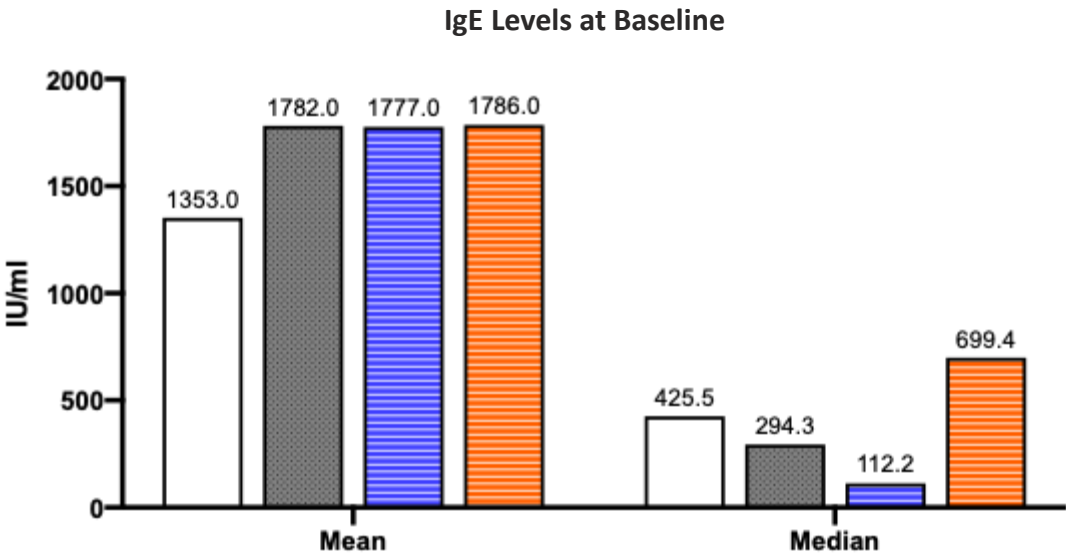
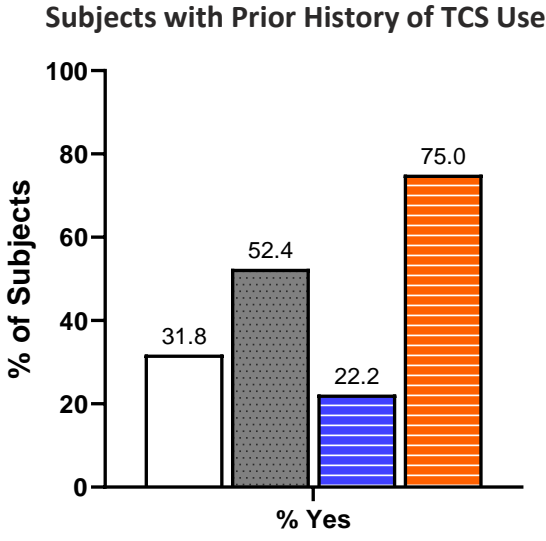
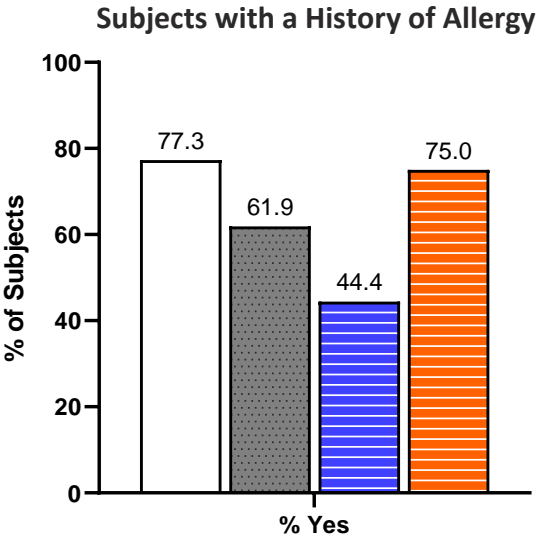
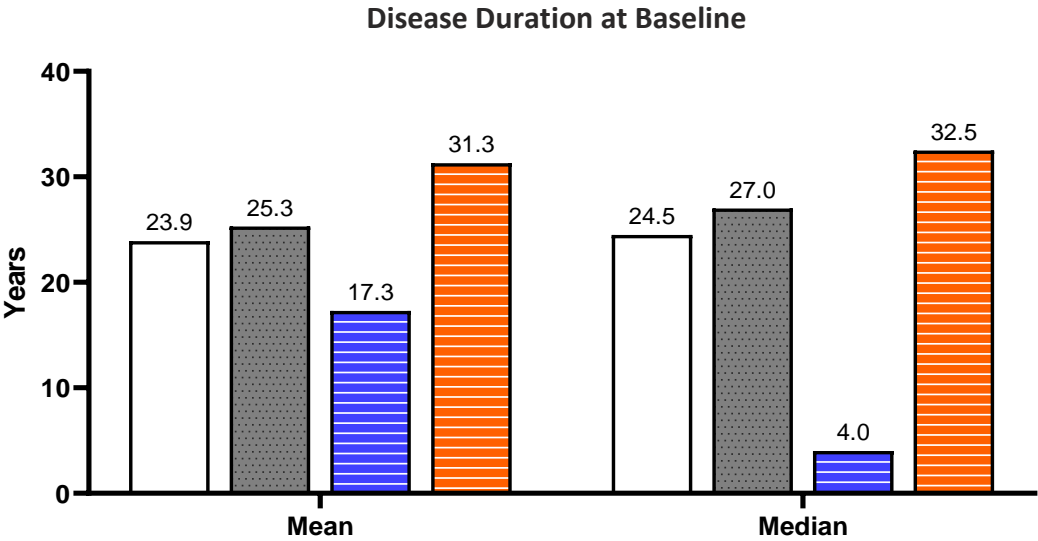


A larger percentage of subjects in the KPL-716 arm achieved a ≥ 4 -point change in weekly average WI-NRS versus placebo



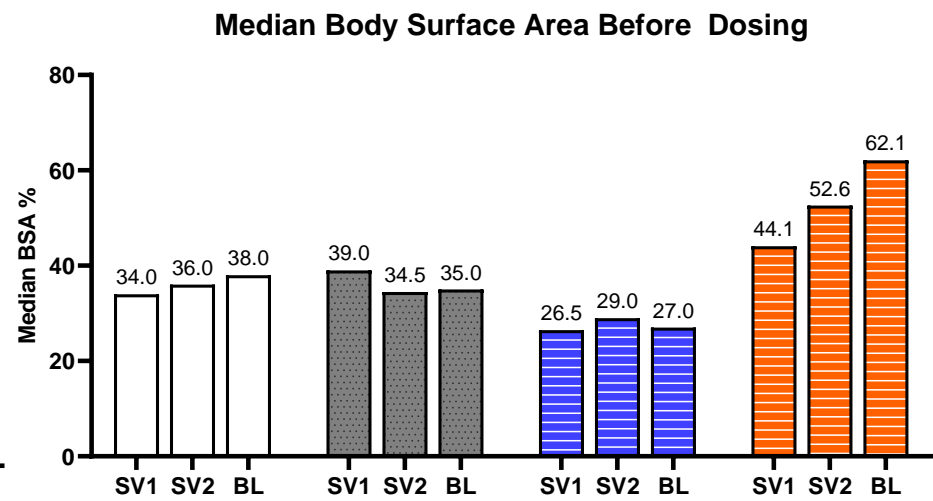
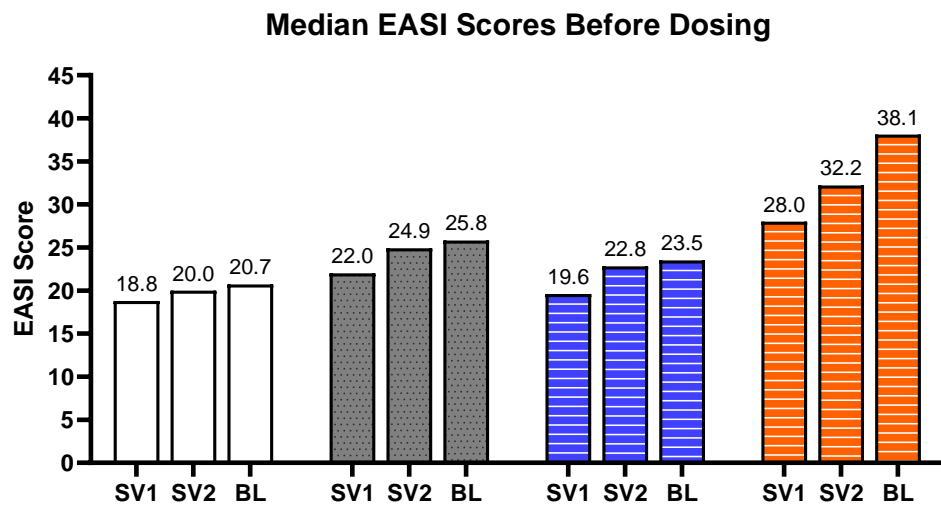
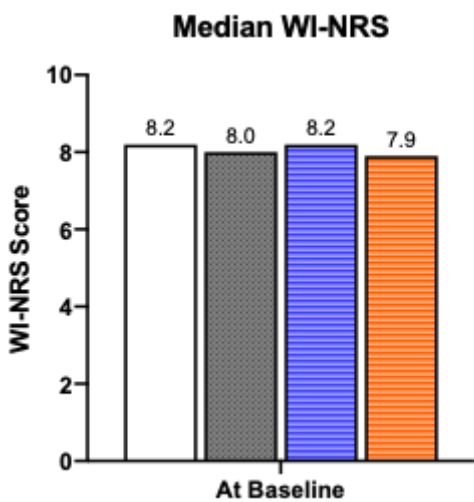
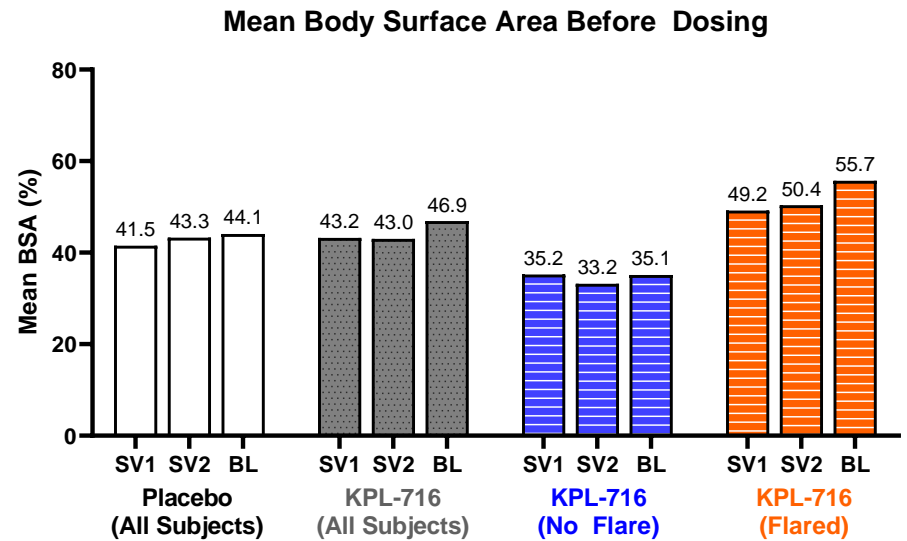
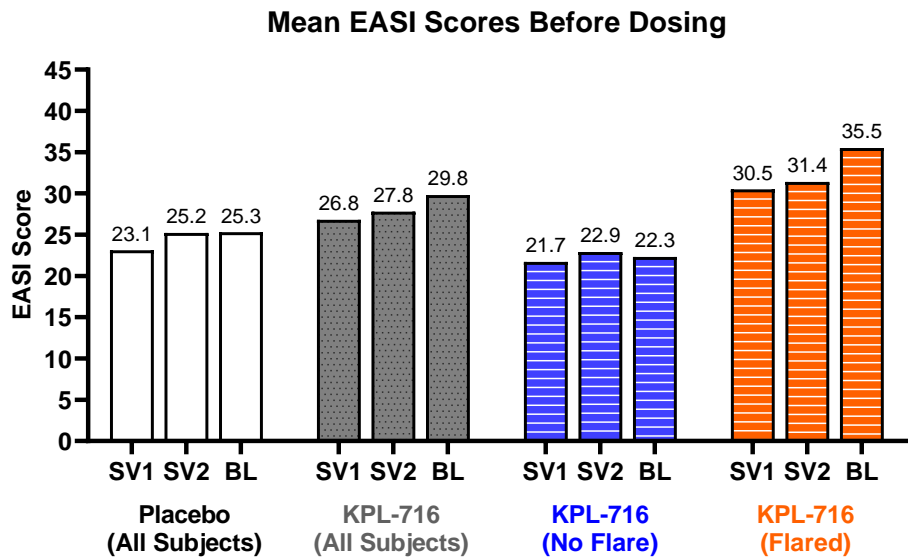
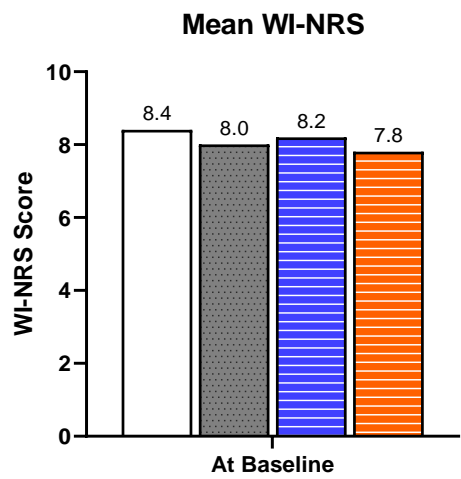
Baseline subject characteristics and retrospective groupings

- PBO (All)
- 716 (All)
- KPL-716 (Subjects Who Did NOT Flare)
- KPL-716 (Experienced a Flare)



Disease characteristics at baseline and retrospective groupings

- PBO (All)
- 716 (All)
- KPL-716 (Subjects Who Did NOT Flare)
- KPL-716 (Experienced a Flare)



Note: Based on full interim data set as of 1st database lock
SV1: Screening Visit 1; SV2: Screening Visit 2; BL: Baseline on Day 0 before first dose of KPL-716; TCS: Topical Corticosteroid; PBO: Placebo



KPL-404 – Phase 1

(monoclonal antibody targeting CD40)

Rilonacept

Mavrilimumab

KPL-716

KPL-404

KPL-045

Humanized monoclonal antibody inhibitor of signaling between CD40L and CD40

- CD40/CD40L interaction between B & T-cells are required for humoral responses
- Antigen presenting cells express and require signaling through CD40 for activation
- Proof-of-mechanism established in non-human primates
- Enrolling subjects in a single-ascending-dose Phase 1 trial in healthy volunteers

Rilonacept

Mavrilimumab

KPL-716

KPL-404

KPL-045

Fully-human monoclonal antibody inhibitor of signaling between CD30 and CD30L

- Involved in T-effector memory function, humoral response & T_H2 immunity
- CD30L is expressed at high levels on activated T cells
- Proof-of-mechanism established in mice and non-human primates
- Preclinical activities

Anticipated 2019-2020 milestones for rilonacept, mavrilimumab, KPL-716 and KPL-404

Program	Milestone	Anticipated Timing
Rilonacept	Top-line data from Phase 3 RHAPSODY trial in recurrent pericarditis	2H 2020
Mavrilimumab	Provide data from non-clinical and biomarker studies on the role of GM-CSF in GCA	2H 2019
	Announce additional investigational indication for mavrilimumab	2H 2019
	Top-line data from global Phase 2 trial in GCA	2H 2020
KPL-716	Provide data from non-clinical and biomarker studies of IL-31 and OSM in prurigo nodularis and atopic dermatitis	2H 2019
	Present top-line data from Phase 2a trial in PN	1H 2020
	Present interim data in a limited number of cohorts from exploratory Phase 2 study in diseases characterized by chronic pruritus	1H 2020
KPL-404	Present top-line data from single-ascending-dose Phase 1 trial in healthy volunteers	2H 2020

Kiniksa at a glance

Corporate Highlights



Bermuda-Based Corporate Entity

5

Pipeline Programs

>180

Issued Patents

Financial Highlights

~\$259M

Cash & Short-Term Investments¹

54.9M

Shares Outstanding¹

*Capital Allocation to High Value Opportunities Across Existing Portfolio,
Internal R&D and Business Development*

1) As of 9/30/19



Every Second Counts!™