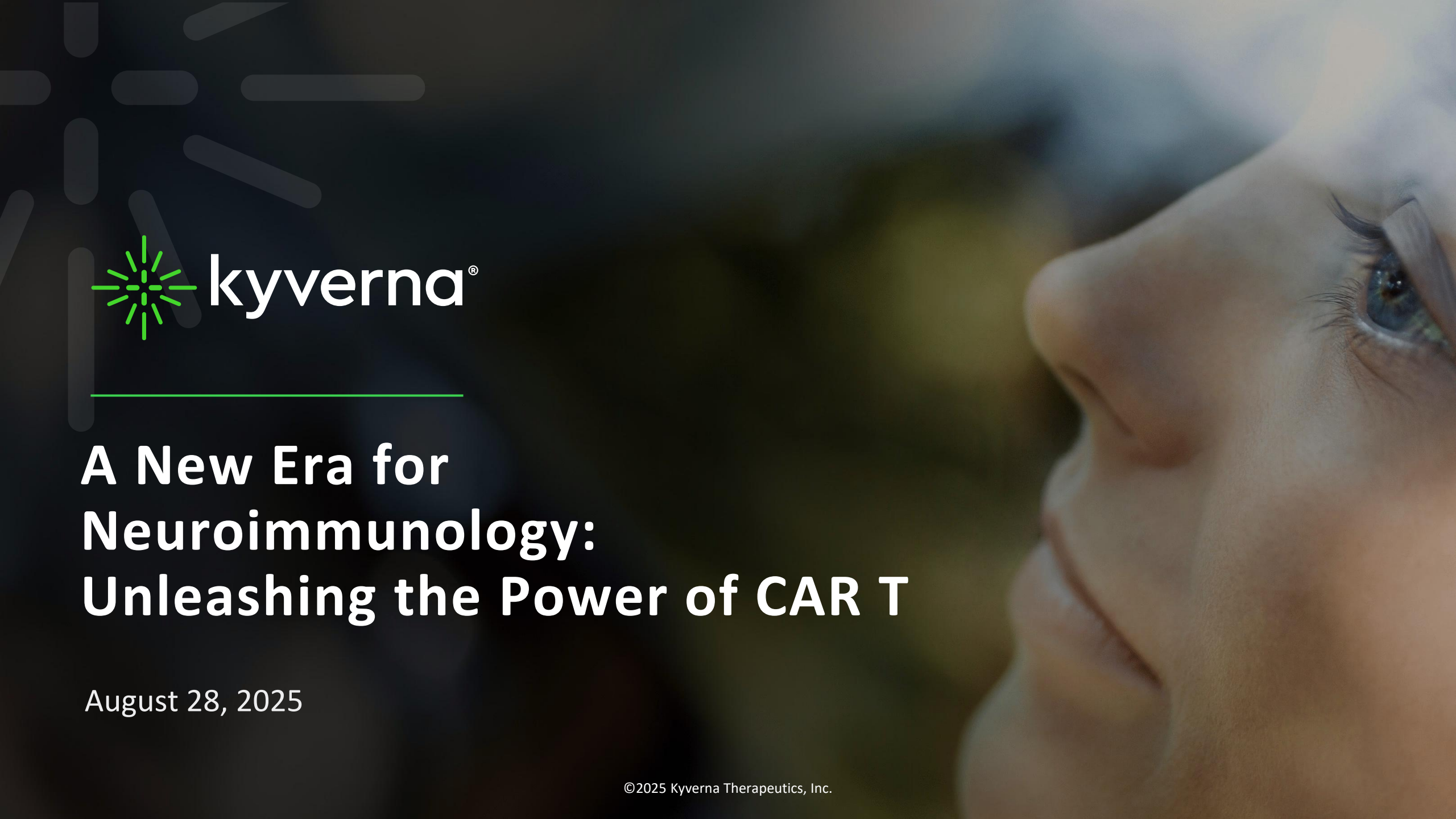

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A New Era for Neuroimmunology: Unleashing the Power of CAR T

August 28, 2025

Disclaimer and Forward-Looking Statements

This presentation contains forward-looking statements that are based on management's beliefs and assumptions and information currently available to management of Kyverna Therapeutics, Inc. ("Kyverna", "we", "our," or the "Company"). All statements other than statements of historical facts contained in this presentation are forward-looking statements. Forward looking statements include, but are not limited to, statements concerning: the Company's future results of operations and financial position, business strategy, drug candidates, planned preclinical studies and clinical trials, results of preclinical studies, named-patient access data, ongoing clinical trials, research and development costs, plans for manufacturing, regulatory approvals, timing and likelihood of success, as well as plans and objectives of management for future operations. These forward-looking statements are subject to risks and uncertainties, including the factors described under the Risk Factors section of the Company's most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q that the Company has filed or may subsequently file with the U.S. Securities and Exchange Commission. Actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. When evaluating Kyverna's business and prospects, careful consideration should be given to these risks and uncertainties.

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This presentation includes results from named-patient basis access. Similar to expanded access or compassionate use in the United States, "IH" or "Individueller Heilversuch," also known as "named-patient basis access," is a regulatory scheme in Germany that allows for the supply of a treatment that has not received marketing authorization for an individual patient in response to a request by the treating physician on behalf of the named patient. This option can be pursued for the expected benefit of a patient who has exhausted all available treatment options, under the discretion of the treating physician, with the patient's consent. The use of KYV-101 in the IH settings is not a substitute for, or intended to replace, our clinical trials. The goal is not to assess the effectiveness of a potential therapy, but rather to provide an individual patient with a possible efficacious approach when all other treatment options have failed, as determined by the patient's physician. While we do not expect to be able to use the results from these activities as the basis for approval in our applications for marketing approval to the U.S. Food and Drug Administration (FDA) or other foreign regulatory agencies, we believe such activities may provide additional clinical insights beyond highly focused clinical trials in specific geographies.

Please see Appendix for a glossary of certain abbreviations used throughout this presentation.

Welcome and Intro

Warner Biddle

Chief Executive Officer

Key Takeaways from Today's Event

1. **Kyverna is uniquely positioned to fundamentally change the treatment paradigm in MG and SPS:**

   KYV-101 has demonstrated **durable, drug-free and disease-free remission** with a single dose

2. **Valuable commercial opportunity in SPS** given significant unmet need in a rare disease, laying the foundation for a **rapid and efficient launch in MG**, a large and growing market

3. **Innovative registrational Phase 3 trial design for KYV-101 in MG:**

   Aligned with FDA on approach that leverages KYV-101's differentiated clinical profile and **supports clear and rapid path to BLA**

Today's Agenda

Setting the Stage

- Welcome and intro
- Why CAR T in Autoimmune

SPS Overview

- Establishing a New Treatment Standard in SPS

MG Overview

- Transformative Outcomes with KYV-101 in MG
- MG Treatment Landscape: CAR T Opportunity
- Changing the Treatment Paradigm in MG

Commercialization

- Path to Commercializing our Neuroimmunology Franchise

Q&A

Speakers

Warner Biddle Chief Executive Officer

Sham Dholakia M.D., Ph.D., Chief Product Officer

Naji Gehchan M.D., MSc, MBA, Chief Medical & Development Officer

Dan Maziasz MBA, Chief Business Officer

Ricardo Grieshaber-Bouyer M.D., Ph.D., FAU Erlangen-Nümberg

Aiden Haghikia M.D., Hanover Medical School

Sri Muppidi M.D., Stanford Medicine

Our Experts for Today’s Event

Ricardo Grieshaber-Bouyer, M.D., Ph.D.
FAU Erlangen-Nümberg

Aiden Haghikia, M.D.
Hanover Medical School

Sri Muppidi, M.D.
Stanford Medicine

LIBERATING AUTOIMMUNE PATIENTS

through the

CURATIVE POTENTIAL OF CAR T-CELL THERAPY

kyverna®

Kyverna Is Poised to Deliver on the Curative Potential of CAR T for Autoimmune Patients

Unique CAR Construct Optimal for Autoimmune

100 patients treated with KYV-101

Derisked Opportunity with Near-Term Catalysts

Potential to be First-in-Class with Clear Path to BLA

Experienced Cell Therapy Leadership & Strong Cash Position

kyverna™

KYV-101: Ideal Modality for Treating Autoimmune Diseases

TARGETED ATTRIBUTES	KYV-101	Alternate Modalities			
		Antibodies	T-Cell Engagers	In-Vivo	Allogeneic
Single dose	✓	✗	✗	?	?
Deep B-cell depletion in tissue	✓	✗	✗	?	?
On-target specificity	✓	✓	✓	?	✓
Drug-free, durable remission	✓	✗	✗	?	?

Executing on Long-Term Vision to Be the Leader in CAR T Across Autoimmune Diseases

Establish First-Mover Advantage

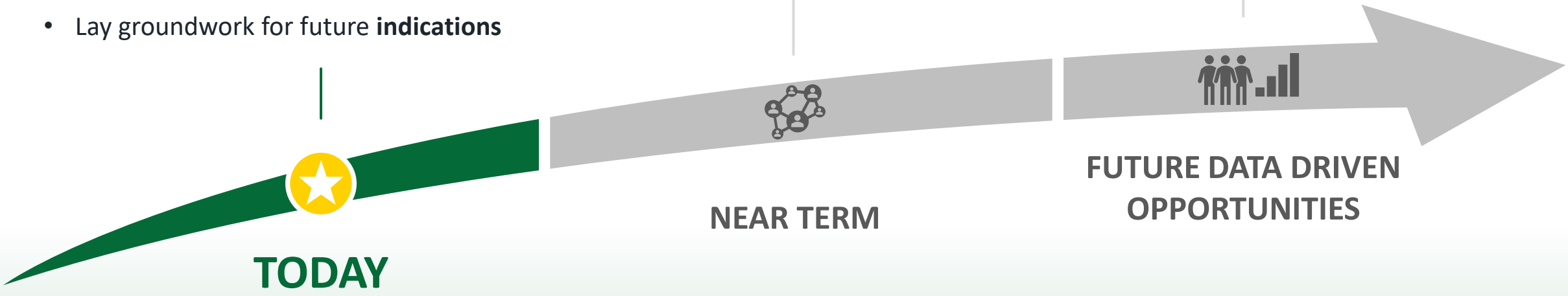
- Build First-in-Class Neuroimmunology Franchise with **SPS and MG**
- Lay groundwork for future **indications**

Broaden Patient Access

- Unlock additional patient value with KYV-102, rapid whole blood approach requiring no apheresis

Expand Our Reach

- Additional studies across B-cell driven autoimmune diseases (MS, RA, LN, others)
- Total estimated market opportunity of **8.3M** patients[1]



Fast to Market Strategy with Opportunity to Rapidly Expand into Additional Indications

1. Published literature through GlobalData market analysis reports 2022.

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Today's Focus: Building a First-in-Class Neuroimmunology Franchise

Stiff Person Syndrome

Myasthenia Gravis

Strategic Rationale

- ✓ Compelling initial clinical data in both indications
- ✓ High unmet patient needs
- ✓ SPS: highly debilitating and progressive disease with no FDA-approved therapies
- ✓ MG: suboptimal outcomes and high-cost burden with existing chronic therapies
- ✓ First-mover advantage
- ✓ Fast to market
- ✓ Shared infrastructure drives operational & cost synergies
- ✓ Amplification of neurology call point

Multiple, Value-Creating Near-Term Catalysts

Program	Anticipated Milestones
Stiff Person Syndrome RMAT, ODD	✓ Complete Pivotal Phase 2 Enrollment mid-2025 Report Topline Pivotal Phase 2 Data 1H 2026 BLA filing in 1H 2026
Myasthenia Gravis RMAT, ODD*, FTD†	✓ Confirm Registrational Path with Regulators 1H 2025 Report Interim Phase 2 Data Q4 2025 Initiate Patient Enrollment for Phase 3 Registrational Trial by Year-End 2025
Additional Indications	MS: Report Phase 1 IIT Data Q3 2025 RA: Report Phase 1/2 IIT Data Q4 2025 LN: Report Phase 1 Data in a Peer-Reviewed Publication in 2026
Future Pipeline	File KYV-102 IND Application Q4 2025

✓ COMPLETED

*EU & US. †Fast track designation does not assure that we will experience a faster development process, regulatory review or regulatory approval process compared to conventional FDA procedures.

kyverna®

Helping Autoimmune Patients Achieve Drug-Free, Disease-Free Remission

Free of active disease and off immunosuppressants and glucocorticoids

First SPS patient

> 23 Months

First MG patient

> 24 Months

Named-patient basis access data. KYV-101 therapeutic dose is 1×10^8 CAR T cells.

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Ricardo Grieshaber-Bouyer, M.D., Ph.D.

FAU Erlangen-Nümberg

Breakthrough Immunotherapies: Clinical Experience and Molecular Mechanisms

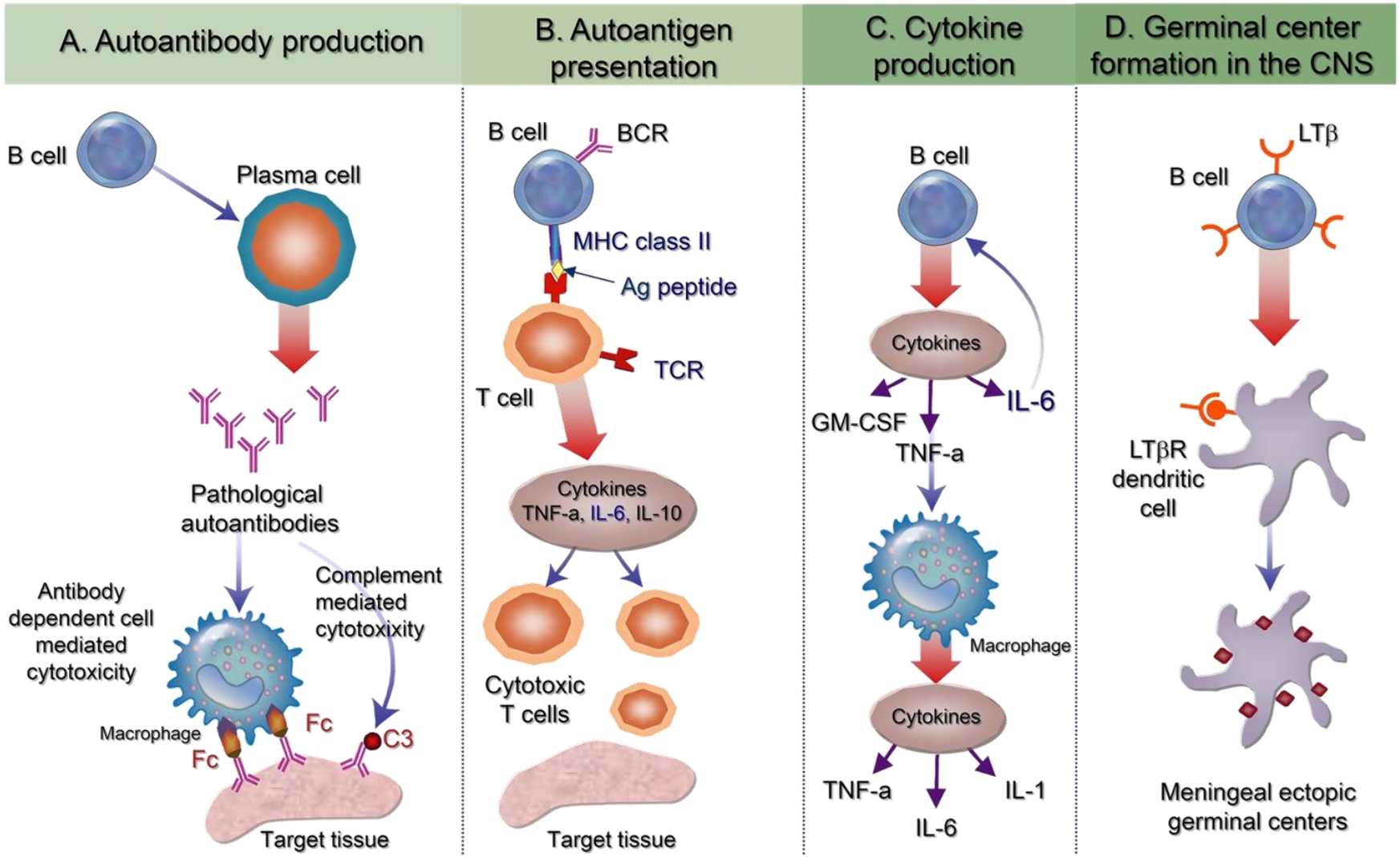
Ricardo Grieshaber-Bouyer, M.D. Ph.D., MHBA
Professor of Clinical Systems Immunology
Head of the Clinical Trial Unit
Department of Internal Medicine 3 – Rheumatology and Immunology
www.rgb-lab.de

FAU
Friedrich-Alexander-Universität
Medizinische Fakultät

DZI Deutsches Zentrum Immuntherapie

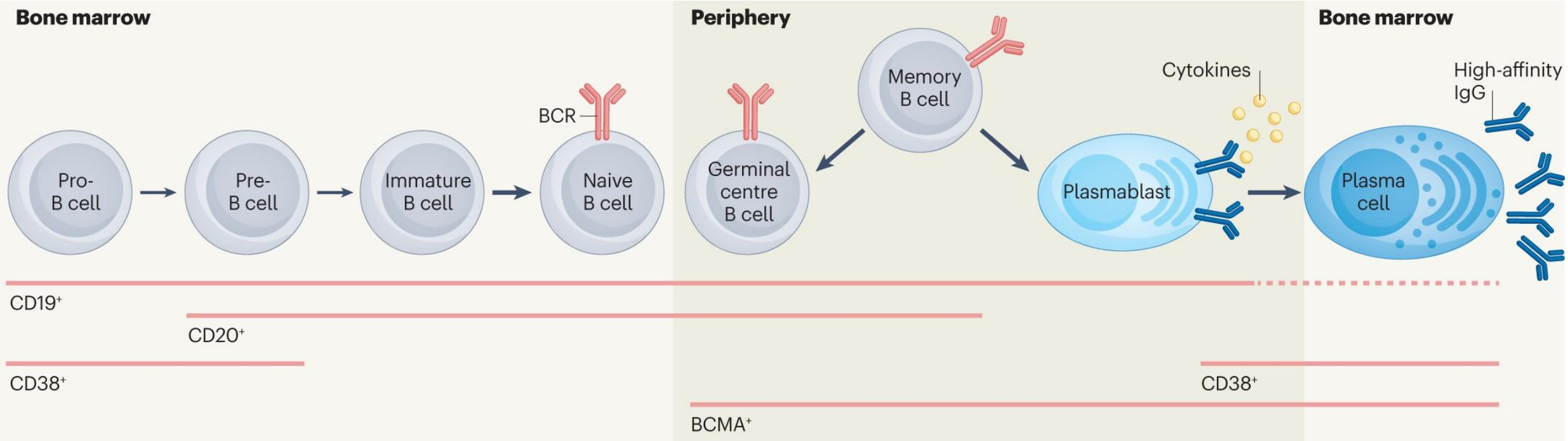
Uniklinikum Erlangen

B Cells Are Essential Players in Immune-Mediated Neurological Diseases



Stathopoulos & Marinos. *Neurotherapeutics* 2022

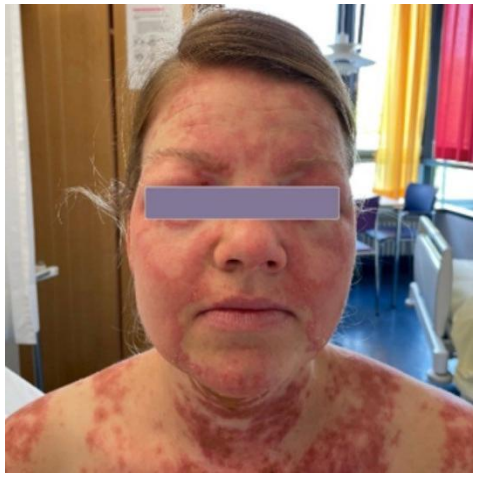
Targeting CD19 Provides Broad Coverage Across B Cell Subsets

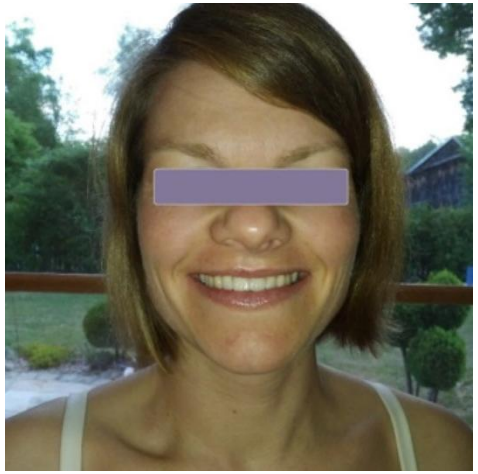


Heeger et al. *Nature Reviews Nephrology* 2024

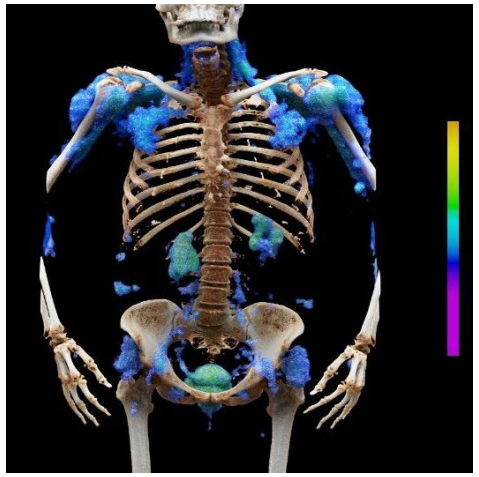
CD19 CAR T-Cell Therapy Transformed Autoimmune Disease Treatment

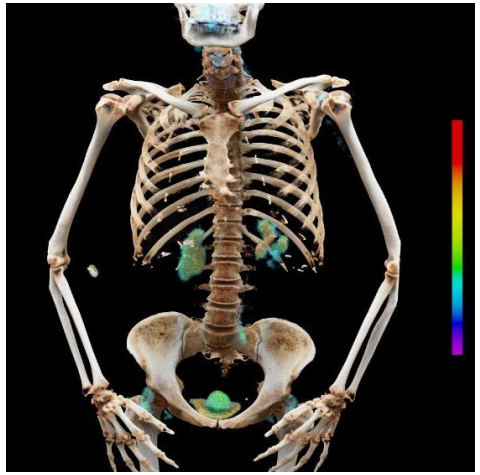
Acute cutaneous lupus



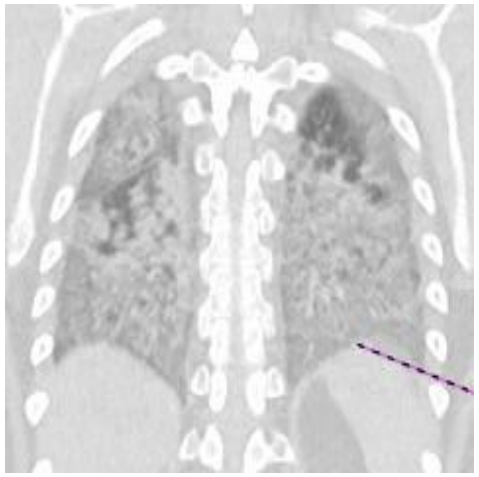


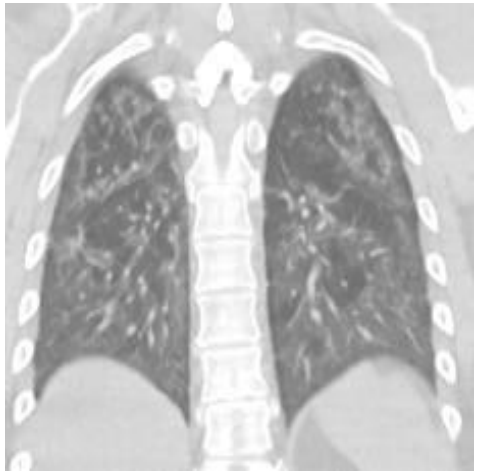
Myositis



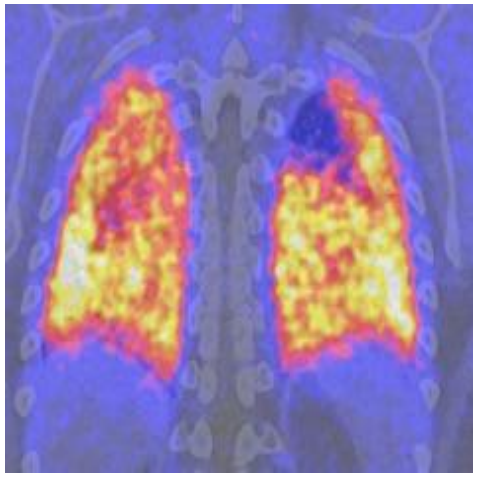


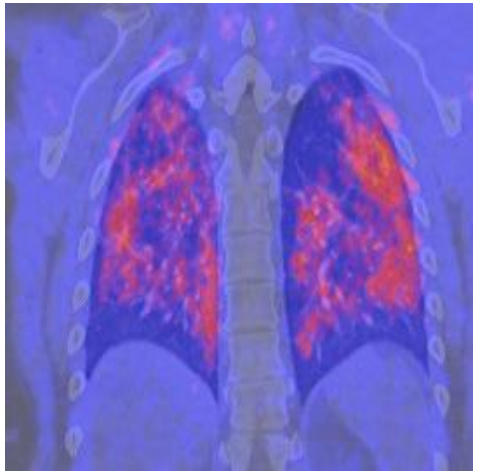
Interstitial lung disease





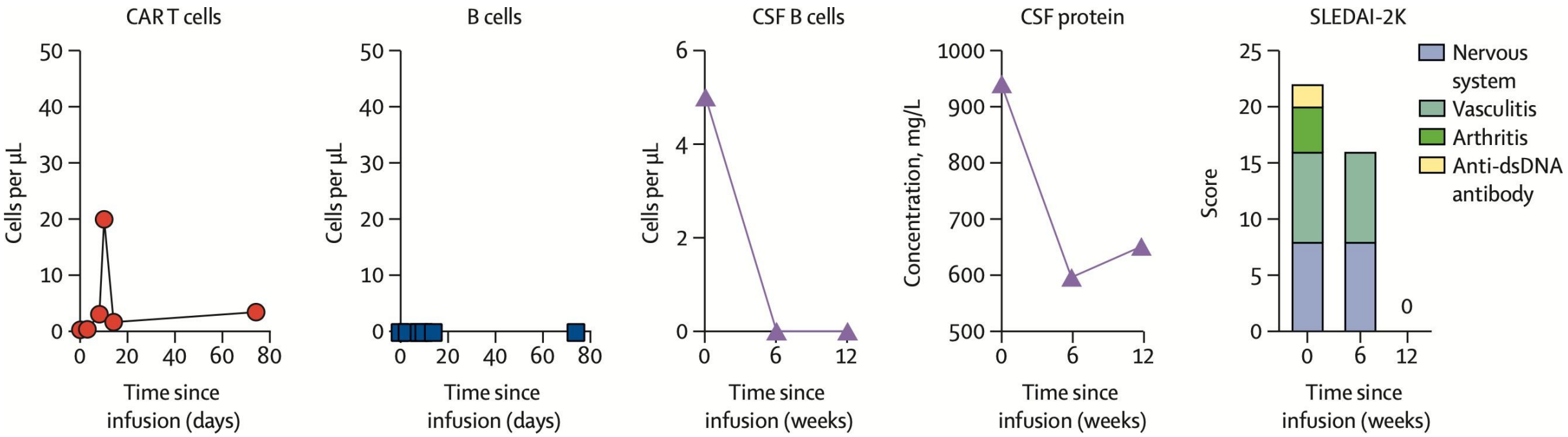
ILD (FAPI PET-CT)





Prior Rituximab Led to Incomplete B Cell Depletion in the CNS – Complete B Cell Depletion Accomplished via CD19 CAR T-Cell Therapies

20-year old male with active SLE with severe, progressive CNS involvement with subtotal paraplegia. Treatment refractory to HCQ, GLC, MTX, RTX, CYC, plasmapheresis



Hagen M & Grieshaber-Bouyer & Schett G. et al. *Lancet* 2024 doi: 10.1016/S0140-6736(24)02265-7

KYV-101 CD19 CAR T-Cell Therapy Crosses the Blood Brain-Barrier and Expands Within the CNS

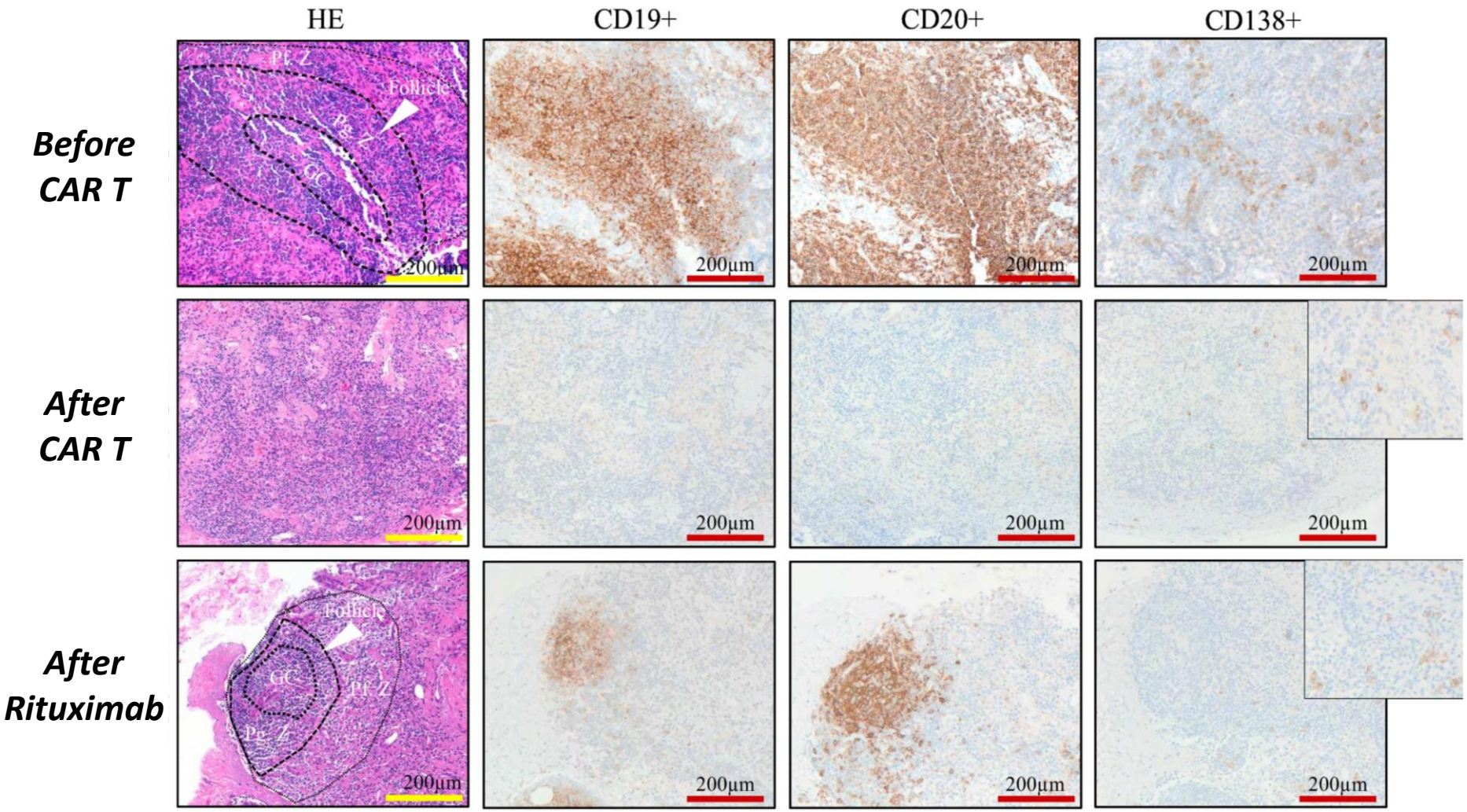
KYV-101 CAR T-Cell Expansion in CNS in 4 Patients with Progressive MS

Excellent CAR-T Expansion in Blood and CSF								
	1		2		3		4	
	Total Counts (cells)	Fold Increase	Total Counts (cells)	Fold Increase	Total Counts (cells)	Fold Increase	Total Counts (cells)	Fold Increase
Peak CAR-T in Circulation (Blood)	475 M	14.5	254 M	7.7	1.3 B	40	124 M	1.24
CAR-T in CSF on D+14	300 K		3.78 M		1.65 M		1.33 M	

Stanford University

Dunn J, et al. Oral presented at: AAN Annual Meeting; April 5-9, 2025; San Diego, CA.

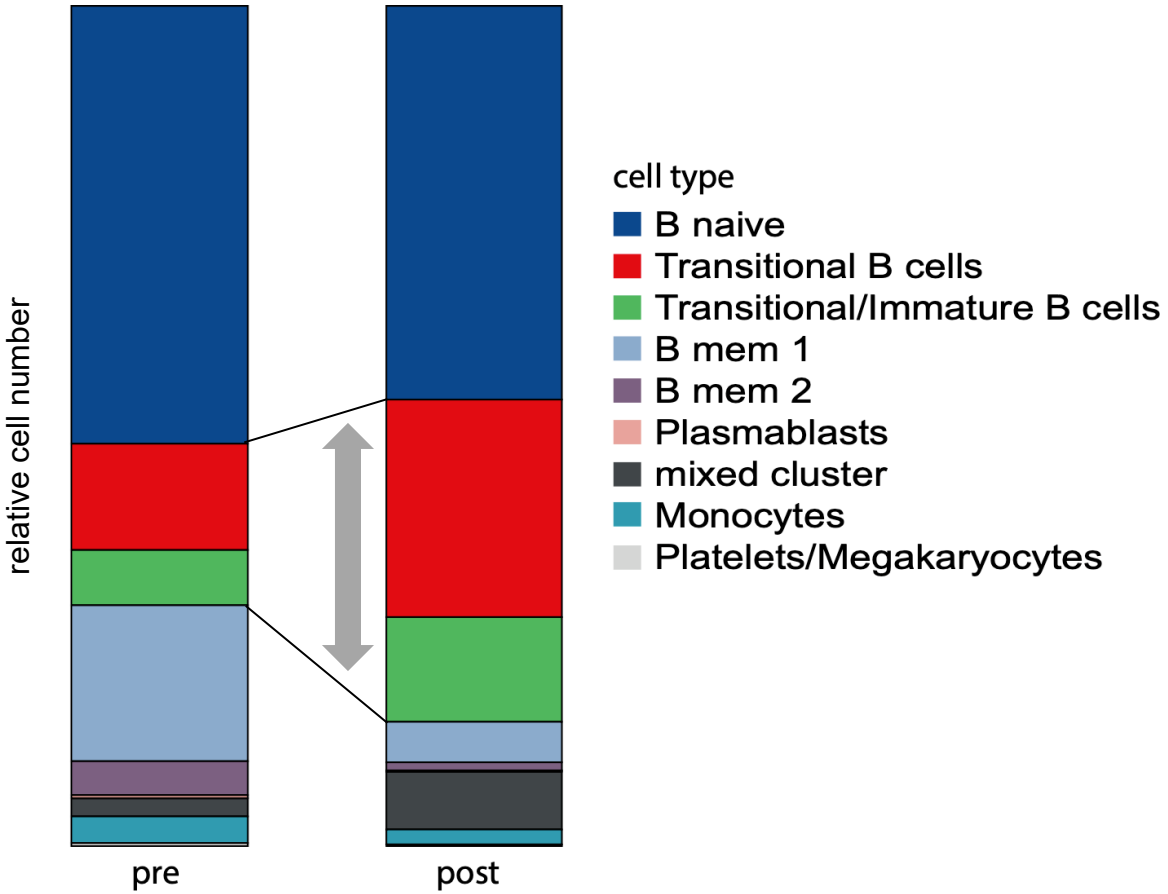
CD19 CAR T-Cells Deplete B Cells in Lymphoid Tissues



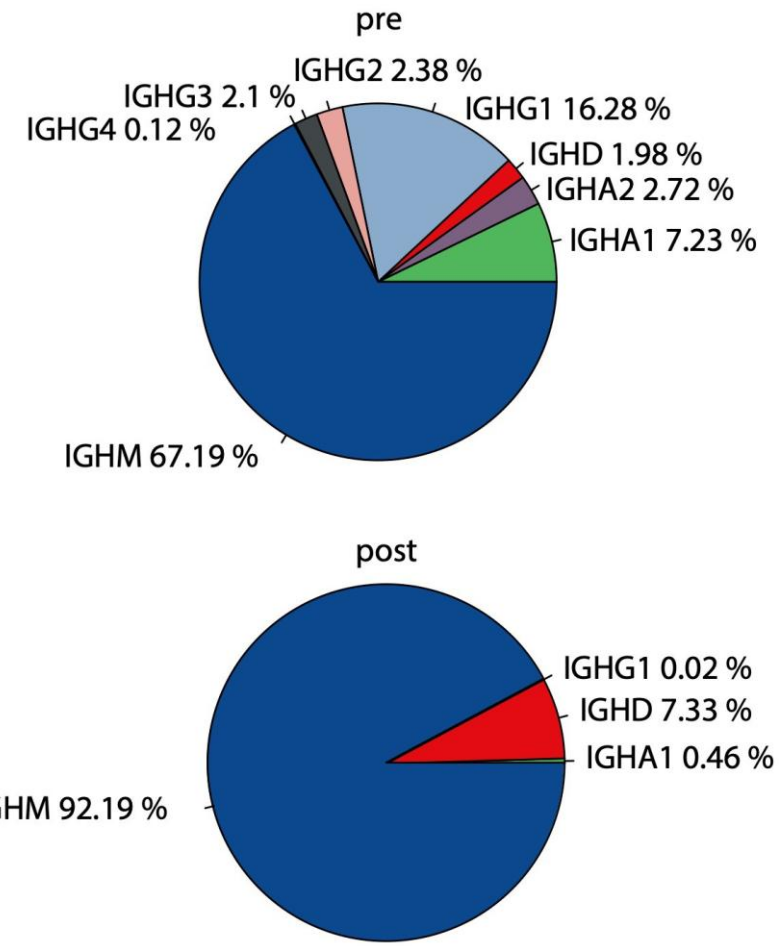
Tur C & Grieshaber-Bouyer R & Schett G & Ramondo MG. et al. *Ann Rheum Dis* 2024

Evidence of Immune RESET in the B Cell Compartment

Expanded transitional and immature B cells



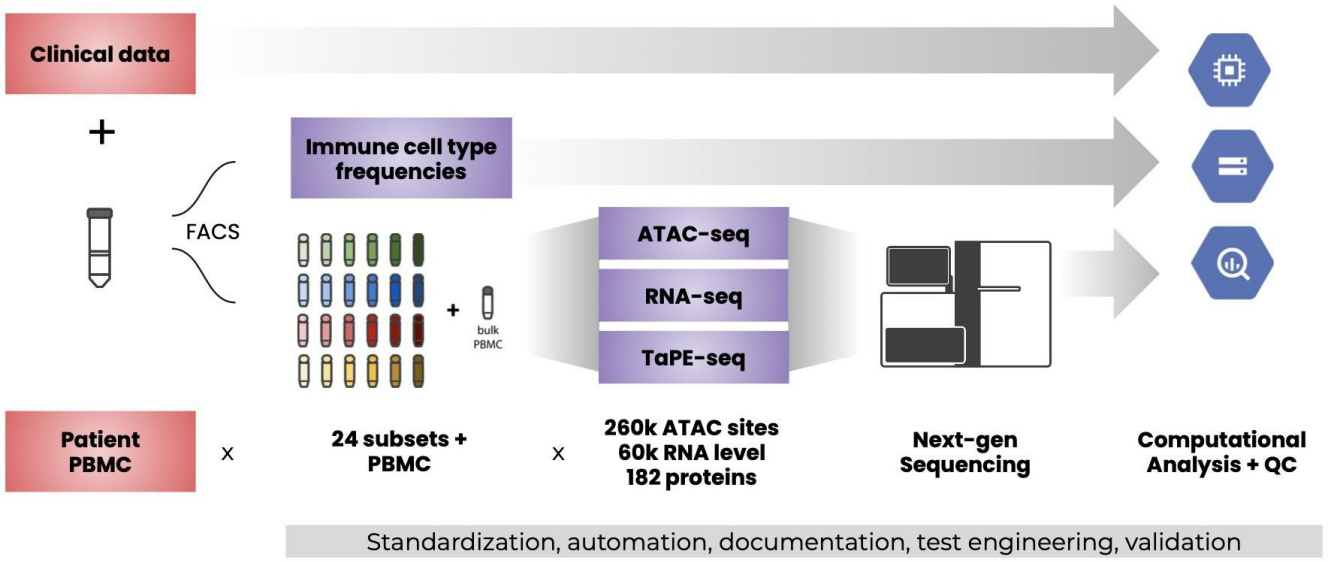
Naïve B cell repertoire



Wilhelm A & Grieshaber-Bouyer R & Schett G & Krönke G. et al. *JCI Insight* 2024

CD19 CAR T-Cell Therapy Has Profound Effects on Many Other Immune Cell Types Beyond B Cells

Schematic workflow



24 immune cell subsets

Myeloid Cells

Monocytes
MoCl (Classical)
MoIn (Intermediate)
MoNC (Nonclassical)

Dendritic cells
coDC (Conventional)
pIDC (Plasmacytoid)

T cells

CD4 T cells
Treg (Regulatory T cells)
T4nv (Naïve CD4)
T4cm (Central memory CD4)
T4em (Effector memory CD4)
T4ra (CD45RA^{+} effector CD4)

CD8 T cells
T8nv (Naïve CD8)
T8cm (Central memory CD8)
T8em (Effector memory CD8)
T8ra (CD45RA^{+} effector CD8)

γδ T cells
gadT (Gamma delta T)

NK cells
NKhi (CD56^{hi})
Nklo (CD56^{low})

B cells

Effector B cells
cMBc (Class switched memory)
MBim (IgM^{+} IgD^{-} memory)
BnCS (Double-negative 1)
aMBc (Atypical memory)
pBcs (Plasmablasts)

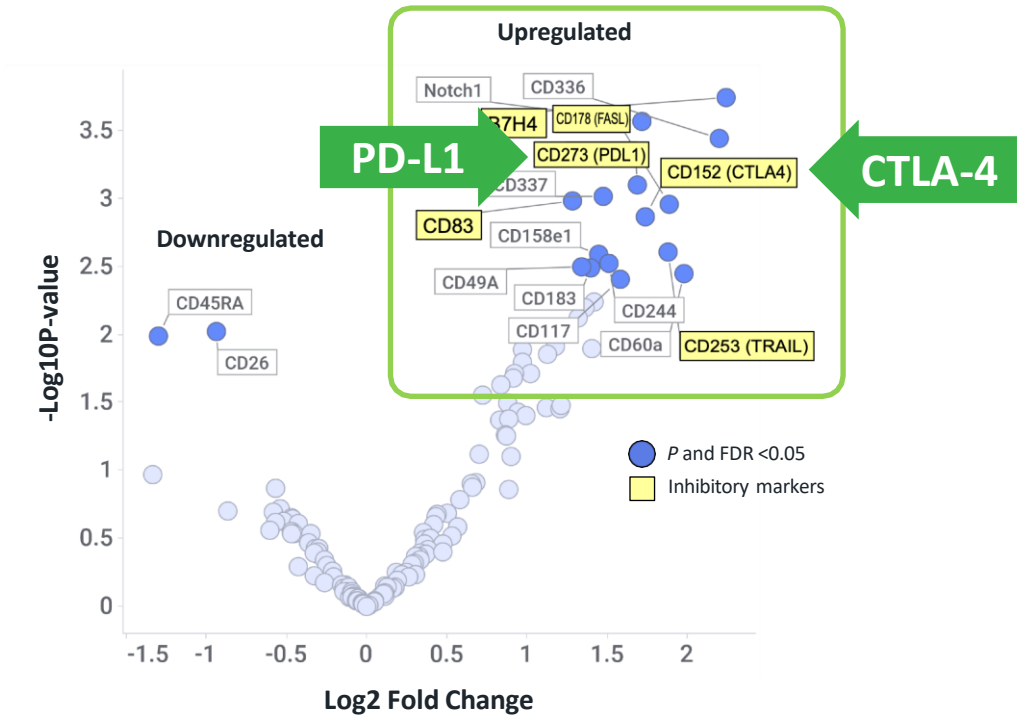
Naïve B cells
BnUS (Unswitched naïve)
traB (Transitional)

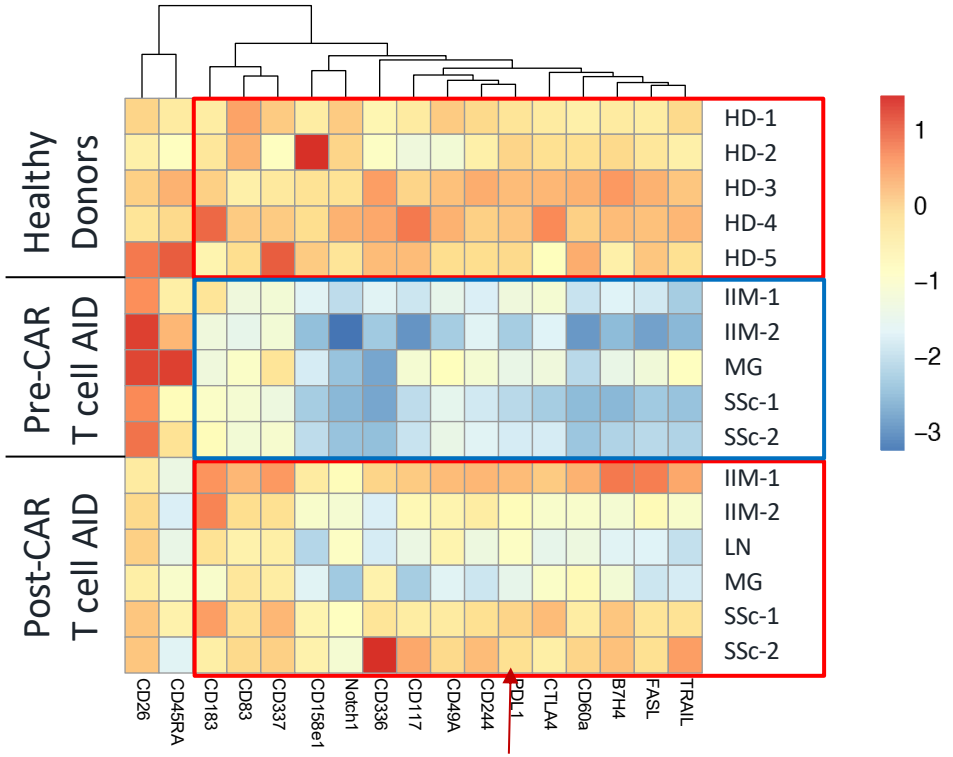
Multi-omic deep immune profiling before and after CAR T-cell therapy
Verily Immune Profiler™ platform

Grieshaber-Bouyer R & Chou J & Schett G et al. Oral presented at: ACR Annual Meeting; November 16, 2025; Washington DC

Profound Favorable Effects of CD19 CAR T-Cells on Regulatory T Cells

Treg inhibitory proteins are significantly increased post treatment to a level comparable to healthy donors



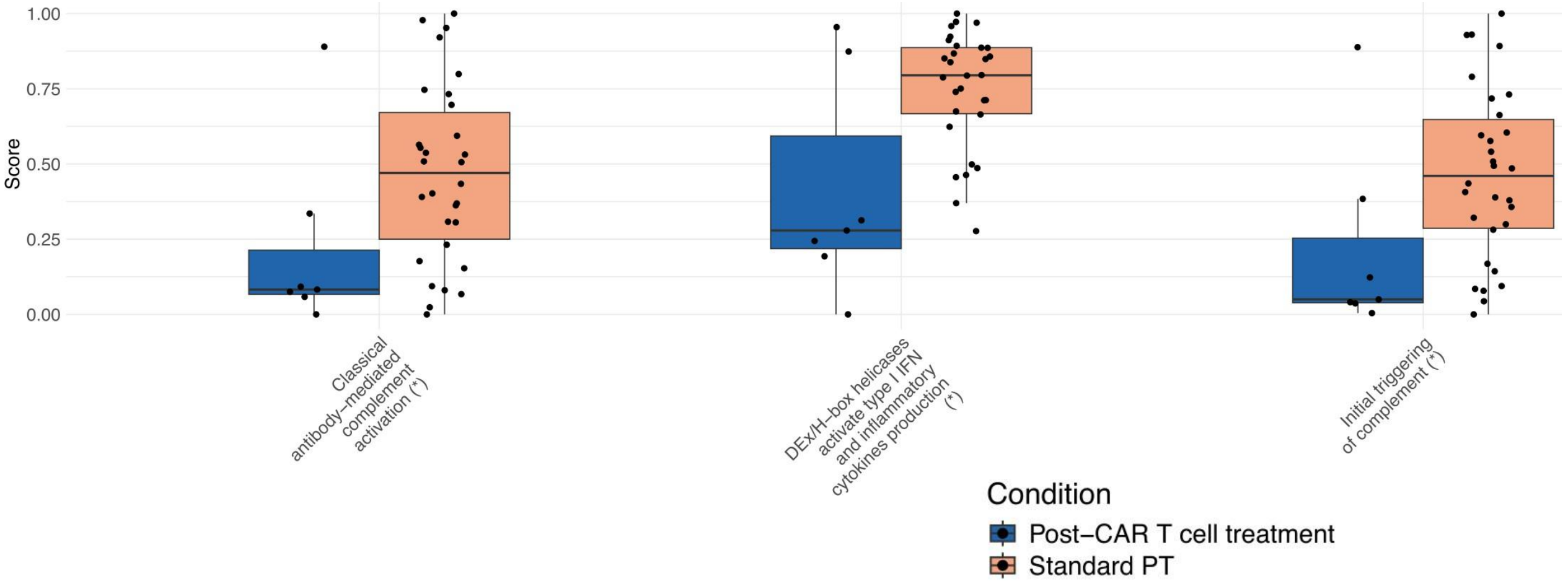


Data shown include available subsets derived from patients with autoimmune disease (N=6).

Grieshaber-Bouyer R, Chou J, Schett G. et al. Oral presented at: ACR Annual Meeting; November 16, 2025; Washington DC

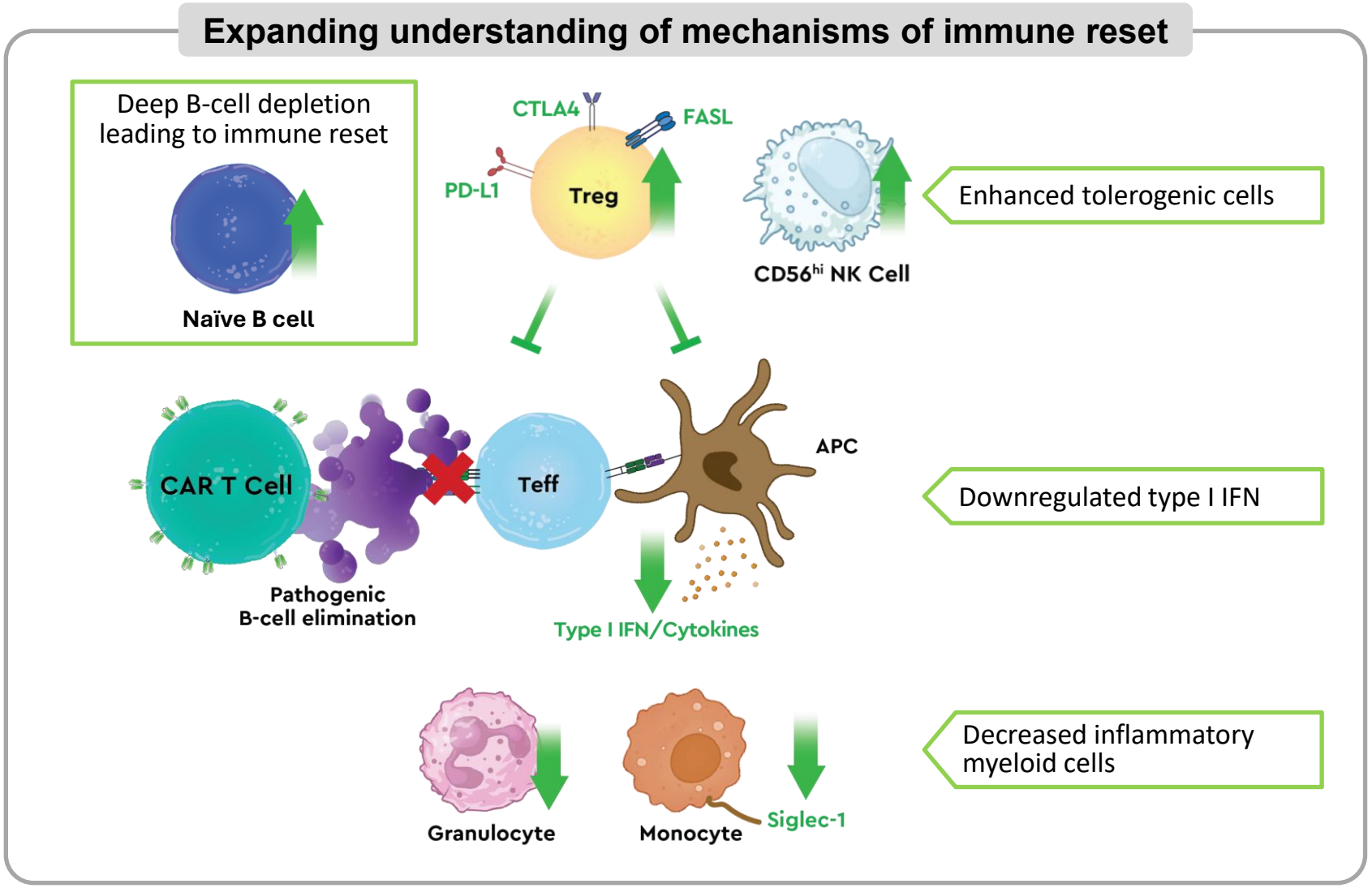
Improved Biomarker Profile with CD19 CAR T Cells

Different molecular signature of remission after CD19 CAR-T cell therapy compared with conventional pharmacotherapy in SLE



Garantziotis P & Grieshaber.Bouyer R & Schett G & Parodis I. et al. *Ann Rheum Dis* 2025

Immune Reset: from Cellular Mechanisms to Holistic Understanding



Grieshaber-Bouyer R & Chou J & Schett G et al. Oral presented at: ACR Annual Meeting; November 16, 2025; Washington DC

Summary

New insights into CD19 CAR T-cell therapy in autoimmune diseases

- Broad and deep depletion of pathogenic B cells in tissues and circulation
- Positive impact beyond B cells on a broader set of immune cell types
- Specific impact on regulatory T cells
- Broad impact on inflammatory cytokines
- Holistic immune reset is possible

Establishing a New Treatment Standard in SPS

Sham Dholakia, M.D., Ph.D.

Chief Product Officer

KYV-101 Has Demonstrated Promising Efficacy in Stiff Person Syndrome

Pre-infusion

Loss of Leg Control; Repeated Falls; Wheel-Chair Support

4-6 Months Post

Able to Walk and Turn With Aids

8 Months Post

Able to Walk Unaided Without Fear of Falling

Drug-Free Remission for >23 months

- Reduced stiffness
- Improved mobility
- Stable gait
- Better walking speed
- >95% reduction in anti-GAD antibody

Named-patient basis access data. Drug-free refers to immunosuppressant and immunomodulatory agents only.

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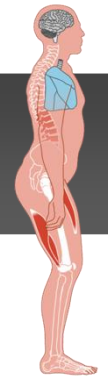
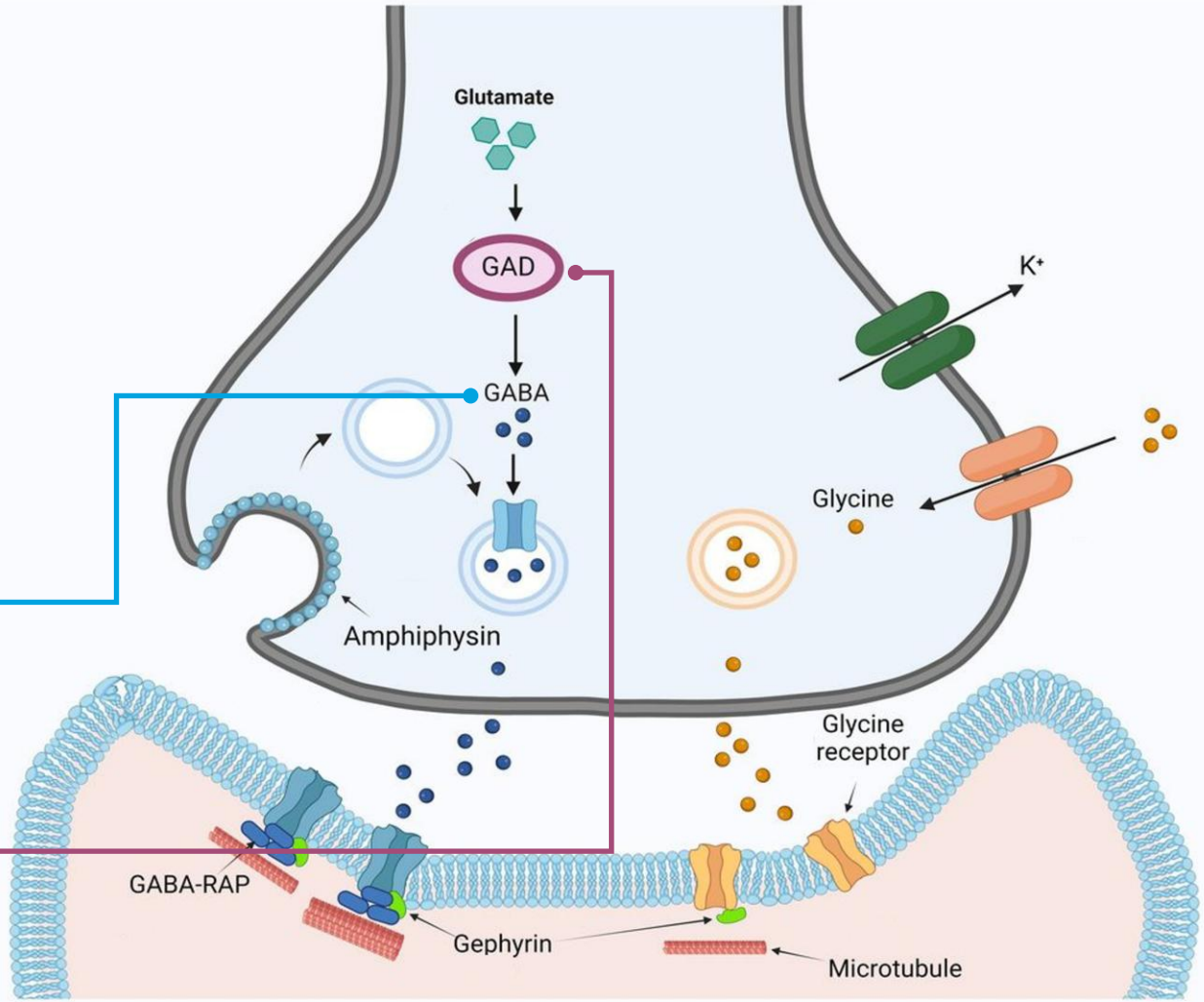
SPS Is Highly Debilitating Due to Lack of Mobility



SPS Pathophysiology[1,2]

- Progressive rigidity and muscle spasms
- GABAergic inhibitory pathways and synaptic signaling targeted
- SPS commonly associated with **GAD autoantibodies** produced by B cells Y

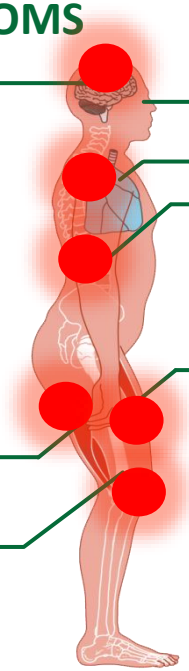


Source: Bose S, et al. *Pract Neurol.* 2025;25:6-17.

1. Baizabal-Carvallo JF, Jankovic J. *J Neurol Neurosurg Psychiatry*. 2015;86:840-848. 2. Dalakas MC. *Neurotherapeutics*. 2022;19:832-847.

SPS is a Progressive Disease with Significant Disease Burden and Symptom Severity that Can Lead to Mortality

SPS Symptoms[1]



PSYCHIATRIC SYMPTOMS

generalized anxiety disorder, depression, and specific phobias

MUSCULAR RIGIDITY

taut facial expression

difficulty breathing

stiffness, hyperlordosis

MUSCULAR SPASMS

intermittent painful spasms

fracture of bones and joint dislocations

proximal limb weakness

Patients are often under or misdiagnosed

DISEASE PROGRESSION

80% of patients lose mobility, needing walking aid assistance or wheel-chair[2-4]

"Freezing attacks" and sudden falls requiring ER care[2,3]

Can lead to **permanent disability** and **increased risk of mortality**[4]

SPS diagnosis based on symptoms and antibody testing[3]

1. Adapted from https://www.medicalnewstoday.com/articles/stiff-person-syndrome#Symptoms. 2. Rakocevic G, et al. *BMC Neurol*. 2019;19:1. 3. Dalakas MC. *Nat Rev Neurol*. 2024;20(10):587-601. 4. Duddy ME, Baker MR. *Front Neurol Neurosci*. 2009;26:147-165.

No FDA-Approved Therapies for SPS; Off-Label Treatments Fail Majority of Patients

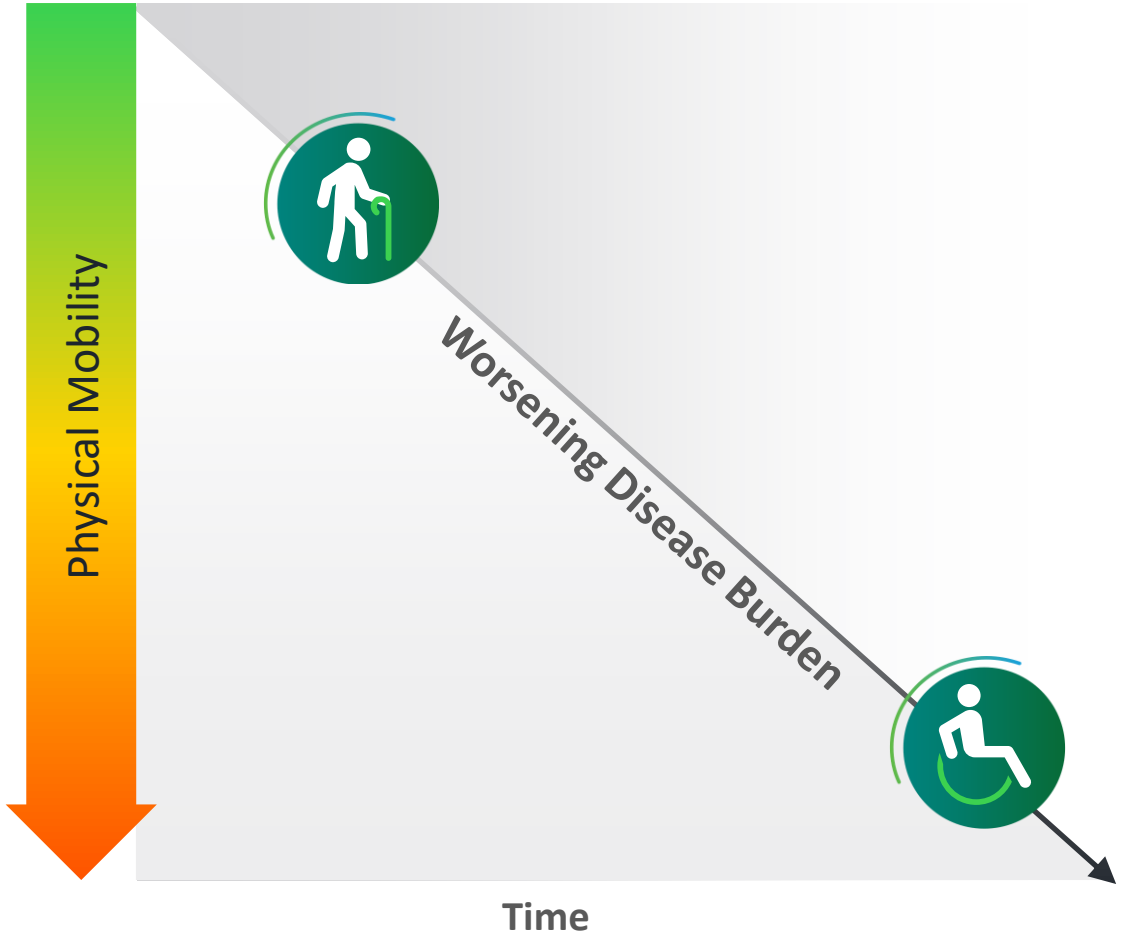
Most SPS patients receive symptomatic therapies and many eventually advance to off-label immunotherapies

Symptomatic Treatments[1-3]
Muscle relaxants and anti-seizure

Immunotherapy[1-3]
Off-Label immunosuppressants, rituximab and IVIg

Therapy and Supportive Care[4,5]
Physical, speech and occupational therapy

Psychiatric Therapy[1-4]
Anti-depressants and benzodiazepines



1. Dalakas MC. *Nat Rev Neurol*. 2024;20(10):587-601.2. Alexopoulos H, Dalakas MC. *Eur J Clin Invest*. 2010;40(11):1018-25. 3. Yi J, Dalakas MC. *Neurol Neuroimmunol Neuroinflamm*. 2022;9(5):e200011. 4. Yale Medicine. https://www.yalemedicine.org/conditions/stiff-person-syndrome-sps. Accessed 21 Aug 2025. 5.National Institute of Neurological Disorders and Stroke. https://www.ninds.nih.gov/health-information/disorders/stiff-person-syndrome. Accessed 21 Aug 2025.

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Significant Limitations of Off-Label Immunotherapies Drive Need for Novel Treatment Options in SPS

IVIg (Intravenous Immunoglobulin)

- Only modest improvement in stiffness and spasms for many patients[1]
- **Temporary benefit which wanes over time[2]**; symptoms return between treatments[1]
- **Requires ongoing infusions**—often monthly[1,3]
- Side effects include risk of thrombotic events (including pulmonary embolism)[1,4]

Rituximab (anti-CD20 mAb)

- **Limited and inconsistent efficacy** as either a monotherapy or combination with IVIg[5,6]
- Combination use leads to incremental cost and infusion burden with unclear benefit[1]
- **Can take months to see effect[7]**
- Infection risk driven by long-term immune suppression[8]

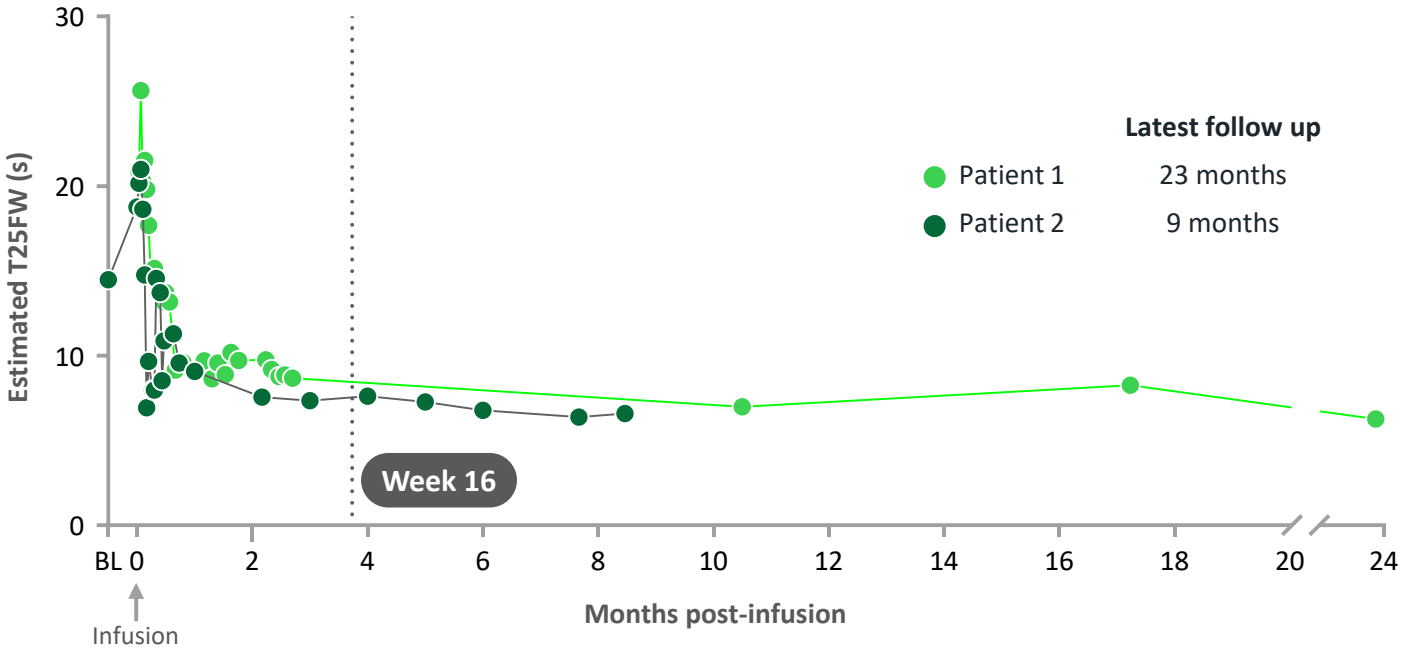
KYV-101 aims to set a new treatment standard in SPS with a potentially first FDA-approved therapy, addressing a significant unmet need for this patient population

1. SPS and MG 2025 Patient Journey and Demand Research. 2. Yi J, et al. *Neurol. Neuroimmunol. Neuroinflamm.* 2022;9(5):e200011. 3. Dalakas MC. *Neurol. Neuroimmunol. Neuroinflamm*. 2023;10(3):e200109. 4. Kapoor M, et al. *Neurology*. 2020;94(6):e635-e638. 5. Dalakas MC, et al. *Ann. Neurol*. 2017;82(2):271-277. 6. Pignolo A, et al. *J. Neurol*. 2025; 272(6):417. 7. Piquet A. 2025 SPSRF Annual Symposium. 8. Rituxan. Prescribing Information. Genentech; 2021.

KYV-101 in SPS: Longer Term Follow-Up Data Demonstrates Strong Clinical Activity and Potential for Deep and Durable Responses

Kyverna Experience at Therapeutic Dose in Initial 2 Compassionate Use Patients

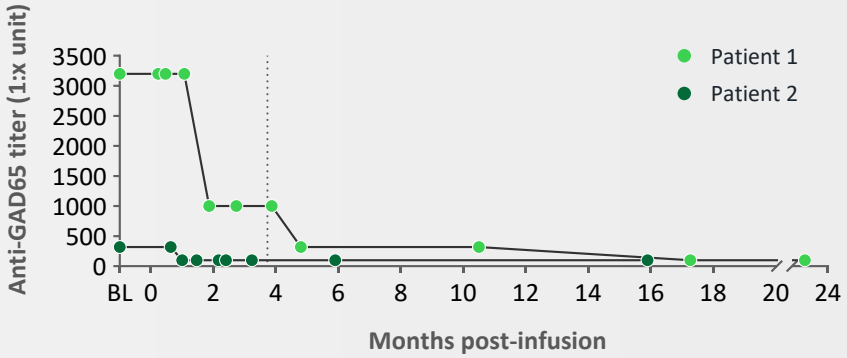
Improvement in Mobility



Drug-Free Remission: All Patients off Background Therapies*

No. of Immunosuppressant Therapies	Before KYV-101	After KYV-101
Patient 1 (anti-GAD65)	6	0
Patient 2 (anti-GAD65)	8	0

Reduction of Autoantibody Titers



Named-patient basis access data. Data cutoff August 19, 2025. KYV-101 therapeutic dose is 1×10^8 CAR T cells/µL. Baseline (BL) value is the most recent assessment prior to lymphodepletion.
*Data shown for immunosuppressant and immunomodulatory agents only; does not include physiologic replacement steroids ≤7.5 mg/day.

Focused Registrational Study Design Supports Rapid Path to Potential BLA Approval in SPS

KYSA-8: Open-label, single-arm, multicenter study

N = 25

- Age 18 to 75 years
- Diagnosis of SPS
- Inadequate response to immunomodulatory therapy
- Stiffness index ≥2

Cyc/Flu lymphodepletion
+
Single infusion of KYV-101
(1×10^8 CAR T cells)

Primary endpoints

- Change in T25-FW at 16 weeks
- Safety

Key secondary endpoints

- Modified Rankin Scale at 16 weeks
- Distribution of Stiffness Index at 16 weeks

Key exploratory endpoint

- Change in anti-GAD65 or anti-glycine R antibody titer

One-year Follow Up

Timed 25-foot walk test is a validated tool to assess walking ability. This test has been used to capture stiffness and loss of mobility in SPS[1,2]

Topline Data Expected 1H 2026

1. Newsome SD and Johnson T J. *Neuroimmunol*. 2022;369:577915; 2. Hobart J, et al. *Neurology*. 2013;80:1509-1517.

Rapid Clinical Progress Underscores the Significant Unmet Need in SPS and Kyverna's Ability to Execute

Recruited from 3 Centers of Excellence

Fully Enrolled in 7 Months

Topline Data and BLA Filing Anticipated 1H26

KYV-101: Potentially First-in-Class Therapy for SPS Patients with Clear Path to BLA

- **SPS is a progressive and highly debilitating disease with no FDA-approved therapies**
- **Longer-term follow-up data**[1] continues to demonstrate KYV-101's potential to **set a new treatment standard in SPS with first FDA-approved therapy**
- Supports FDA philosophy of developing **innovative therapies with high unmet need in rare diseases**
- FDA-aligned registrational study **on track for data readout and BLA submission in 1H26;** aim to see **clinically meaningful improvement in T25FW (>25%)**
- **Strong engagement** and support from treating physicians

Positioned to be the FIRST to unlock the promise of CAR T-cell therapy for autoimmune diseases, paving the way for rapid expansion into additional indications

1. Named-patient basis access data.

kyverna®

MG Overview

Dr. Aiden Haghikia, M.D.

M.D., Hanover Medical School

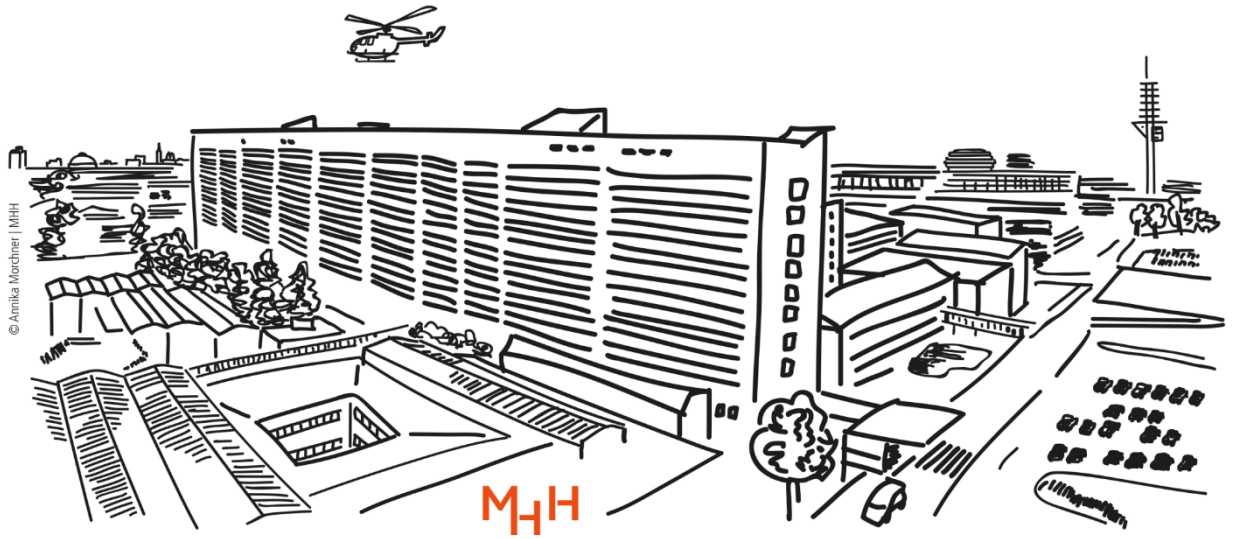
Sri Muppidi, M.D.

Stanford Medicine

Naji Gehchan, M.D., MSc, MBA

Chief Medical & Development Officer

Transformative Outcomes with KYV-101 in MG



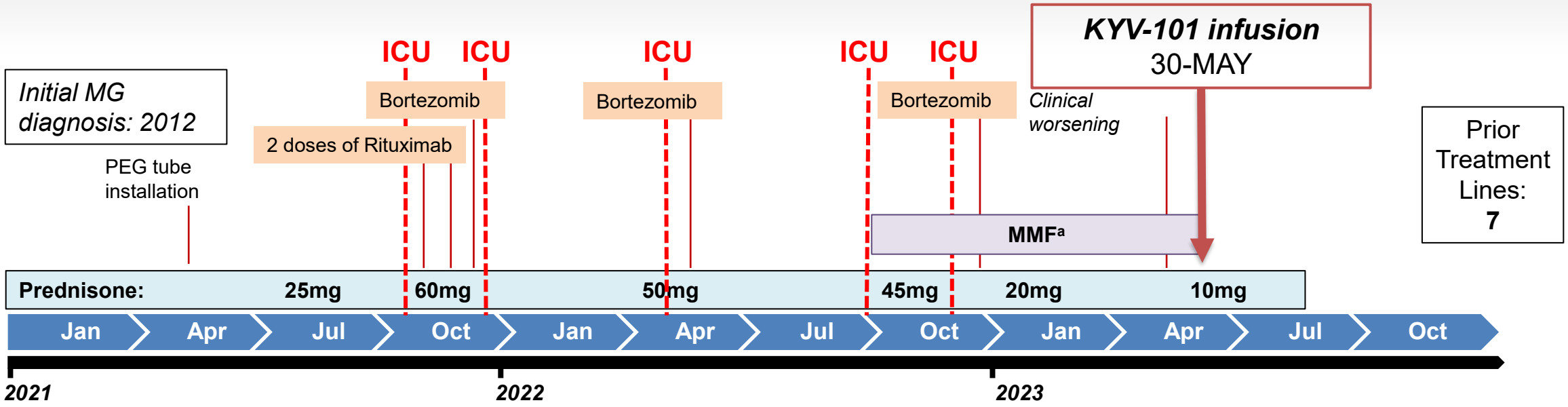
Aiden Haghikia, M.D.
Professor and Chair
Department of Neurology and Clinical Neurophysiology
Medizinische Hochschule Hannover (MHH)

Severe, Refractory Anti-AChR Seropositive MG Patient

Patient 1

33 year-old mother of 4, disability pension, initial MG diagnosis 2012

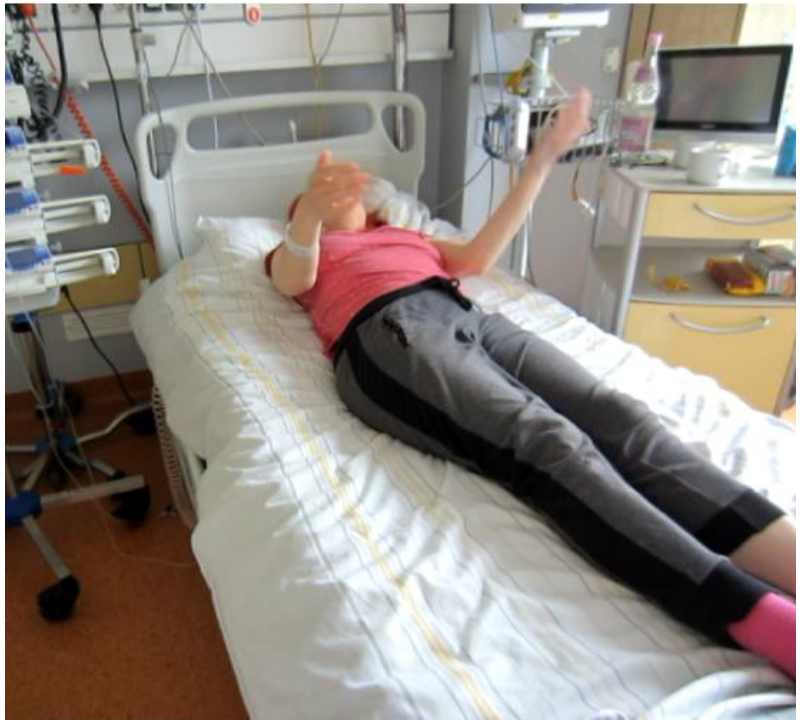
- **Five myasthenic crises in the last two years, requiring ICU care and tracheostomy**
- Refractory to rituximab, bortezomib
- Chronic treatment with MMF and steroids
- May 2023: rising clinical score (need to use a walker); rising AChR titers
- moved to consider CD19 CAR T “healing attempt”



[a]MMF interrupted briefly for apheresis.
MG, myasthenia gravis; PEG, percutaneous endoscopic gastrostomy; ICU, intensive care unit; MMF, mycophenolate mofetil; AChR, acetylcholine-receptor.
Named-patient basis access data.

Denise's CAR T Journey

Pre CAR T-Cell Therapy



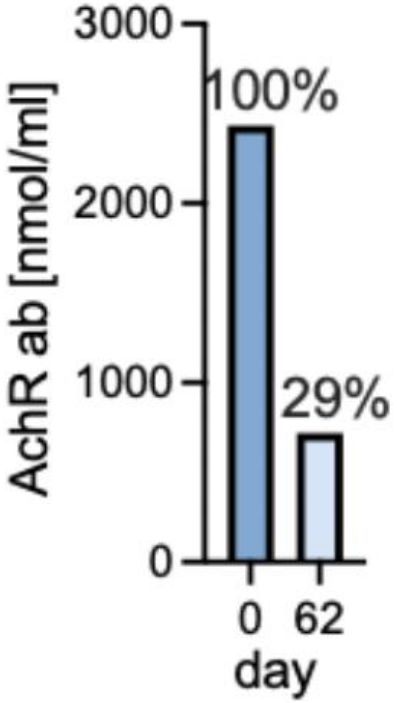
6 Days Post CAR T-Cell Therapy

13 Days Post CAR T-Cell Therapy

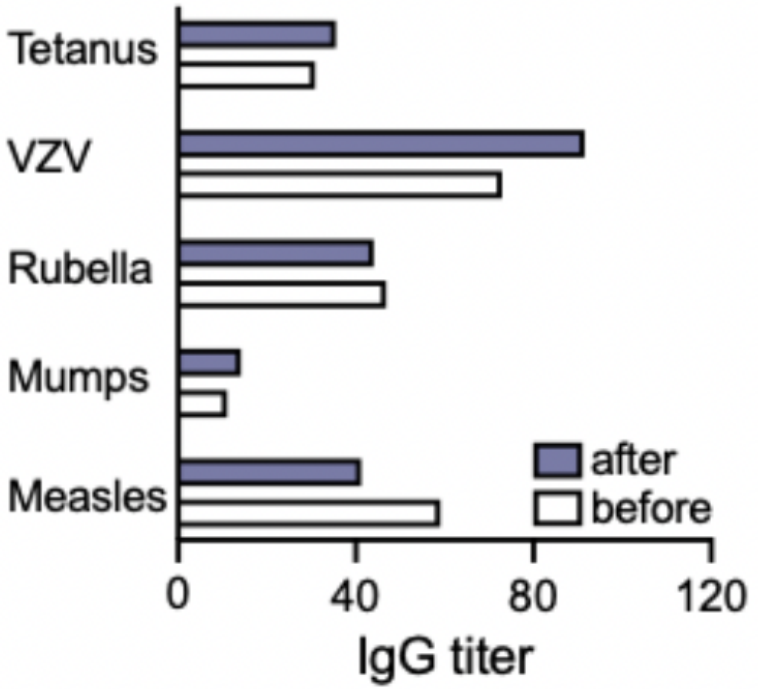
Reduction of Autoantibodies with Preservation of Humoral Immunity

Patient 1

Reduction of pathogenic autoantibodies



Maintenance of humoral protection

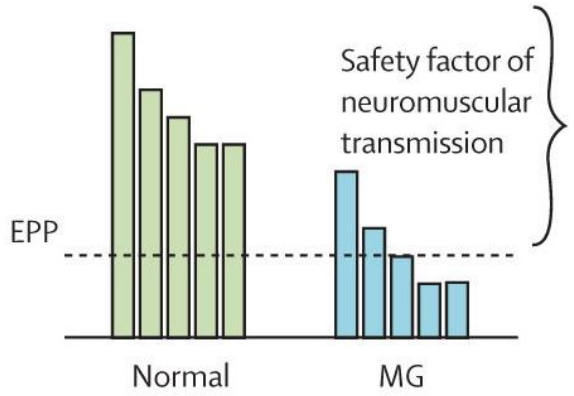


ab, antibody; AChR, acetylcholine receptor; IgG, immunoglobulin G; VZV, varicella zoster virus.

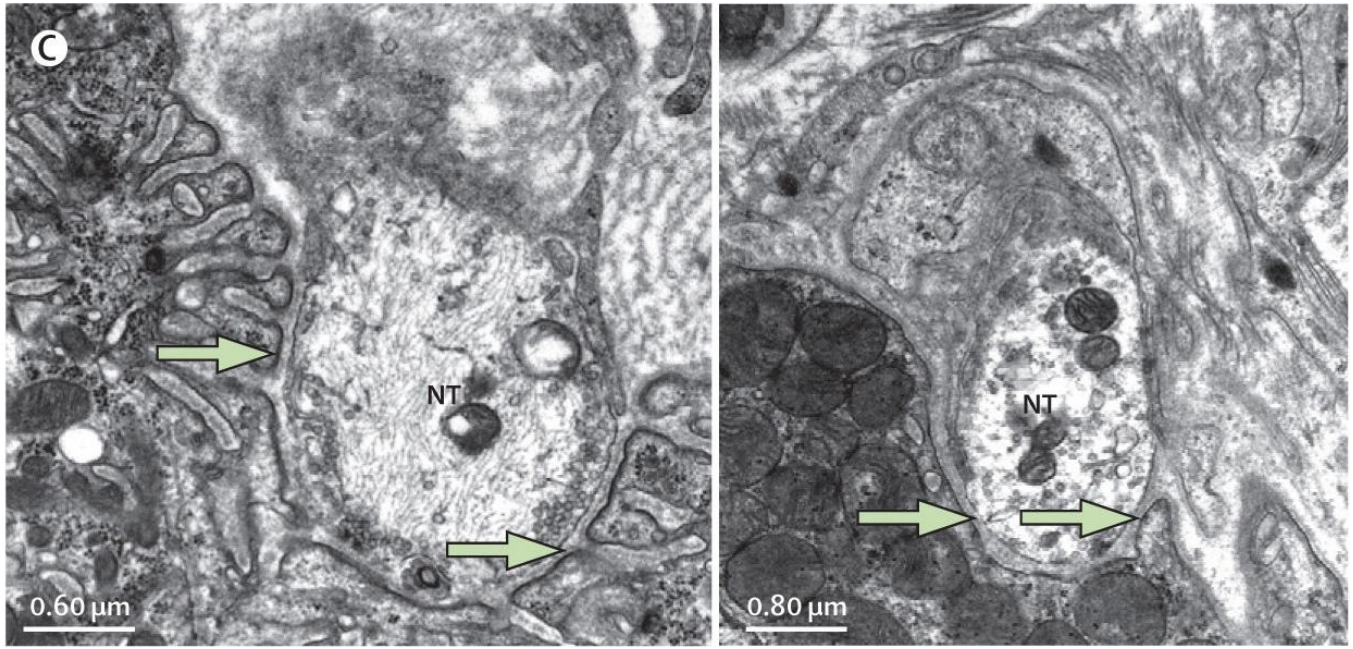
Haghikia A, et al. *Lancet Neurol*. 2023; 22: 1104–05.

Reduction in Nerve Signaling to Muscles in MG

Complement-mediated degeneration of the neuromuscular junction



Reduced nerve signaling during repetitive stimulation



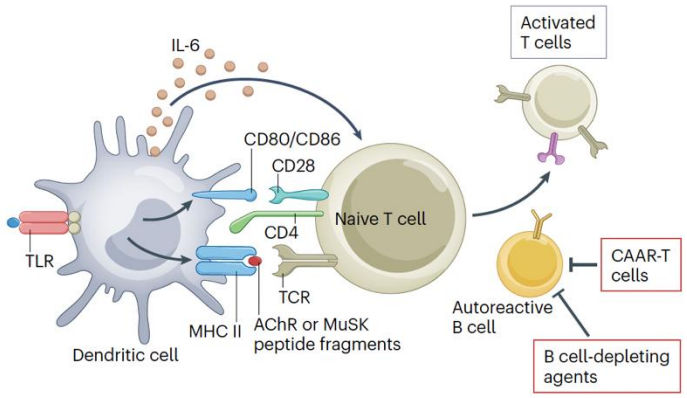
Normal MG

Meriggiolo, *Lancet Neurol*. 2009

Immune Pathways and Therapeutic Approaches in MG

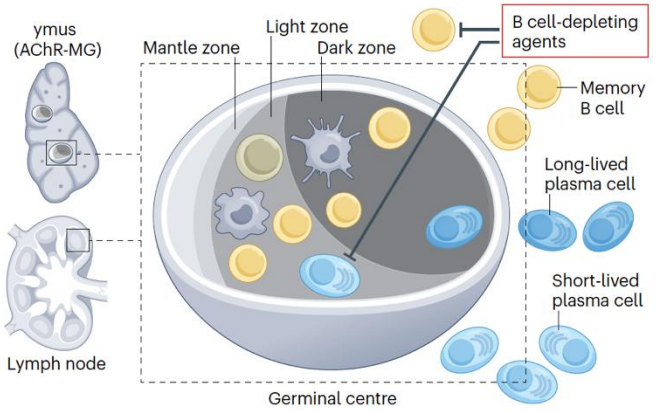
1

Initiation of the autoimmunity by antigen-presenting cells



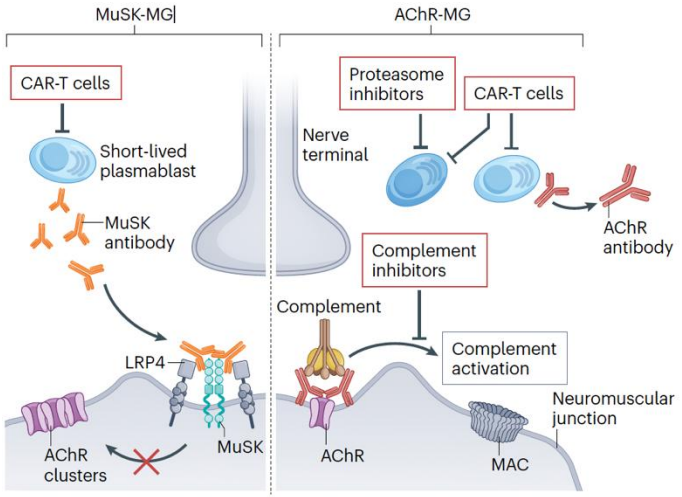
2

Autoantibodies produced by pathogenic B cells



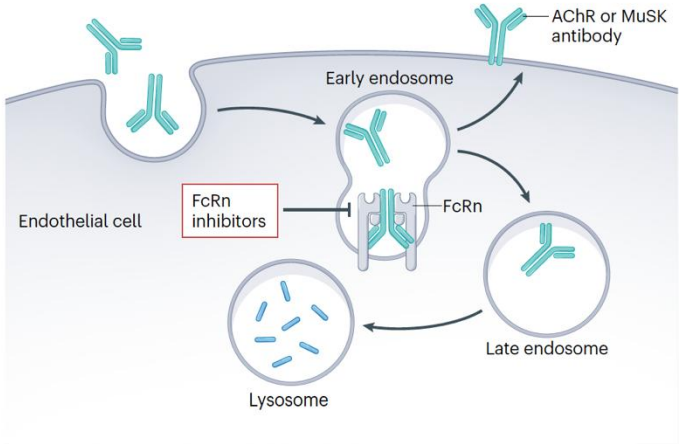
3

Nerve signals to muscles blocked by autoantibodies



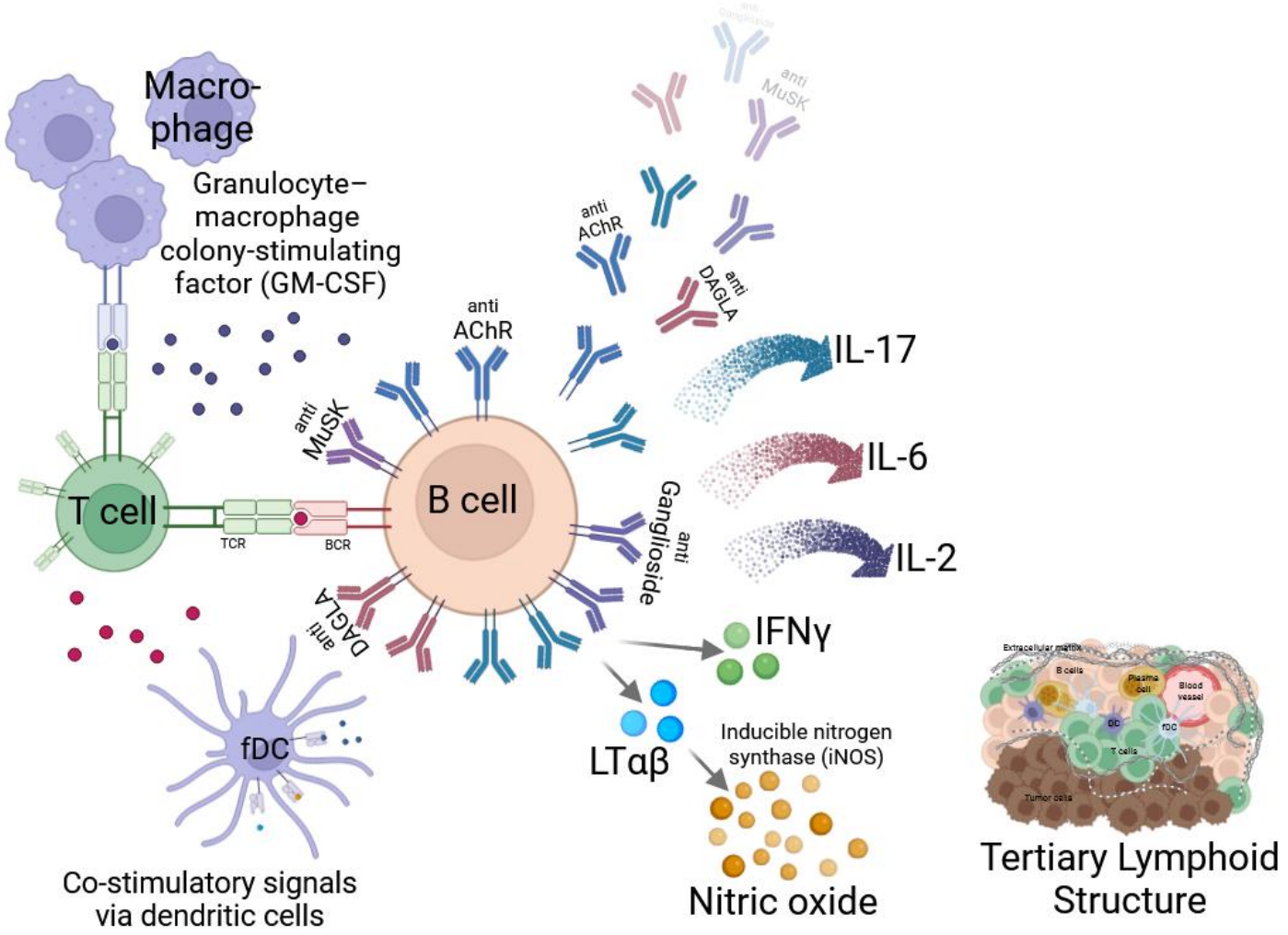
4

Autoantibody recycling



Iorio, *Nat. Rev. Neurol. 2024*

Antibody-Independent Mechanisms of B Cells in MG



KYV-101 CD19 CAR T-Cell Therapy in Generalized MG

Patient	Diagnosis	Disease Duration	Age	Disease Description	Prior Lines of Treatment	CD20 Failure
1	Seropositive MG	11 years	33 years	5 myasthenic crises in 2 years requiring ICU care and tracheostomy	7	✓
2	Seropositive MG	1 year	75 years	Rapid onset of severe disease; inability to swallow; PEG feeding tube due to aspiration pneumonia	2	✓
3	Seropositive MG	10 years	36 years	Exhausted available therapies	5	✓

ICU, intensive care unit; MG, myasthenia gravis; PEG, percutaneous endoscopic gastrostomy.

KYV-101 CD19 CAR T-Cell Therapy in Generalized MG - Efficacy

Patient	Diagnosis	Disease Duration	Age	MG-ADL		QMG		Follow-up Duration
				Baseline	Follow up	Baseline	Follow up	
1	Seropositive MG	11 years	33 years	7	0	15	2	24 months
2	Seropositive MG	1 year	75 years	3	0	7	2	22 months
3	Seropositive MG	10 years	36 years	7	0	18	0	15 months

MG, myasthenia gravis; MG-ADL, MG activities of daily living; QMG, quantitative myasthenia gravis.

KYV-101 CD19 CAR T-Cell Therapy in Generalized MG - Safety

Patient	Diagnosis	Disease Duration	Age	CRS Grade (1-4)	ICANS Grade (1-4)
1	Seropositive MG	11 years	33 years	None	None
2	Seropositive MG	1 year	75 years	2	None
3	Seropositive MG	10 years	36 years	None	None

CRS, cytokine release syndrome; ICANS, immune effector cell-associated neurotoxicity syndrome; MG, myasthenia gravis.

MG Treatment Landscape: Opportunity for CAR T-Cell Therapies

Sri Muppidi, M.D.

Stanford Medicine

Disclosures

Advisory Board Meetings:

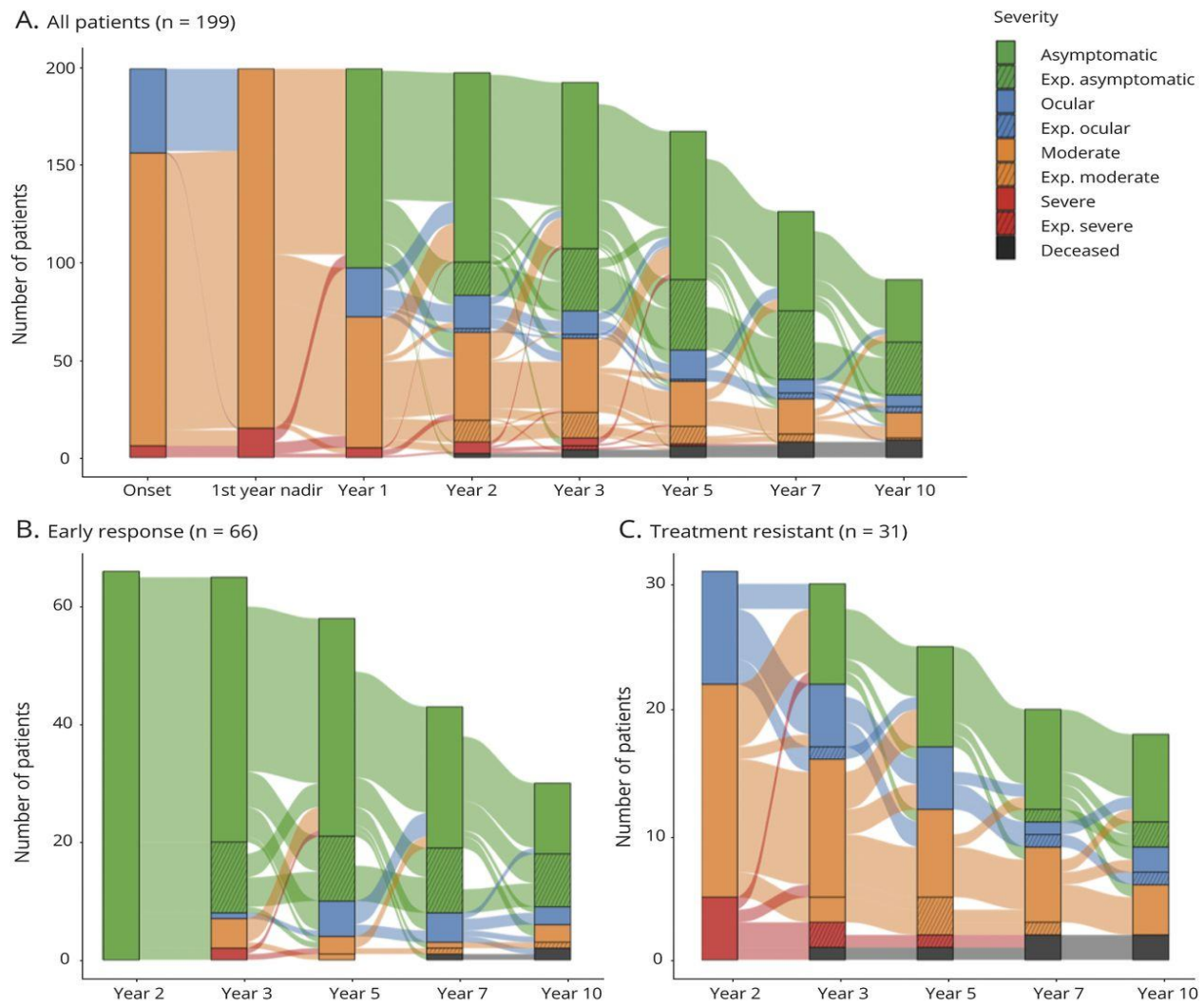
- Alexion Pharma
- Argenx Pharma
- UCB Pharma
- Amgen Pharma
- J & J Pharma
- Kyverna Therapeutics
- Arcellx Pharma

DSMB committee:

- Dianthus Pharma

- I will discuss some therapeutics in pipeline that are not FDA approved.

MG Disease Severity Over 10 Years



- 19% remained symptomatic after 2 years
- Remained treatment resistant

Matthias Tomschik et al. Neurology 2020;95:e1426-e1436

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MG-Activities of Daily living (MG-ADL)

- MG-ADL – To measure the impact of MG severity on Patient's activity level
- Currently the primary outcome measure in many MG studies
- Validated outcome measure
- A 2-point improvement is considered clinically significant

Grade	0	1	2	3
1. Talking	Normal	Intermittent slurring of nasal speech	Constant slurring or nasal, but can be understood	Difficult to understand speech
2. Chewing	Normal	Fatigue with solid food	Fatigue with soft food	Gastric tube
3. Swallowing	Normal	Rare episode of choking	Frequent choking, necessitating changes in diet	Gastric tube
4. Breathing	Normal	Shortness of breath with exertion	Shortness of breath at rest	Ventilator dependence
5. Impairment of ability to brush teeth or comb hair	None	Extra effort, but no rest periods needed	Rest periods needed	Cannot do one of these functions
6. Impairment of ability to arise from a chair	None	Mild, sometimes uses arms	Moderate, always uses arms	Severe, requires assistance
7. Double vision	None	Occurs, but not daily	Daily, but not constant	Constant
8. Eyelid droop	None	Occurs, but not daily	Daily, but not constant	Constant
				Total MG-ADL score (range, 0-24)

Muppidi S, et al. *Muscle Nerve*. 2011:727-731. Wolfe G, et al. *Neurology*. 1999;52:1487-1487.

Quantitative MG (QMG) Scale

- QMG requirements
  - Spirometer
  - Hand-held Dynamometer
  - Training
- Item distribution
  - 2 ocular items
  - 3 facial/pharyngeal items
  - 8 non-facial items
- QMG takes 30 minutes to compete

Test Item	None	Mild	Moderate	Severe
Grade	0	1	2	3
Double Vision on lateral gaze or left (circle one), seconds	>60	11-60	1-10	Spontaneous
Ptosis (upward gaze), seconds	>60	11-60	1-10	Spontaneous
Facial muscles	Normal lid closure	Complete, weak, some resistance	Complete, without resistance	Incomplete
Swallowing 4 oz water (1/2 cup)	Normal	Minimal coughing or throat clearing	Severe coughing/choking or nasal regurgitation	Cannot swallow (test not attempted)
Speech after counting aloud from 1 to 50 (onset of dysarthria)	None at 50	Dysarthria at 30-49	Dysarthria at 10-29	Dysarthria at 9
Right arm outstretched (90 degrees sitting), seconds	240	90-239	10-89	0-9
Left arm outstretched (90 degrees sitting), seconds	240	90-239	10-89	0-9
Vital capacity, % predicted	≥ 80	65-79	50-64	< 50
Right hand grip, kgW Men Women	 ≥ 45 ≥ 30	 15-44 10-29	 5-14 5-9	 0-4 0-4
Left hand grip, kgW Men Women	 ≥ 35 ≥ 25	 15-34 10-24	 5-14 5-9	 0-4 0-4
Head lifted (45 degrees supine), seconds	120	30-119	1-29	0
Right leg outstretched (45 degrees supine), seconds	100	31-99	1-30	0
Left leg outstretched (45 degrees supine), seconds	100	31-99	1-30	0
				Total QMG score (range, 0-39)

Wolfe G, et al. *Neurology*. 1999;52:1487-1487.

MG Composite (MGC) Scale

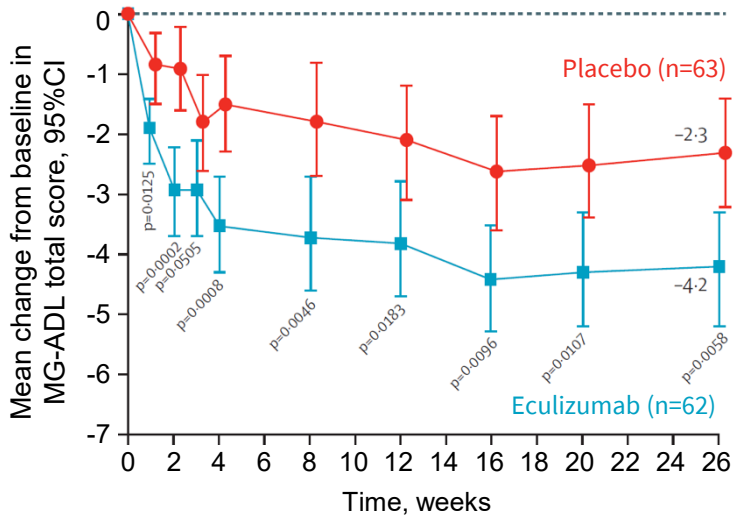
- Mixed outcome measure
- Developed from components from MG-ADL, MMT and QMG
- 10 items, 6 physician-evaluated and 4 patient reported
- ***Weighted scores***
- Range from 0-50

Test Item	None	Mild	Moderate	Severe
Ptosis, upward gaze (physician examination)	> 45 seconds = 0	11-45 seconds = 1	1-10 seconds = 2	Immediate = 3
Double vision on lateral gaze, left or right (physician examination)	> 45 seconds = 0	11-45 seconds = 1	1-10 seconds = 3	Immediate =4
Eye closure (physician examination)	Normal = 0	Mild weakness (can be forced open with effort) = 0	Moderate weakness (can be forced open easily) = 1	Severe weakness (unable to keep eyes closed) = 2
Talking (patient history)	Normal = 0	Intermittent slurring or nasal speech = 2	Constant slurring or nasal but can be understood = 4	Difficult to understand speech = 6
Chewing (patient history)	Normal = 0	Fatigue with solid food = 2	Fatigue with soft food = 4	Gastric tube = 6
Swallowing (patient history)	Normal = 0	Rare episode of choking or trouble swallowing = 2	Frequent trouble swallowing, eg, necessitating changes in diet = 5	Gastric tube = 6
Breathing (thought to be caused by MG)	Normal = 0	Shortness of breath with exertion = 2	Shortness of breath = 4	Ventilator dependence = 9
Neck flexion or extension (weakest) (physician examination)	Normal =0	Mild weakness = 1	Moderate weakness (ie, - 50% weak, ± 15%) = 3	Severe weakness = 4
Shoulder abduction (physician examination)	Normal = 0	Mild weakness = 2	Moderate weakness (ie, - 50%, ± 15 %) = 4	Severe weakness = 5
Hip flexion (physician examination)	Normal = 0	Mild weakness = 2	Moderate weakness (ie, - 50%, ± 15 %) = 4	Severe weakness = 5
				Total MGC score (range, 0-50)

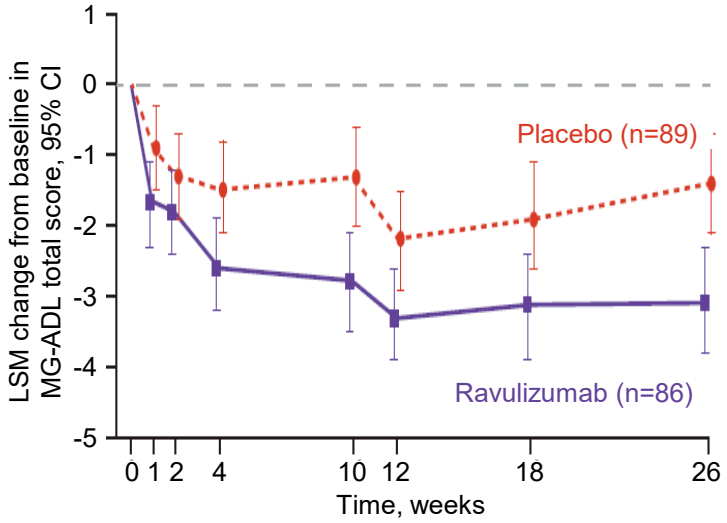
Burns T. *Muscle Nerve.* 2010;42:5-13. Burns TM, et al. *Neurology*. 2010;74:1434-1440.

Complement Inhibitors Improve MG-ADL; However, Ongoing Treatment Is Needed

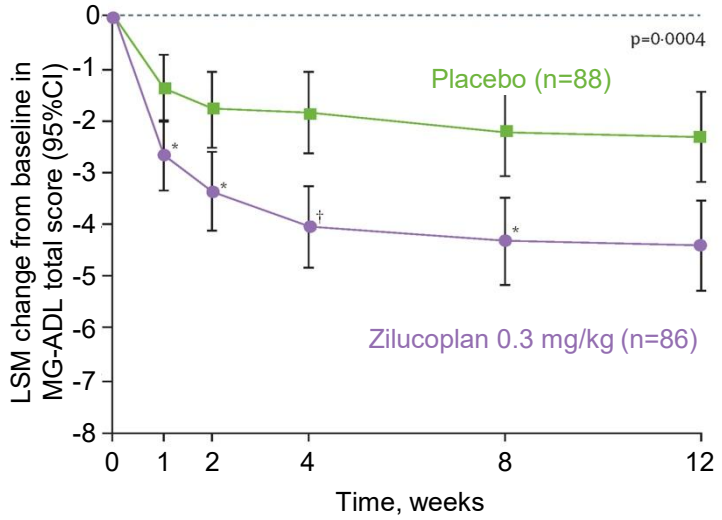
Eculizumab[1]



Ravulizumab[2]



Zilucoplan[3]



	Eculizumab[1]	Ravulizumab[2]	Zilucoplan[3]
Patient population	Refractory MG	Refractory MG not required	Refractory MG not required
Antibody status	AChR positive	AChR positive	AChR positive
Dosing regimen	IV every 2 weeks	IV every 8 weeks	SC daily

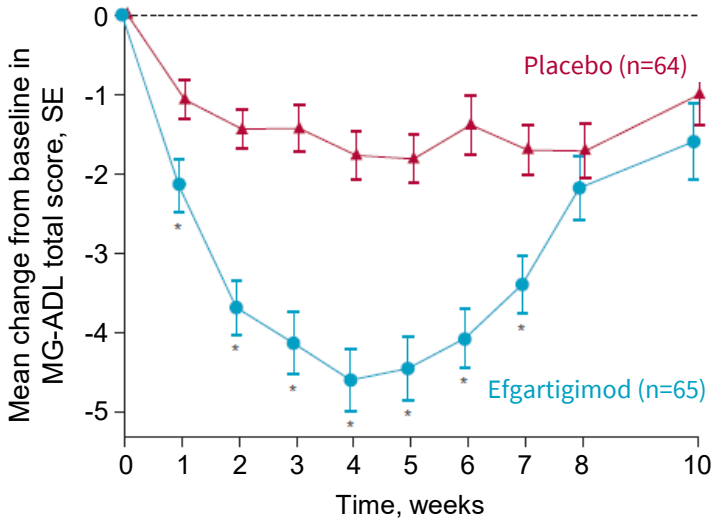
LSM, least squares mean.

1. Howard J, et al. *Lancet Neurol.* 2017;16(12):976-986.
2. Vu T et al. *NEJM Evid*. 2022;1:EVIDoa2100066.
3. Howard J, et al. *Lancet Neurol.* 2023;22(5):395-406.

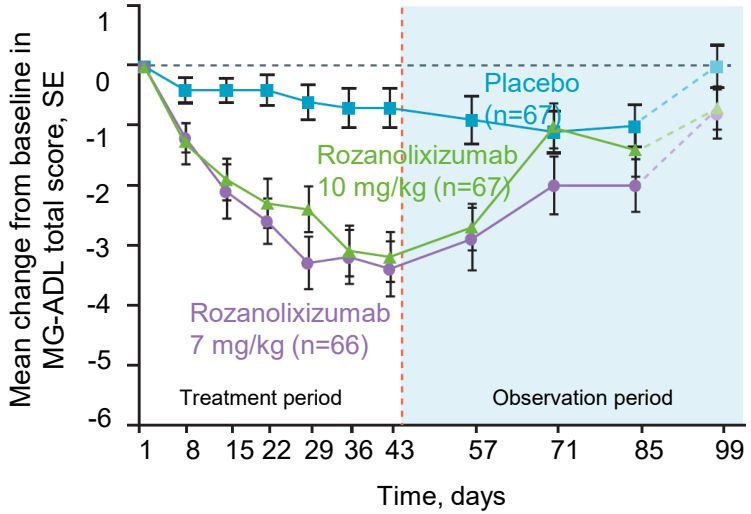
Stanford University

FcRn Inhibitors Rapidly and Transiently Decrease MG-ADL but Repeat Cycles Needed

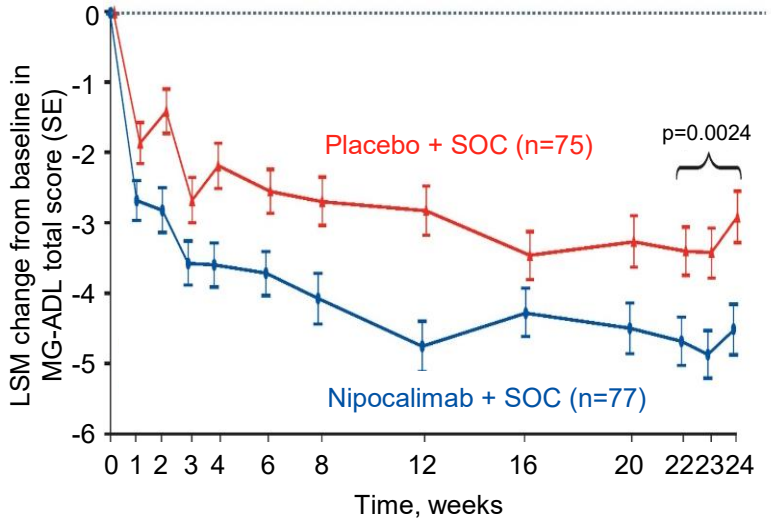
Efgartigimod[1]



Rozanolixizumab[2]



Nipocalimab[3]



Patient population	Refractory MG not required	Refractory MG not required	Refractory MG not required
Antibody status	AChR positive	AChR positive, MuSK positive	Antibody positive not required
Dosing regimen	IV weekly for 4 weeks given in cycles	SC weekly for 6 weeks, given in cycles	IV every 2 weeks

LSM, least squares mean.

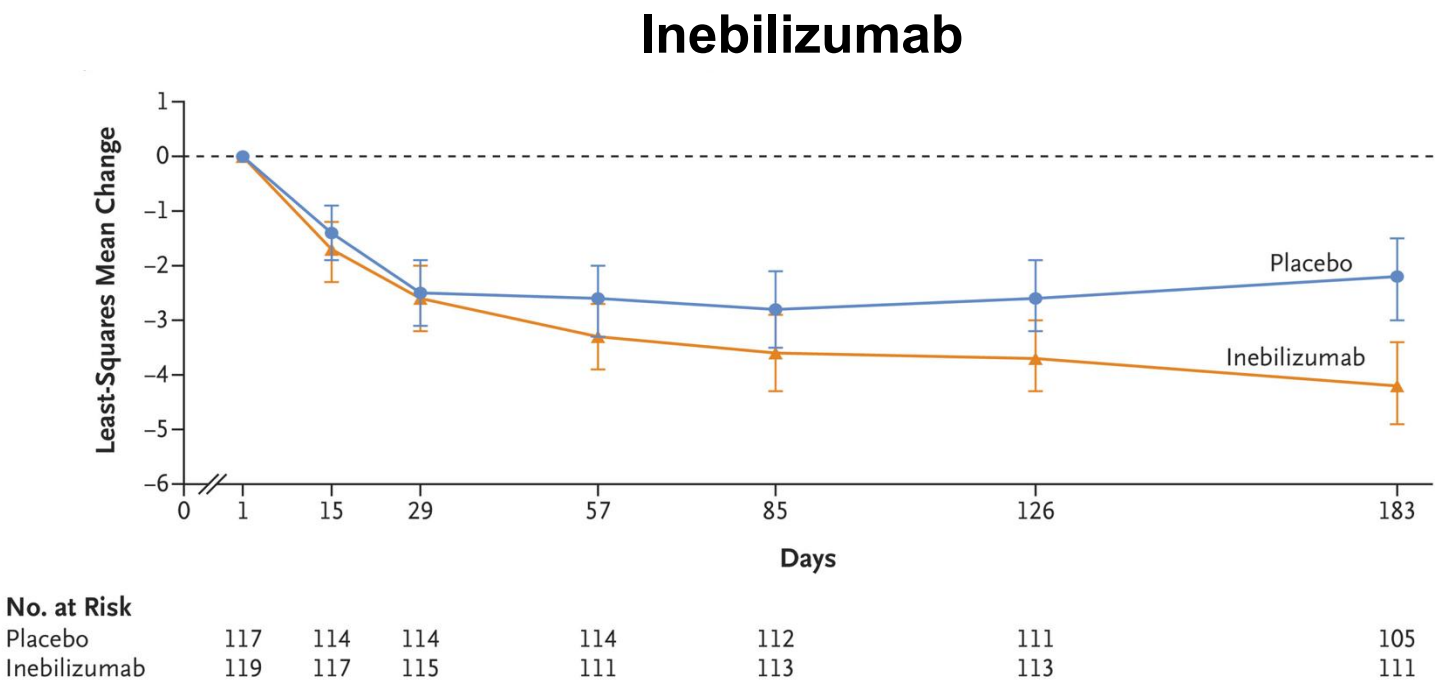
1. Howard J, et al. *Lancet Neurol.* 2021;20(7):526-536.
2. Bril V, et al. *Lancet Neurology.* 2023;22;383-394.
3. Antozzi C, et al. *Lancet Neurol.* 2025;24:105-116.

Stanford University

Complement and FcRn Inhibitors

- Predominantly approved for AChR+ve MG patients
- Increases the likelihood of achieving minimal symptom state
- Likely helps reduce prednisone doses
- **Expensive therapies**
- **Living with underlying disease; requires ongoing treatments**
  - ***Continuous therapy***
  - ***Ongoing background therapies***

Upstream Targeting with CD19 Monoclonal Antibody Improves MG-ADL but Does not Eliminate Symptoms

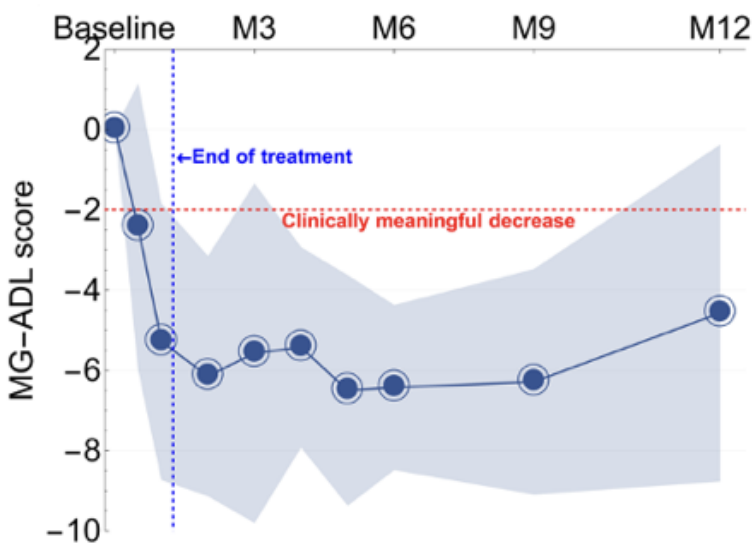


- Investigational CD19 monoclonal antibody
- Infusions every 6 months
- Reduction in prednisone dose

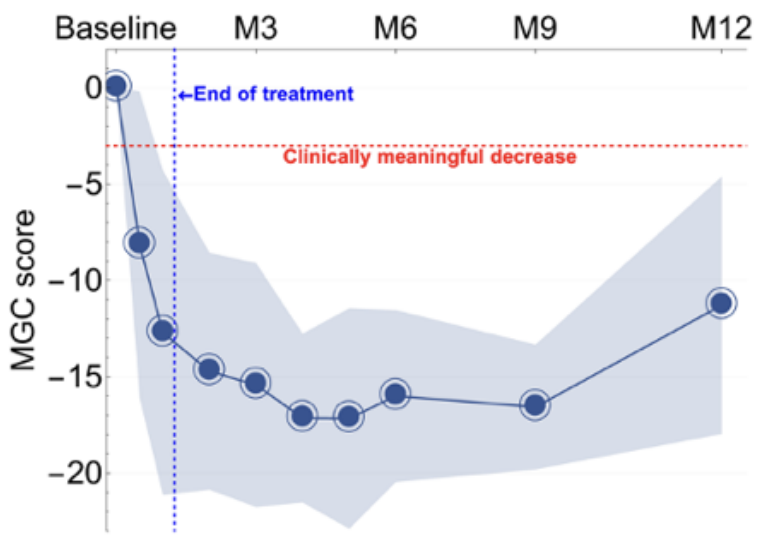
- Overall, B cell directed monoclonal antibodies have not resulted in dramatic outcomes
- A superior B cell suppression is needed

Nowak RJ, et al. *N Engl J Med.* 2025;392:2309-2320.

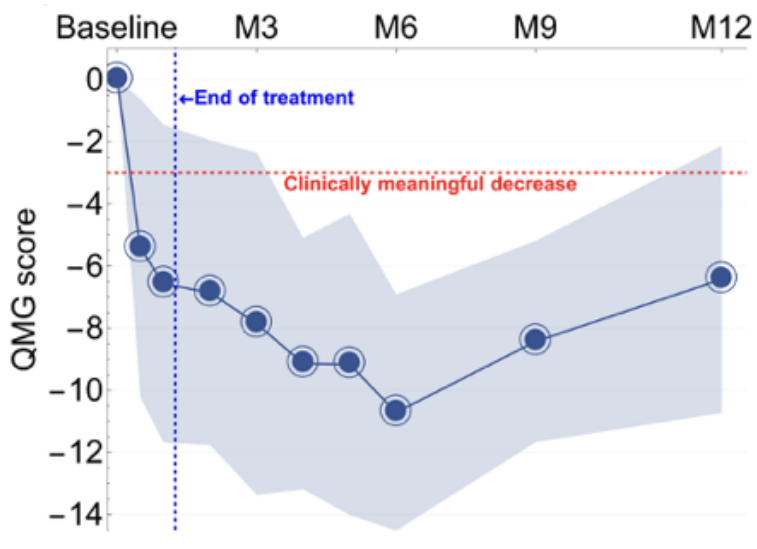
Transient Transduction with Investigational mRNA CAR T-Cell Therapy Targeting BCMA



MG-ADL



MG Composite



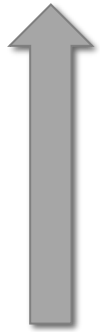
QMG

Chahin N, et al. *Ann Clin Transl Neurol.* 2025; Aug.

Stanford University

My Current Approach to MG Care

	Generalized MG			
Treatment Options	AChR positive MG			MuSK MG
	Mild	Moderate	Severe	
1st line	PYD, Pred, Oral IS	PYD, Pred, FcRn therapies	PYD, FcRn therapies, Pred	B cell therapy (Rituximab)
2nd line+	FcRn therapies	Oral IS	Oral IS	Pred, FcRn therapies, Oral IS
	-	Complement inhibitors	Complement inhibitors	



CAR T Potential

PYD: Pyridostigmine. Pred: Prednisone. Oral IS: Mycophenolate, Azathioprine, Tacrolimus, Methotrexate
Note: No currently FDA approved CD19 drug
Thymectomy: Offered to AChR patients (<55 years).

CAR T-Cell Therapies Can Be Paradigm Shift in MG Care

- There are a number of newer MG therapies already available; however, all newer therapies require continued treatment
- MG-ADL and MSE capture symptom control and improvement at a point in time but do not account for intermittent worsening and disease fluctuations
- Treatments are needed with durable effects that can alleviate treatment burden and holistically improve quality of life beyond just symptom improvement
- CAR T-cell therapy will need to be safe with prolonged (at least 1 year) period
- Safety both short term and long term would be critical

Changing the Treatment Paradigm in MG

Naji Gehchan, M.D., MSc, MBA

Chief Medical & Development Officer

Changing the Treatment Paradigm in MG with KYV-101

Goals of KYV-101

- **Drug-free, disease-free remission** with **single dose**
- **Elimination** of background therapies
- Improve **quality of life**

KYV-101 for MG: Upstream Targeting at the Disease Source

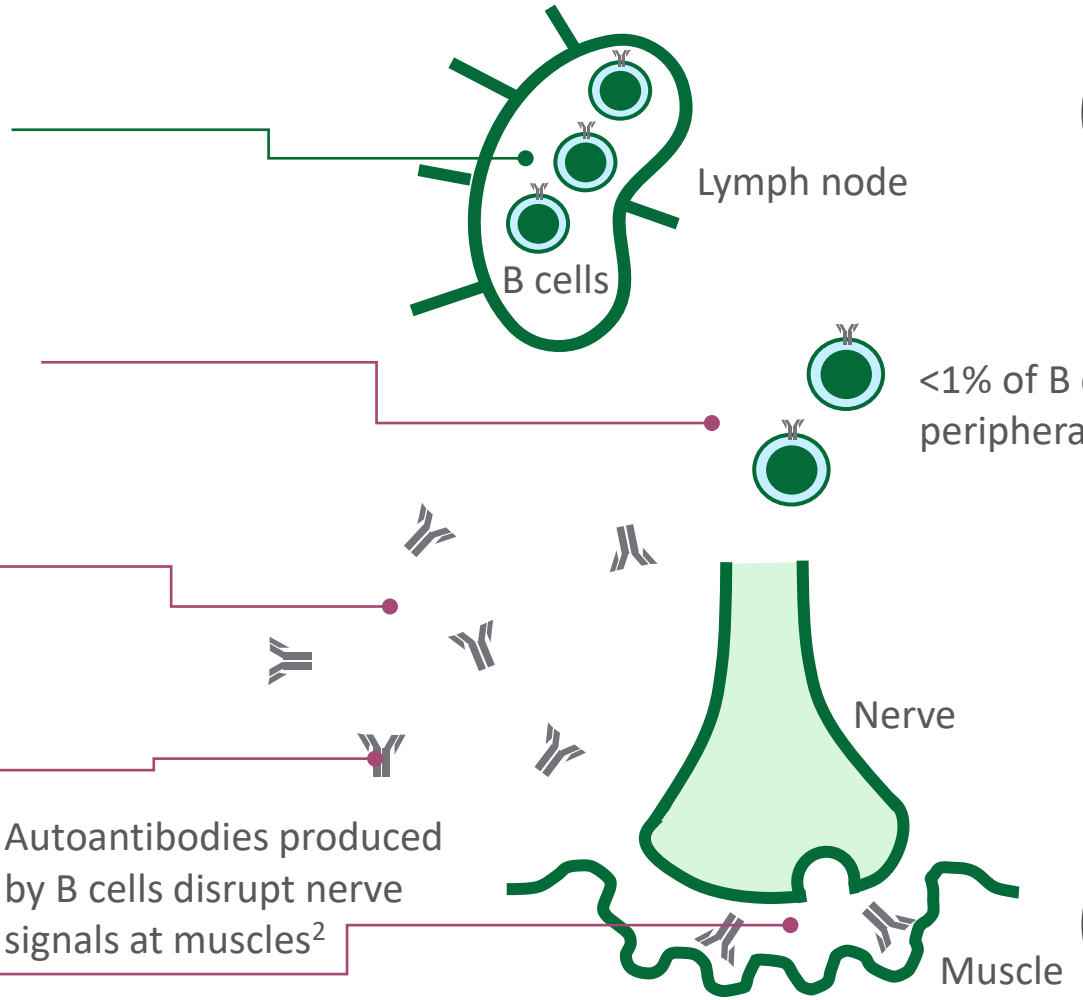
KYV-101 deeply depletes B cells including in tissues[1]

B-cell targeting mAbs cannot fully penetrate tissues and primarily target peripheral blood B cells[1]

FcRn inhibitors transiently reduce autoantibody accumulation[2]

Complement inhibitors transiently inhibit autoantibody immune activity[2]

Acetylcholinesterase inhibitors increase concentration of nerve signaling molecules[3]



Disease Source in Lymphoid Tissues

Upstream

Downstream

Disease Symptoms at Muscles

1. Tur C, et al. *Ann Rheum Dis*. 2025;84(1):106-114. 2. DeHart-McCoyle M, et al. *BMJ Med*. 2023;2(1):E241. 3. Myasthenia Gravis. NIH – NINDS. https://www.ninds.nih.gov/health-information/disorders/myasthenia-gravis.
4 Sender R, et al. *Proc. Natl. Acad. Sci. U.S.A.* 2023;120 (44) e2308511120.

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Current Generalized MG Treatment Landscape Before KYV-101

Generalized Myasthenia Gravis[2,3]

Treatment Naïve Options

~50% of patients[2]

- Immunosuppressive therapies (ISTs; e.g., steroids, mycophenolate mofetil, azathioprine)
- ±Acetylcholinesterase inhibitors (AChR+ only)
- Rituximab + ISTs (MuSK+ only)
- Consider Thymectomy (AChR+ only)

Refractory Treatment Options

~50% of patients[2]

- Immunosuppressive therapies
- ±Acetylcholinesterase inhibitors (AChR+ only)
- FcRn inhibitors + ISTs
- Complement inhibitors + ISTs ± AChEi
- + IVIg
- + Rituximab

Biologic therapy options

Approved | Off Label | Surgical

Treatment landscape represents most common sequencing.

1. Rodrigues E, et al. *Muscle Nerve*. 2024;69(2):166-171. 2. 2024 Clarivate DRG Report.
3. 2025 Patient Journey and Demand Research (data on file).

Leading Approved and Investigational Therapies in MG Have High Administration Burden, Requiring Frequent and Chronic Dosing

Summary of Dosing Schedules in gMG

		Year 1	Year 2	Year 3	Total Doses
Approved	**FcRn Inhibitor**[1,2] VYVGART®	4 weekly doses and 4 weeks off†			72
Approved	**Complement Inhibitor**[3] ULTOMIRIS®	First doses 2 weeks apart	Maintenance dose every 8 weeks		19
Investigational*	**CD19 mAb**[4] UPLIZNA®	First doses 2 weeks apart	Maintenance dose every 6 months		8
Investigational*	**BCMA mRNA CAR T**[5-7] Descartes-08	6 Doses	43% of patients return to baseline and re-dosed‡		6-12

*Under investigation in MG. †Vyvgart allows for flexible cycles; however, real-world evidence published data supports a modal gap between cycles of 4 weeks, particularly in chronic Vyvgart patients. ‡43% of patients (3/7) return to baseline symptom burden and are re-dosed in the Ph2a trial.

1. Howard Jr JF, et al. *Lancet Neurol*. 2021;20(7):526-536. 2. Bhavaraju-Sanka R, et al. MGFA Session at AAN 2024. MG9. 3. Vu T, et al. *NEJM Evid*. 2022;1(5):EVIDoa2100066. 4. Nowak RJ, et al. *N Engl J Med*. 2025;392(23):2309-2320. 5. Vu T, et al. AAN 2025. S34.002. 6. Brunn C. HHC. Wainwright Investor Conference Fireside Chat 20 May 2025. 7. Cartesian. August 2025 Corporate Presentation. https://ir.cartesiantherapeutics.com.

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They Also Leave Patients with Residual Disease Burden and Require Chronic Background Therapy

		Approved		Investigational*	
		FcRn Inhibitor[1] *VYVGART®*	**Complement Inhibitor[2,3]** *ULTOMIRIS®*	**CD19 mAb[4,5]** *UPLIZNA®*	**BCMA mRNA CAR T[6]** *Descartes-08*
Primary Endpoint		4 weeks	6 months	6 months	3 months
Depth of Response *Mean reduction from baseline to primary endpoint (non-placebo adjusted)*	**MG-ADL Reduction**	~4.6	3.1	4.2	~4.2
	QMG Reduction	~6.2	2.8	4.8	~3.9
Inadequate Response *Patients with <3-point MG-ADL improvement from baseline to primary endpoint (non-placebo adjusted)*		~27%	~43%	~21%	~30%
Achieve Minimal Symptom Expression (MSE) *% of patients achieving MG-ADL of 0 or 1*		40% *At any point before primary endpoint*	43%	Not reported	33% *6 months to 1 year*

Significant portion of gMG patients still have high unmet need and lack durable response

*Under investigation in MG.

1. Howard Jr JF, et al. *Lancet Neurol*. 2021;20(7):526-536. 2. Vu T, et al. *NEJM Evid*. 2022;1(5):EVIDoa2100066. 3. AstraZeneca. ULTOMIRIS® efficacy data from CHAMPION-MG. https://ultomirishcp.com/gmg/efficacy. Accessed 20 Aug 2025. 4. Nowak RJ, et al. *N Engl J Med.* 2025;392(23):2309-2320. 5. Nowak RJ, et al. AAN 2025. LS2.002. 6. Vu T, et al. AAN 2025. S34.002.

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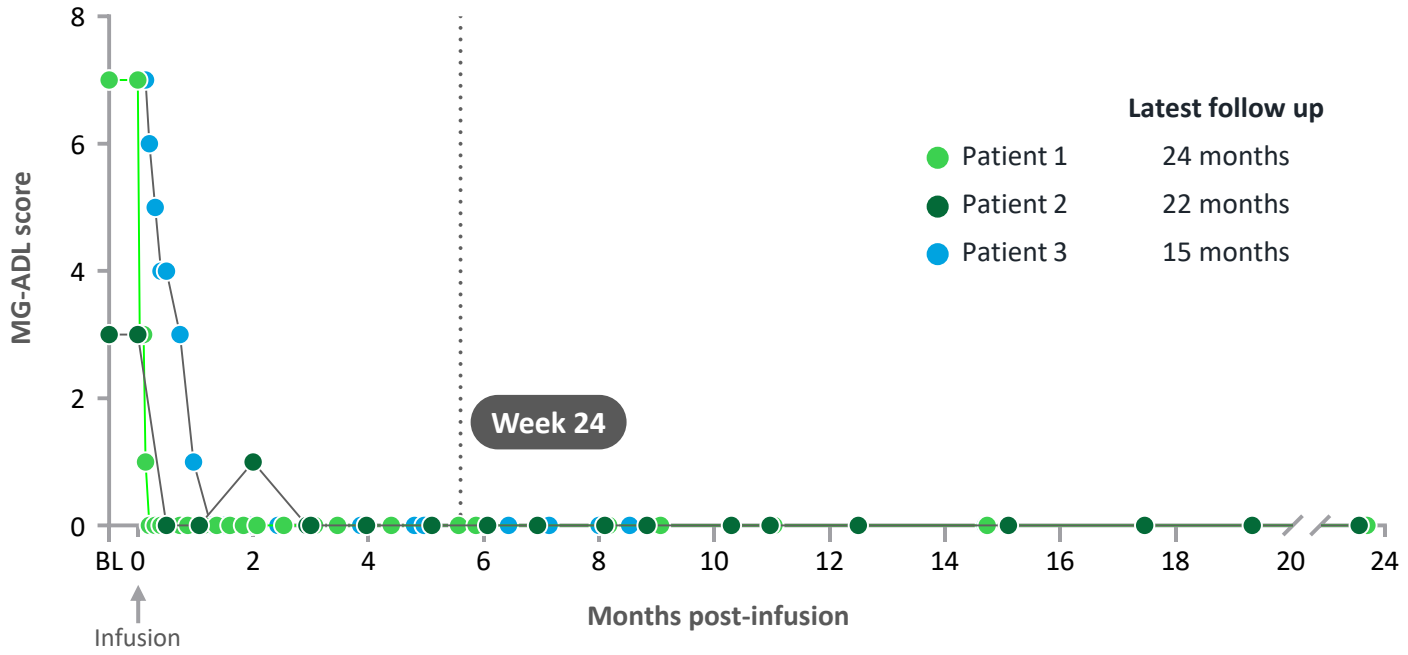
KYV-101 in MG: Longer-term Follow-up Data Demonstrate Durable Drug-Free, Disease-Free Remission with Single Dose

Kyverna Experience at Therapeutic Dose in Initial 3 Compassionate Use Patients

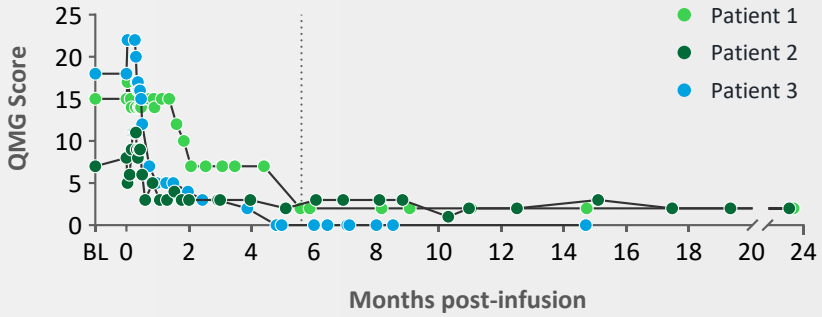
Disease-Free Remission:
All Patients Reached MG-ADL 0, Ongoing for 15+ Months



Drug-Free Remission:
All Patients off MG Background Therapies*

No. of Immunosuppressant Therapies	Before KYV-101	After KYV-101
Patient 1	6	0
Patient 2	6	0
Patient 3	5	0

Reduction of QMG



Named-patient basis access data. Data cutoff August 19, 2025. KYV-101 therapeutic dose is 1×10^8 CAR T cells/µL. Baseline (BL) value is the most recent assessment prior to lymphodepletion. Latest follow-up for Patient 1 is 24 months per narrative update from treating physician.
*Data shown for immunosuppressant and immunomodulatory agents only; does not include physiologic replacement steroids ≤7.5 mg/day.

Goal for Interim Phase 2 Data: Demonstrate Positive Trend Towards Durable, Drug-Free, Disease-Free Remission with KYV-101

Trends we aim to see in patients with longer follow-up period:

- **Meaningful reduction in MG-ADL and QMG**
- **Setting a new standard in MSE**
- **Elimination of background therapy**
- **Manageable and predictable safety profile**

Anticipated Interim Phase 2 Data Set: Topline efficacy and safety data for 6 patients with up to 9 months of follow up

*Named-patient basis access data.

Registrational MG Trial Is Designed to Highlight KYV-101's Differentiated Clinical Profile While Supporting Rapid Path to BLA

Innovative, FDA-Aligned Trial

Expanding KYSA-6 Phase 2 trial into randomized Phase 2/3 trial, providing rapid path to BLA

Efficient and Robust Design

Randomized, superiority trial with prospective control and crossover, reflecting the potential substantial clinical effect size of KYV-101 in gMG

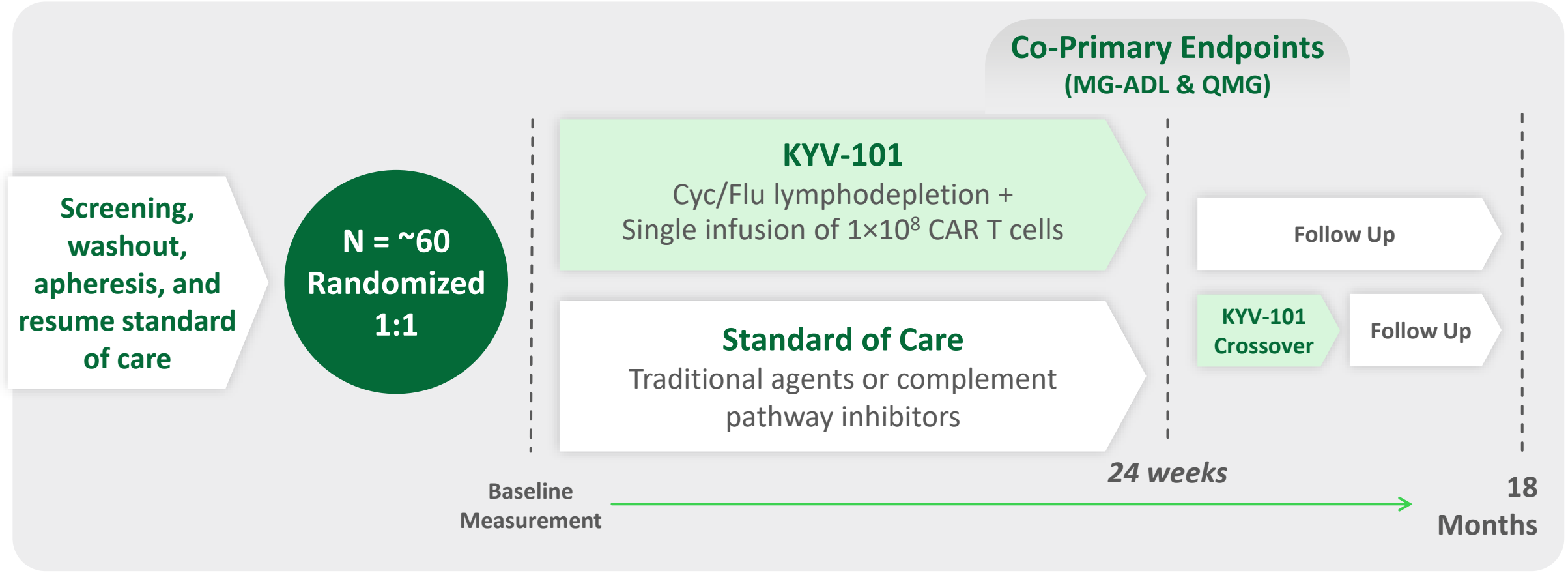
Differentiated to Show Durability

24-week endpoint measurement to demonstrate durable drug-free, disease-free potential

Patient Enrollment to Begin by Year-End 2025

Significant Effect Size Allows for Efficient KYV-101 Registrational Trial Design

~60-patient, global, open-label, randomized controlled Phase 2/3 trial with crossover design



Standard of care may consist of traditional agents (eg, prednisone, azathioprine, mycophenolate, methotrexate, chronic IVIG/PLEX) or complement pathway inhibitors (eg, eculizumab, ravulizumab). Anti-CD20 or -CD19 monoclonal antibodies or FcRn inhibitors not allowed as defined in inclusion criteria.

Key Criteria and Endpoints for KYV-101 Registrational Trial in MG

Key Inclusion Criteria

- Age 18 to 75 years
- Diagnosis of generalized MG, Class II-IV per MGFA criteria
- Autoantibodies to AChR or MuSK
- MG-ADL ≥6; QMG ≥11
- Failed ≥1 immunosuppressive therapy and required chronic plasmapheresis or chronic use of IVIG; or failed ≥2 prior immunosuppressive/ immunomodulatory therapies

Co-Primary Endpoints

- Change from baseline in MG-ADL and QMG score at 24 weeks compared to SOC

Secondary Endpoints

- MGC change from baseline at 24 weeks compared to SOC
- Proportion of patients with a ≥3 point improvement from baseline in MG-ADL at 24 week compared to SOC
- Proportion of patients with MSE at 24 weeks compared to SOC

Exploratory Endpoints

- Endpoints evaluating the durability of efficacy including change from baseline in MG-ADL, QMG, and MGC at weeks 52 and 78
- Use of immunosuppressant therapy over time

Changing the Treatment Paradigm in MG with KYV-101

- High unmet need; **suboptimal treatments with costly, chronic treatment options** and continued reliance on **background therapies**
- Longer-term follow-up data[1] reinforce KYV-101's potential to change the treatment paradigm in MG by delivering **durable, drug-free, disease-free remission with single dose**
- Interim Phase 2 data on track for Q4 2025; **aim to reinforce positive trends in efficacy and safety**
- **FDA-aligned registrational trial** to begin enrollment by year-end 2025; **design supports clear and rapid path to BLA**

Provide MG patients with durable drug-free, disease-free remission and improved quality of life

[1] Named-patient basis access data.

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Path to Commercializing our Neuroimmunology Franchise

Dan Maziasz, MBA

Chief Business Officer

Kyverna Is Uniquely Positioned to Launch and Commercialize KYV-101 as the First CAR T in Autoimmune

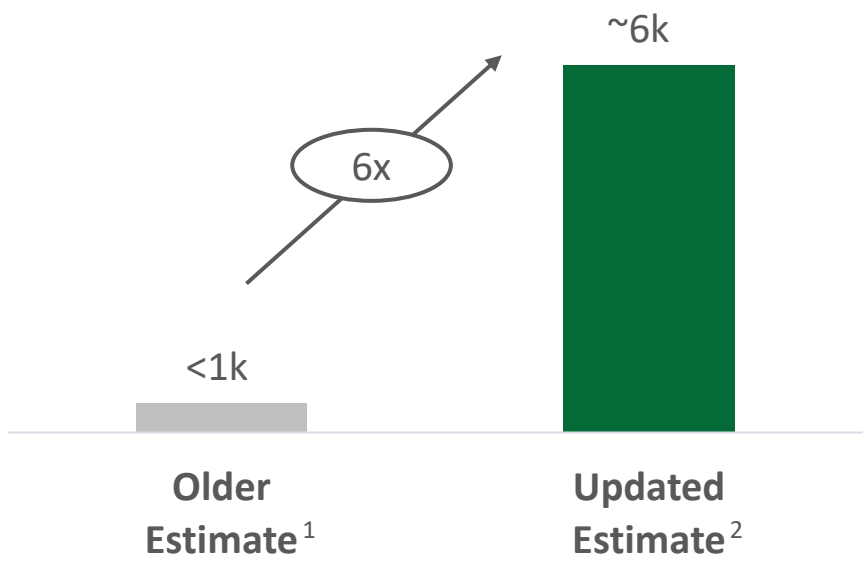
FIRST
to launch in autoimmune CAR-T field

FAST
uptake given unmet need and first mover advantage

EFFICIENT
commercial model given synergies across SPS and MG

Recent Epidemiology Study Indicates that U.S. SPS Patient Population Is Significantly Larger than Previously Reported

U.S. Diagnosed SPS Patients



SPS Market Overview

- Recent epi study from University of Colorado indicates that SPS affects 1.4 to 2.1 per 100,000 individuals[2]
  - Kyverna U.S. claims analysis confirms 1.8 per 100,000 individuals (i.e., ≥2 SPS ICD-10 codes over ≥30 days)[3]
- Previously reported figures based on 2018 analysis of US VA system do not reflect recent trends[1]
  - Historically, SPS patients were significantly under and/or misdiagnosed[4]
  - Awareness of disease and use of standard diagnostic testing is also increasing[4]

~6k diagnosed SPS patients in the U.S.

1. Galli JR, et al. *Muscle Nerve.* (2018) indicating 2.06 SPS cases per million in the US. 2. Crane PD, et al. *Neurology*. 2024;103(12):e210078. 3 Analysis of 2024 Komodo U.S. Claims Data.
4. Kyverna Patient Journey and Demand Study (data on file).

SPS is a Valuable Commercial Opportunity with Potential for KYV-101 to Quickly Set a New Treatment Standard as First Approved Therapy

~6k

U.S. Diagnosed SPS Patients[1,2]

KYV-101 Addressable Market[2,3]

Initial Priority

~2.0 to 2.5k Patients

30-40% of total diagnosed

Patients treated with off-label immunotherapy*

Total KYV-101 Addressable Market

~5.5k Patients

90% of total diagnosed

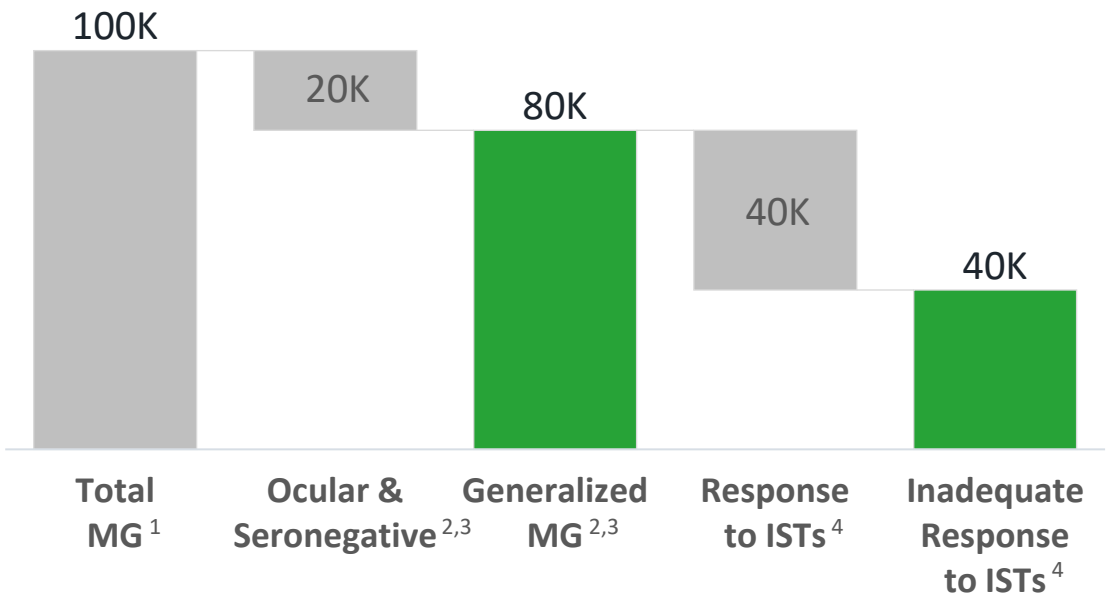
Patients treated with symptomatic therapies

*Immunotherapy defined as off-label immunosuppressants (e.g., prednisone), rituximab and/or IVIg.

1. Crane PD, et al. *Neurology*. 2024;103(12):e210078. 2. Analysis of 2024 Komodo U.S. Claims Data. 3. Kyverna Patient Journey and Demand Study (data on file).

U.S. MG Market is Significant and Continues to Grow Driven by Increasing Awareness and Adoption of New Therapies

U.S. Diagnosed MG Patients



MG Market Overview

- ~100K total diagnosed U.S. patients[1]
  - ~80% with seropositive generalized MG[2,3]
  - Robust prevalence growth in MG[1,5]
  - ~50% of patients have an inadequate response to immunosuppressants and are considered for biologic[4]
- MG physicians and patients have historically quickly adopted new therapies[4,6]
- Utilization of FcRn blockers and complement inhibitors continues to increase[4,6]

~80K diagnosed generalized MG patients in the U.S.

1. Rodriguez E, et al. *Muscle. Nerve*. 2024;69(2):166-171. 2. Hendricks TM, et al. *Am J Opthamol*. 2019; 205:99-105. 3. Li Y, et al. *Ann. Transl. Med*. 2019; 11(7):290. 4.Clarivate DRG Report outlining use of immunosuppresants (2024). 5. Salari, et al. *J. Transl. Med.* (2021); 19(1):516. 6. Kyverna Patient Journey and Demand Study (data on file).

KYV-101 Potential to Change the Treatment Paradigm in MG by Delivering Durable, Drug-free, Disease-free Remission with Single Dose

~80k

U.S. Diagnosed gMG Patients[1,2]

KYV-101

Addressable Market[1,3,4]

Initial Priority

~12k Patients

15% of total diagnosed

Patients with inadequate response to ≥ 1 biologic*

Total KYV-101 Addressable Market

~40k Patients

50% of total diagnosed

Patients with inadequate response to immunosuppressants

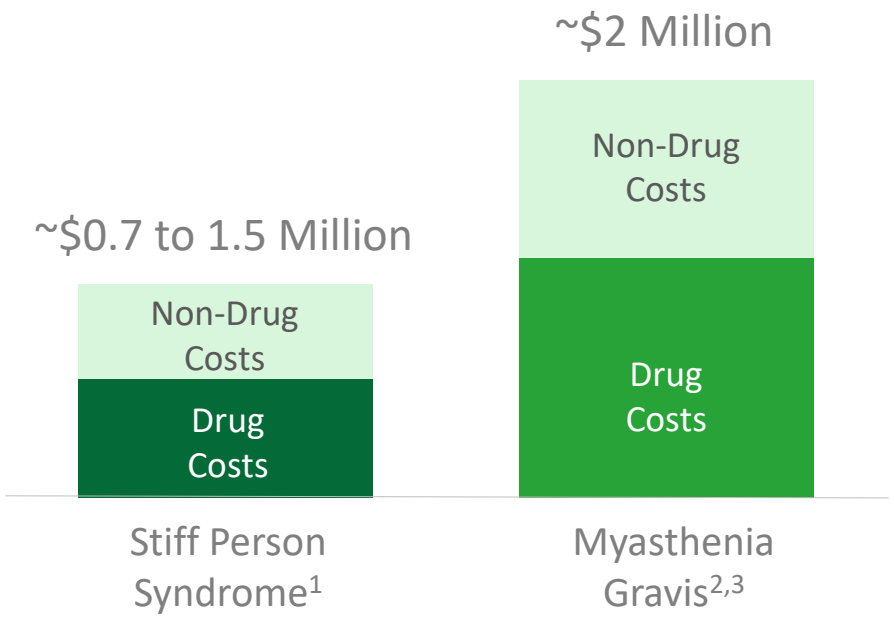
*Biologics defined as immunomodulatory therapies including FcRN blockers, complement inhibitors, rituximab or chronic IVIg use.

1. Rodriguez E, et al. *Muscle. Nerve*. 2024;69(2):166-171. 2. Hendricks TM, et al. *Am J Opthamol*. 2019; 205:99-105. 3. Clarivate DRG Report (2024). 4. Kyverna Patient Journey and Demand Study (data on file).

Current Treatment Options in SPS and MG Have High-Cost Burden and Suboptimal Patient Outcomes Creating an Opportunity for KYV-101

High-Cost Burden

Estimated 3-Year Total Cost per Patient*



Suboptimal Patient Outcomes[4,5]

- Residual symptoms and disease burden impacting patient quality of life
- High treatment burden from frequent, chronic therapy
- Many patients unable to function independently with impact on ability to work and drive
- Portion of patients have crisis events requiring hospital and/or ICU visits

*Non-drug costs include hospitalizations, ICU visits, multi-specialist management and other patient costs. Excludes unemployment and caregiver time burden. SPS Drug costs include IVIg and/or Rituximab plus background therapy. MG drug costs includes FcRN or Complements plus background therapy.

1. Merative 2025 HCRU Analysis of Commercial Chronic Immunotherapy SPS patients. 2. ICER Report on MG 2021. 3. Global Data Pricing database. 4. Rakocevic G, et al. *BMC Neurol.* 2019;19(1):1. 5. Dalakas MC. *Nat Rev Neurol.* 2024;20(10):587-601.

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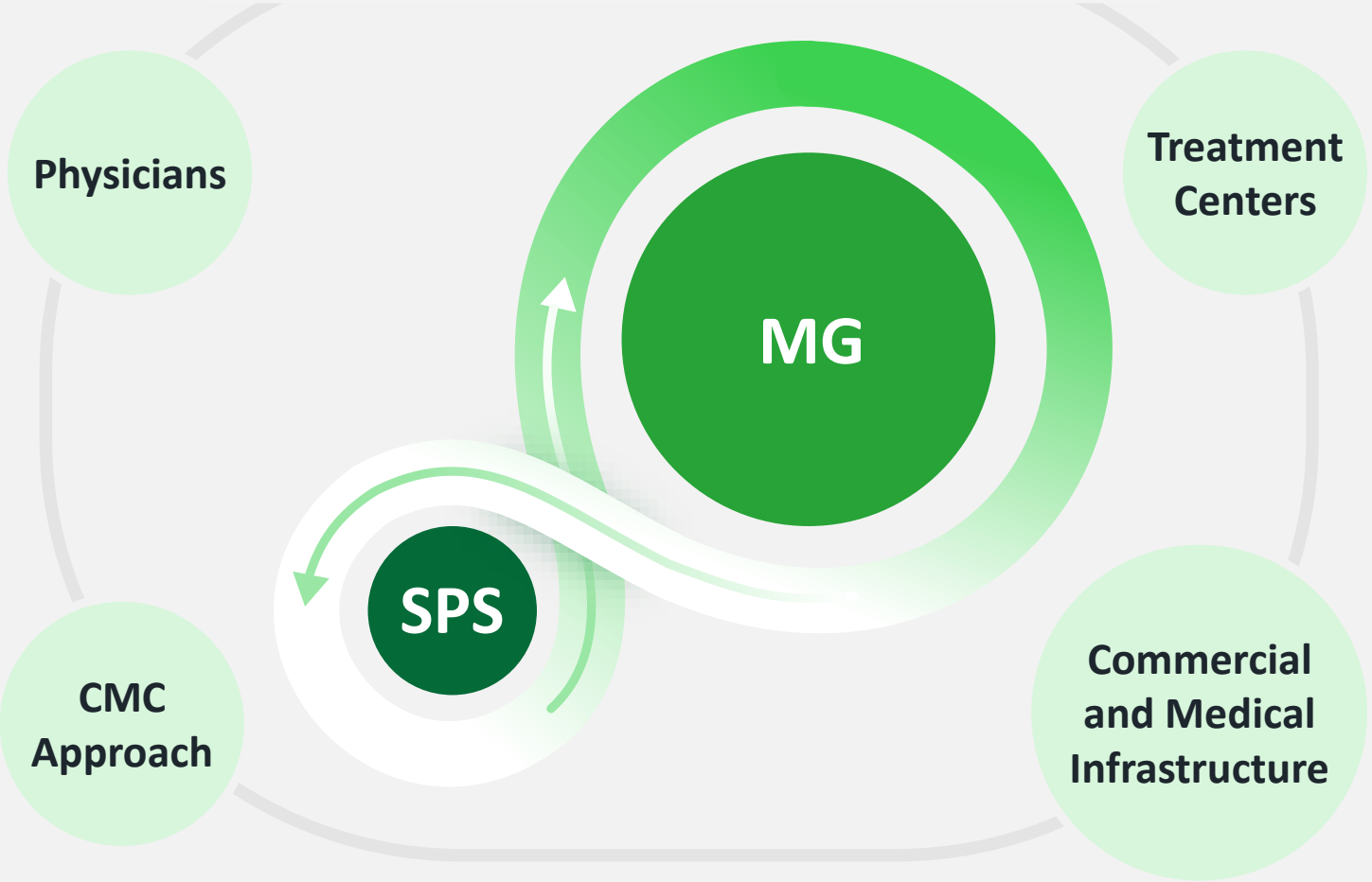
Commercial Strategy to Build an Efficient and Scalable Neuroimmunology Franchise Starting with SPS and Rapidly Expanding to MG

Leverage SPS to set the foundation for efficient CAR T market entry and scalable growth in MG

First Mover Advantage Allows Us To:

- ✓ Develop relationships with neurologists and hospital staff
- ✓ Activate commercial site network and establish processes with key autoimmune treatment centers
- ✓ Establish price with payers
- ✓ Build our end-to-end supply chain

Neuroimmunology Franchise Synergies



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SPS and MG Patients Are Concentrated at Key Academic Centers Enabling a Lean Commercial Model

Targeted U.S. Treatment Centers

- SPS and MG patients are typically treated by neurologists and same care teams at these academic centers
- Focus on building relationships and establishing network of key academic centers for SPS launch
  - High volume treaters
  - Existing referral networks
  - CAR-T accreditation/experience
- Prioritize additional site activations for MG, leveraging SPS framework
- Total of 50-75 centers across SPS and MG

Analysis of Komodo Claims Data, Kyverna Patient Journey and Demand Study.

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KYV-101 Is Set Up for Commercial Success Given Autologous CAR T Class Evolution and Differentiated Product Profile

CAR T foundation is established and translates to autoimmune

- **System capacity continues to increase** via new and existing authorized treatment centers (ATCs)
- **Improved patient access** based on trend to outpatient setting and FDA REMS update
- Established **commercial processes and reimbursement infrastructure** for CAR T-cell therapy

KYV-101

Commercial strategy leverages CAR T infrastructure and attributes unique to KYV-101

- Leverage growing capacity at ATCs
- Autologous model with single dose aligns with existing processes and reimbursement infrastructure
- Product profile conducive to outpatient treatment and monitoring (no high-grade CRS/ICANS across 100 patients)
- Ongoing Kyverna trials continue to generate enthusiasm and experience at academic and community centers/referring clinics

KYV-101: Attractive Commercial Opportunity in Neuroimmunology

- **Significant KYV-101 addressable market** in both SPS and MG
- **SPS:** Set a **new treatment standard as first FDA-approved therapy**
- **MG: Change the treatment paradigm** in large, growing market
- Opportunity for KYV-101 given **current treatment options have high cost-burden and suboptimal outcomes**
- Commercial strategy to **build efficient and scalable neuroimmunology franchise**; **first-mover advantage in SPS** will enable **rapid market entry and uptake in MG**
- CAR-T ecosystem has rapidly evolved **setting up a successful launch environment for KYV-101**

Uniquely positioned to be the FIRST to launch a CAR T-cell therapy for autoimmune diseases

Conclusion and Q&A

Warner Biddle

Chief Executive Officer

Key Takeaways from Today's Event

1. **Kyverna is uniquely positioned to fundamentally change the treatment paradigm in MG and SPS:**

   KYV-101 has demonstrated **durable, drug-free and disease-free remission** with a single dose

2. **Valuable commercial opportunity in SPS** given significant unmet need in a rare disease, laying the foundation for a **rapid and efficient launch in MG**, a large and growing market

3. **Innovative registrational Phase 3 trial design for KYV-101 in MG:**

   Aligned with FDA on approach that leverages KYV-101's differentiated clinical profile and **supports clear and rapid path to BLA**

Q&A

Warner Biddle
Chief Executive Officer

Sham Dholakia, M.D., Ph.D
Chief Product Officer

Naji Gehchan MD, MSc, MBA
Chief Medical
& Development Officer

Marc Grasso, M.D.
Chief Financial Officer

Dan Maziasz, MBA
Chief Business Officer

Ricardo Grieshaber-Bouyer, M.D., Ph.D
FAU Erlangen-Nümberg

Aiden Haghikia, M.D.
Hanover Medical School

Sri Muppidi, M.D.
Stanford Medicine

Liberating Autoimmune Patients Through the Curative Potential of CAR T-Cell Therapy

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- KYV-101 has potential to deliver durable, disease-free, drug-free remission with single dose
- First-in-class potential with neuroimmunology strategy
- Attractive market opportunity supported by focused commercial approach
- Strong cash position to support multiple near-term milestones
- Continue to advance future pipeline opportunities, including next-gen KYV-102 and additional indications

Appendix

KYV-101: Unique CAR Design Optimal for Autoimmune Diseases

Fully Human Design

Developed for POTENCY

- CD19 targeting eliminates broadest range of B-cell subsets while sparing long-lived plasma cells[1]
- CD28 costimulation is highly potent[1,2]
- Deep B-cell depletion in tissue and immune reset[3-5]

Engineered for SAFETY

- Fully human CAR design reduces immunogenicity[1,2]
- CD8α hinge and TM support reduced inflammatory cytokine production[1,2]
- No high-grade CRS or ICANS observed[3]

Delivering TRANSFORMATIVE CLINICAL OUTCOMES

- Single dose aiming for durable drug-free, disease-free remission
- Potential for outpatient administration

References: 1. Brudno JN, et al. Nat Med. 2020;26:270-280; 2. Alabanza L, et al. Mol Ther. 2017;25:2452-2465; 3. Data on File, Kyverna Therapeutics; 4. Trautmann-Gill K, et al. Lancet. 2025;405:25-28; 5. Albach FN, et al. Rheumatology. 2025; epub ahead of print.

KYV-102: Transforming the Next Generation of CAR T Patient Delivery

No Apheresis, No/Low Lymphodepletion, Reduces Costs, Improves Patient Access

KYV-101

- CD19 CAR optimal for autoimmune
- 8-9 day culture time
- Begins with apheresis

KYV-102

- Utilizes same CAR construct as KYV-101
- <3-day culture time
- Begins with whole blood – no need for apheresis

TARGETED BENEFITS

- Improve patient experience
- Unlock system capacity and accessibility
- Reduce manufacturing turnaround time and costs
- Increased scalability
- Proprietary process with filed patent families

File KYV-102 IND application Q4 2025

Reference: Anaya D, et al. bioRxiv. 2024;doi: https://doi.org/10.1101/2024.01.24.576713.

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KYSA-6 Phase 2 Study Design Foundational for Advancement Into Registrational Trial

KYSA-6: Open-label, single-arm, multicenter study

N = 6

- Age 18 to 75 years
- Diagnosis of gMG, Class IIB-IV per MGFA criteria
- Autoantibodies to AChR, MuSK, or LRP4
- MG-ADL ≥6
- Failed ≥2 prior immunomodulatory therapies

Cyc/Flu lymphodepletion

+

Single infusion of KYV-101 (1×10^8 CAR T cells)

Primary endpoints

- MG-ADL at 24 weeks
- Adverse events

Key secondary endpoints

- QMG and MGC scores
- Change in anti-AChR, anti-MuSK, or anti-LRP3 antibodies
- PK/PD

18-month follow up

Interim Phase 2 Data Expected Q4 2025

gMG: generalized myasthenia gravis; MGFA: Myasthenia Gravis Foundation of America; AchR: Acetylcholine Receptor; MuSK: Muscle-Specific Kinase; LRP4: Low-density lipoprotein receptor-related protein 4; MG-ADL: myasthenia gravis Activities of Daily Living; QMG: Quantitative Myasthenia Gravis; MGC: Myasthenia Gravis Composite

Abbreviations

ab, antibody	cMBc, class switched memory B cells
AChEi, acetylcholinesterase inhibitor	CMC, chemistry, manufacturing, and controls
AChR, acetylcholine receptor	CNS, central nervous system
AID, autoimmune disease	coDC, conventional lDC plasmacytoid dendritic cells
aMBc, atypical memory B cells	CRS, cytokine release syndrome
ATAC-seq, assay for transposase-accessible chromatin with sequencing	CTLA-4, cytotoxic T-lymphocyte antigen 4
ATC, authorized treatment center	CYC, cyclophosphamide
B mem, memory B cell	D, day
BCMA, b-cell maturation antigen	DC, dendritic cell
BCR, B-cell receptor	DPPX, dipeptidyl peptidase-like protein
BLA, biologics license application	dsDNA, double-stranded deoxyribonucleic acid
BnCS, double-negative 1 B cells	ER, emergency room
BnUS, unswitched naïve B cells	FACS, fluorescence-activated cell sorting
CAAR-t, chimeric autoantibody receptor T	FAPI, fibroblast activation protein inhibitor
CAR T, chimeric antigen receptor T-cell therapy	Fc, fragment crystallizable
CD, cluster of differentiation	FcRn, neonatal fragment crystallizable receptor

Abbreviations

FDA, US Food and Drug Administration	ICD-10, International Classification of Diseases, 10th Revision
fDC, follicular dendritic cell	ICU, healthy donor
FDR, false discovery rate	IDL, interstitial lung disease
Flu, fludarabine	IFN, interferon
FTD, Fast Track Designation	Ig, immunoglobulin
GABA, gamma aminobutyric acid	IGH, immunoglobulin heavy chain
GABA-RAP, gamma-aminobutyric acid receptor-associated protein	IIM, idiopathic inflammatory myopathy
GAD, glutamic acid decarboxylase	IL, interleukin
gadT, gamma delta T cells	IND; investigational new drug application
GLC, glucocorticoids	iNOS, inducible nitrogen synthase
GM-CSF, granulocyte macrophage-colony-stimulating factor	IST, immunosuppressive therapies (e.g., corticosteroids, mycophenolate mofetil, azathioprine)
gMG, generalized myasthenia gravis	IV, intravenous
H; half	IVIG, intravenous immunoglobulin
HCQ, hydroxychloroquine	LN, lupus nephritis
HD, healthy donor	LRP4, lipoprotein receptor protein 4
ICANS, immune effector cell-associated neurotoxicity syndrome	LSM, least squares means

Abbreviations

LTβ, lymphotoxin-β	MSE, minimal symptom expression
LTβR, lymphotoxin-β receptor	MTX, methotrexate
mAb, monoclonal antibody	MuSK, muscle-specific tyrosine kinase
Mbim, IgM+ IgD– memory B cells	Nkhi, CD56hi NK cells
MG, myasthenia gravis	Nklo, CD56low NK cells
MG-ADL, myasthenia gravis activities of daily living	NOTCH1, neurogenic locus notch homolog protein 1
MGC, myasthenia gravis composite	ODD, Orphan Drug Designation
MGFA, The Myasthenia Gravis Foundation of America	pBcs, plasmablasts
MHC, major histocompatibility complex	PBMC, peripheral blood mononuclear cell
MMF, mycophenolate mofetil	PD-L1, programmed cell death ligand 1
MMT, manual muscle testing	PEG, percutaneous endoscopic gastrostomy
MoCl, classical monocytes	PET-CT, positron emission tomography-computed tomography
MoIn, intermediate monocytes	PLEX, plasma exchange
MoNC, nonclassical monocytes	Q; quarter
mRNA, messenger RNA	QC, quality control
MS, multiple sclerosis	QMG, quantitative myasthenia gravis score

Abbreviations

RA, rheumatoid arthritis	T4nv, naïve CD4 T cells
REMS, risk evaluation and mitigation strategy	T4ra, CD45RA+ effector CD4 T cells
RMAT, Regenerative Medicine Advanced Therapy	T8cm, central memory CD8 T cells
RNA-seq, ribonucleic acid sequencing	T8em, effector memory CD8 T cells
RTX, rituximab	T8nv, naïve CD8 T cells
SC, subcutaneous	T8ra, CD45RA+ effector CD8 T cells
SLE, systemic lupus erythematosus	TaPE-seq, tagmentation of prime editor sequencing
SOC, standard of care	TCR, T-cell receptor
SPS, stiff person syndrome	TLR, toll-like receptor
SSc, systemic sclerosis	TNF, tumor necrosis factor
Standard PT, standard SLE pharmacotherapy	traB, transitional B cells
T25-FW, timed 25-foot walk test	TRAIL, tumor necrosis factor-related apoptosis-inducing ligand (CD253)
T4cm, central memory CD4 T cells	Treg, regulatory T cells
T4em, effector memory CD4 T cells	VZV, varicella zoster virus