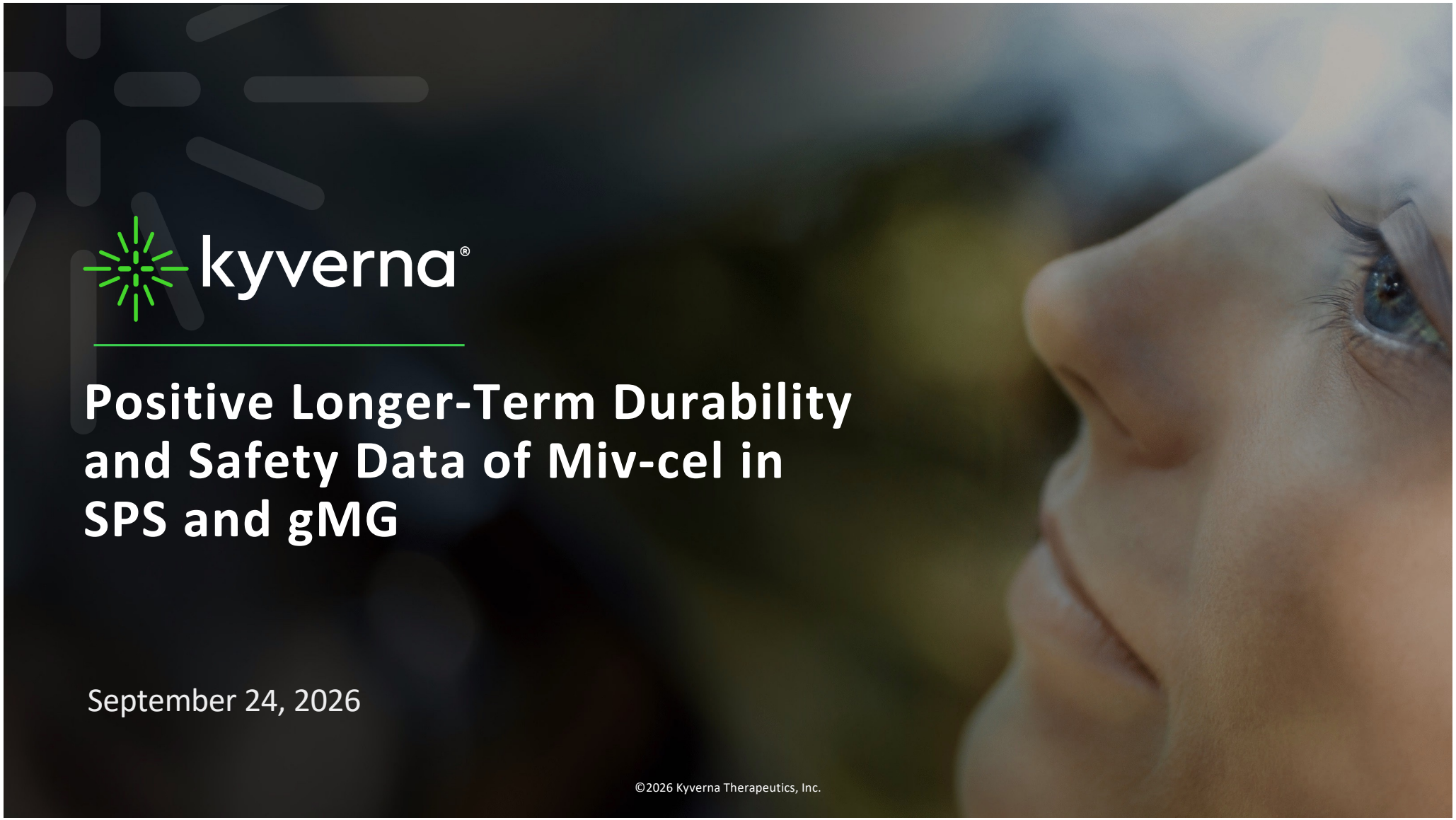


Positive Longer-Term Durability and Safety Data of Miv-cel in SPS and gMG

September 24, 2026

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.

These statements speak only as of the date of this presentation, and Kyverna undertakes no obligation to update or revise these statements.

This presentation also contains estimates made by independent parties relating to industry market size and other data. These estimates involve a number of assumptions and limitations and you are cautioned not to give undue weight on such estimates. We have not independently verified the accuracy or completeness of such information, and we do not take any responsibility for the accuracy or completeness of such information.

This presentation contains references to trademarks and marks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this presentation may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that the applicable licensor will not assert, to the fullest extent under applicable law, its rights to these trademarks and trade names. The Company does not intend its use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of the Company by any other companies.

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 miv-cel 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 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.

Today's Agenda

- Miv-cel – Setting a New Benchmark for Autoimmune CAR T
- Stiff Person Syndrome (SPS) – 1-Year Topline Data
- Generalized Myasthenia Gravis (gMG) – Phase 2 Longer-term Topline Follow-up Data
- Transforming the Treatment Paradigm in Neurologic Autoimmune Diseases
- Q&A

Speakers

Warner Biddle
Chief Executive Officer

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

Single Dose Miv-cel Continues to Establish a New Clinical Response Benchmark for Autoimmune CAR T

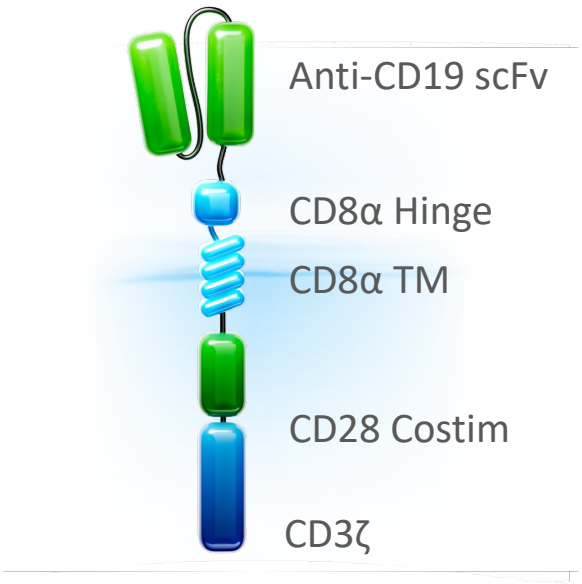
- **Durable results** for at **least 1 year** in both SPS and gMG with **nearly all patients remaining off chronic immunotherapies**
- **Consistent, well-tolerated safety profile** maintained in 1-year follow-up with **no high-grade CRS or ICANS and no cases of IEC-HS**
- Potential for **broad immune reset through deep B-cell depletion** achieved with a **single dose** underscores miv-cel's **unique construct** and **differentiated profile**
- Data further **strengthens SPS BLA; submission expected Q4 2026,** paving way for the **first** potential CAR T launch in autoimmune in 2027, unlocking a **multi-billion-dollar SPS market**
- Data further reinforces miv-cel's **differentiation in gMG; Phase 3 trial further de-risked** with enrollment expected to be completed **mid-2027**

CRS, cytokine release syndrome; IEC-HS, immune effector cell-associated hemophagocytic lymphohistiocytosis-like syndrome; ICANS, immune effector cell-associated neurotoxicity syndrome.

Miv-cel's Differentiated CAR Construct Reinforces Potential First-in-Class and Best-in-Class Profile in Autoimmune

Mivocabtagene Autoleucel (miv-cel)[1,2]

Only Fully Human Autologous CD19 CAR T With CD28 Costim



- **Deep depletion of peripheral and tissue-resident B cells to support broad immune reset and durable remission** [3-4]
- First SPS and gMG patients treated with a single dose of miv-cel achieved **durable efficacy beyond 24 months without the need for chronic immunotherapies**[5]
- **>100** patients dosed with miv-cel across multiple indications[6]
- **No high-grade CRS or ICANS**[3] **and no IEC-HS reported**[6]

CRS, cytokine release syndrome; CNS, central nervous system; Costim, co-stimulation; IEC-HS, Immune Effector Cell-Associated Hemophagocytic Lymphohistiocytosis-Like Syndrome; ICANS, immune effector cell-associated neurotoxicity syndrome; scFv, single-chain fragment variable; TM, transmembrane.

1. Brudno JN, et al. *Nat Med.* 2020;26:270-280. 2. Alabanza L, et al. *Mol Ther.* 2017;25:2452-2465. 3. Minopoulou I, et al. *Ann Rheum Dis.*2025;84(3):e4-e7. 4. Albach FN, et al. *Rheumatology.* 2025;64(6):4075-4077. 5. Named patient access data, Kyverna Therapeutics. 6. Data on file, Kyverna Therapeutics.

Established, Validated, and Scalable Manufacturing Process

- Miv-cel is produced using a **well-established, and validated manufacturing process** similar to those used in commercially available CD19 autologous CAR T-cell therapies
- **Dual-source** U.S. manufacturing strategy
- **>98% manufacturing success rate** driven by robust process, quality systems, and technical expertise
- Commercial agreement with Elevate **supports SPS and future commercial launches and clinical demand**

elevatebio®

Minaris Advanced Therapies

kyverna®

SPS – 12- Month Topline Data from KYSA-8 Registrational Trial

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

KYSA-8 Registrational Trial in SPS – Study Design

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

N = 26

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

Miv-cel
Low-dose Cy/Flu preconditioning
+
Single infusion of 1×10^8 CAR T cells

SPS immunotherapies are discontinued

Primary endpoints:

- Change from baseline in T25FW at 16 weeks
- Safety

Secondary endpoints: change from baseline at 16 weeks

- Modified Rankin Scale (mRS)
- Distribution of Stiffness Index (DSI)
- Hauser Ambulation Index (HAI)
- Heightened Sensitivity Scale (HSS)

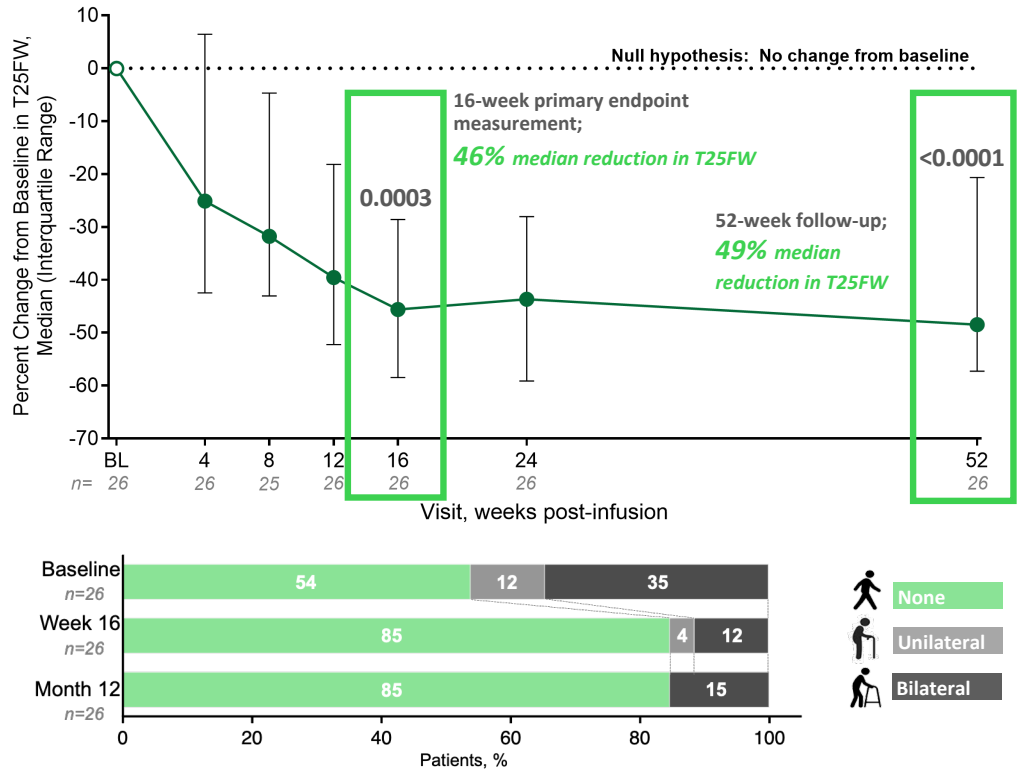
One-year Follow Up

Miv-cel Granted ODD and RMAT Designations by FDA for SPS

Cy/Flu, cyclophosphamide and fludarabine; ODD, Orphan Drug Designation; RMAT, Regenerative Medicine Advanced Therapy; T25FW, Timed 25-Foot Walk.

Continued Reversal of Disability with Nearly All Patients Remaining Off Chronic Immunotherapies Sustained Through 1 Year

Significant T25FW Improvement and Reduced Walking Aid Use



- **95%** of patients who achieved a clinically meaningful improvement (≥20% reduction from baseline)[1] at primary analysis **sustained their benefit at 1 year**
- **At 1 year, over one-third of patients** completed T25FW in <5 seconds, comparable to a **typical time for healthy adults**[2]
- Of the 12 patients requiring a walking aid for T25FW at baseline, **67% continue not to require assistance at 1 year**
- 92% (24/26) of patients continue to remain **free of immunomodulatory or immunosuppressant therapies** for SPS*at 1 year

*Includes IVIg/SCIg, PLEX, rituximab and/or prednisone (≥20 mg/day) for SPS symptoms.

N=26. Database lock: July 2026. Percentages may not total 100% due to rounding. BL, baseline; T25FW, timed 25-foot walk.

1. Hobart J, et al. *Neurology*. 2013;80(16):1509-17. 2. Motl RW, et al. *Mult Scler*. 2017;23(5):704-710.

kyverna®

Statistically Significant Improvements Continued in All Primary and Secondary Endpoints Through 1 Year

	16-wk timepoint	1-Yr follow-up
Primary Endpoint	***P* Value**	**P Value**
✓ Timed 25-Foot Walk	0.0003	<0.0001
Secondary Endpoints	***P* Value**	**P Value**
✓ Modified Rankin Scale	<0.0001	0.0003
✓ Distribution of Stiffness Index	<0.0001	<0.0001
✓ Hauser Ambulation Index	<0.0001	<0.0001
✓ Heightened Sensitivity Scale	<0.0001	<0.0001

Consistent Safety Profile Maintained in 1-Year Follow-Up With No High-Grade CRS or ICANS and No IEC-HS

Treatment-Related Adverse Events, n (%)	N = 26
Any grade ≥3 CRS	0 (0)
Any grade ≥3 ICANS	0 (0)
Any grade IEC-HS	0 (0)
CRS (any Grade)	24 (92)
Grade 1	10 (38)
Grade 2	14 (54)
ICANS (any Grade)	3 (12)
Grade 1	3 (12)
Grade 3/4 neutropenia	5 (19)
Any treatment-related serious AE	3 (12)

- **No high-grade CRS or ICANS observed**
- **No IEC-HS observed**
- All Grade 3/4 neutropenia (5/26), an expected AE with lymphodepletion and CAR T-cell therapies, were manageable
- All treatment-related serious AEs (3/26) have fully resolved

CRS, ICANS, IEC-HS assessed using ASTCT criteria; other AEs graded using CTCAE criteria.
AE, adverse event; ASTCT, American Society for Transplantation and Cellular Therapy; CTCAE, Common Terminology Criteria for Adverse Events; CRS, cytokine release syndrome; IEC-HS, Immune Effector Cell-Associated Hemophagocytic Lymphohistiocytosis-Like Syndrome; ICANS, immune effector cell-associated neurotoxicity syndrome.

KYSA-8 Patient Perspectives:
Before and After Treatment with Miv-cel

Case Studies

View Video

View Video

gMG – Longer-Term Data from Phase 2 KYSA-6 Trial

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

KYSA-6 Phase 2/3 Trial in gMG – Phase 2 Study Design

Phase 2 design: Open-label, single-arm, multicenter study

N = 7

- 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 immunosuppressive/ immunomodulatory therapies OR failed ≥1 immunosuppressive therapy and required chronic plasmapheresis or IVIg to control symptoms

KYV-101

Cy/Flu lymphodepletion
+
Single infusion of 1×10^8 CAR T cells

Primary endpoints

- MG-ADL at 24 weeks
- Adverse events

Key secondary endpoints

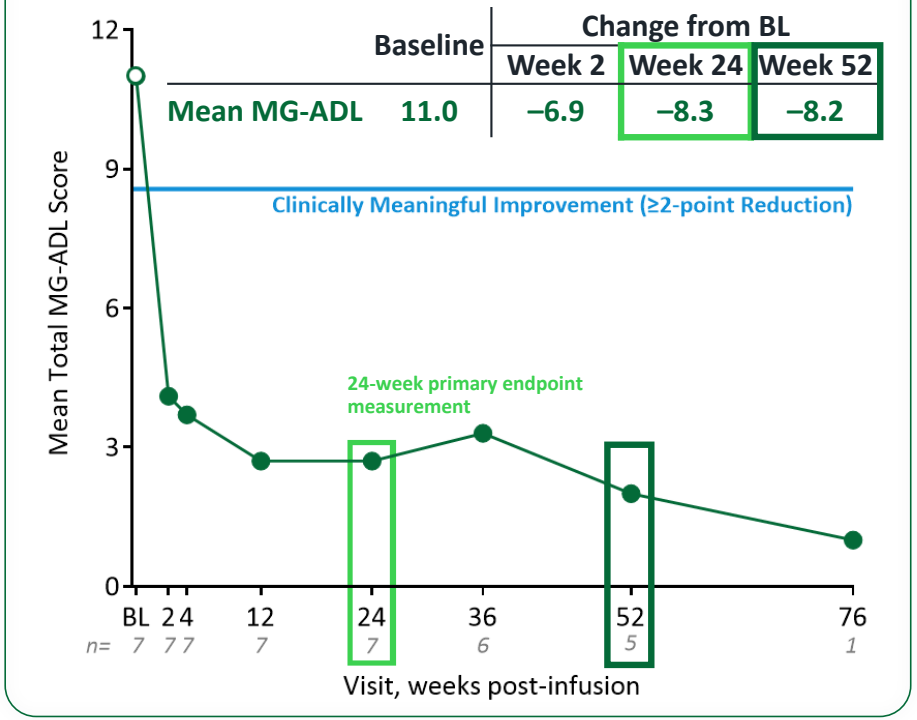
- QMG and MGC scores
- PK/PD

18-month follow up

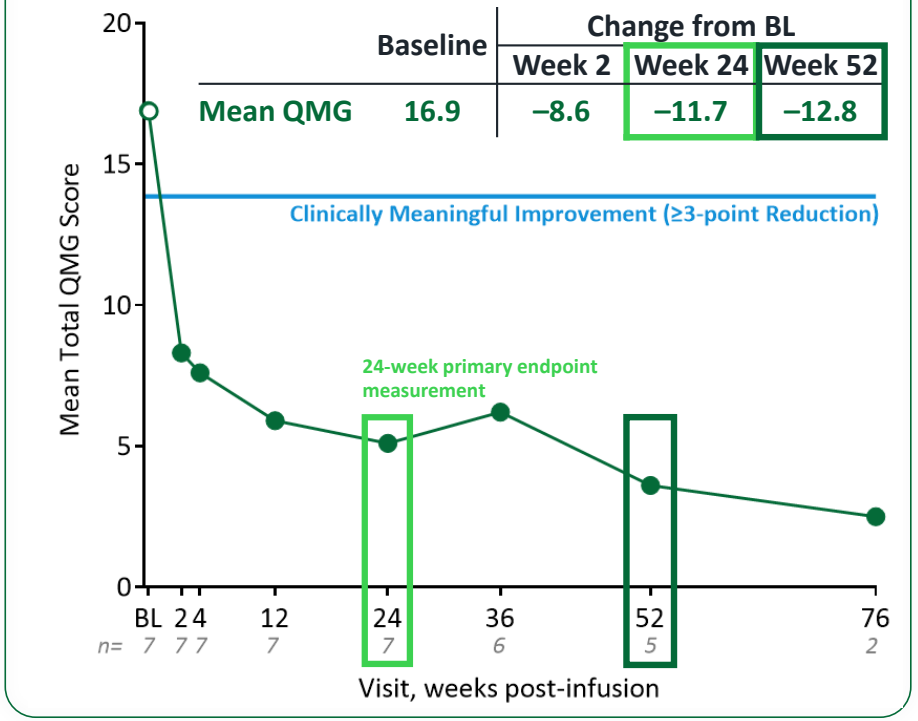
AchR, acetylcholine receptor; Cy/Flu, cyclophosphamide and fludarabine; gMG, generalized myasthenia gravis; LRP4, low-density lipoprotein receptor-related protein 4; MG-ADL, myasthenia gravis Activities of Daily Living; MGC, Myasthenia Gravis Composite; MGFA, Myasthenia Gravis Foundation of America; MuSK, muscle-specific kinase; QMG, Quantitative Myasthenia Gravis.

Robust and Durable Effects Sustained Through At Least 1-Year Across MG-ADL and QMG

MG-ADL Score



QMG Score



N=7. Data cutoff: June 2026. One patient has not yet reported their MG-ADL score at 76 weeks as of the June 2026 data cutoff. Change from baseline is calculated using the baseline values of the corresponding patients at a specified timepoint.
MG-ADL, myasthenia gravis activities of daily living; QMG, quantitative myasthenia gravis.

Single-dose Miv-cel Continues to Deliver Robust and Clinically Meaningful Reductions in MG Outcome Scores and Treatment Burden

Substantially improved clinical outcomes

MG-ADL

100% had clinically meaningful response
(≥2-point reduction vs baseline)

100% were responders
(≥3-point reduction vs baseline)

57% sustained MSE at last follow-up
(MG-ADL score of 0-1)

QMG

100% had clinically meaningful response
(≥3-point reduction vs baseline)

MGC

100% had clinically meaningful response
(≥3-point reduction vs baseline)
–16.4 mean reduction at 24 weeks; –16.8 at 1year

Substantially reduced gMG treatment burden

100% free of immunotherapies, including NSISTs, high-dose steroids (>10 mg), and FcRn and complement inhibitors up to 24 weeks
6 of 7 patients remained free of these agents at last follow-up

N=7. Data cutoff: June 2026.
BL, baseline; FcRn, neonatal fragment crystallizable receptor; MG-ADL, myasthenia gravis activities of daily living; MGC, Myasthenia Gravis Composite; MSE, minimal symptom expression; NSIST, nonsteroidal immunosuppressive therapy; QMG, quantitative myasthenia gravis.

Consistent Safety Profile Maintained in Long-term Follow-Up With No High-Grade CRS and No ICANS or IEC-HS

Treatment-related AEs, n (%)	Patients (n=7)
Any grade ≥3 CRS	0 (0)
Any grade ICANS	0 (0)
Any grade IEC-HS	0 (0)
SAE, any grade[a]	0 (0)
CRS (any grade)	7 (100)
Grade 1	5 (71)
Grade 2	2 (29)
Grade 3/4 events	3 (43)
Neutropenia	2 (29)
Lymphopenia	2 (29)

- **No high-grade CRS and no ICANS observed**
- **No IEC-HS observed**
- All Grade 3/4 treatment-related AEs of neutropenia (2/7), an expected AE with lymphodepletion and CAR T-cell therapies; were not associated with infections, were manageable, and fully resolved

N=7. Data cutoff: June 2026.

[a]After the prior data cut (October 3, 2025), a previously reported treatment-related SAE was reclassified by the Investigator as 'not serious', reflecting his clinical assessment of the AE per protocol-defined seriousness criteria.

CRS, ICANS, IEC-HS assessed using ASTCT criteria; other AEs graded using CTCAE criteria.

AE, adverse event; ASTCT, American Society for Transplantation and Cellular Therapy; CTCAE, Common Terminology Criteria for Adverse Events; CRS, cytokine release syndrome; IEC-HS, Immune Effector Cell-Associated Hemophagocytic Lymphohistiocytosis-Like Syndrome; ICANS, immune effector cell-associated neurotoxicity syndrome; SAE, serious adverse event.

kyverna®

Opportunity to Achieve Drug-Free, Disease-Free Remission with Single Dose Miv-cel

Note: These observations are derived from separate clinical settings; comparisons across trials are not based on head-to-head studies.

		Approved			Investigational	
		FcRn Inhibitor[1] *VYVGART®*	**Complement Inhibitor[2,3]** *ULTOMIRIS®*	**CD19 mAb[4]** *UPLIZNA®*	**BCMA mRNA CAR T[5]** *Descartes-08*	**Miv-cel CD19 CAR T** (KYSA-6, n=7)
Primary Endpoint		4 weeks	6 months	6 months	3 months	**6 months**
Depth of Response *Mean reduction from baseline to primary endpoint (non-placebo adjusted)*	**MG-ADL Reduction**	~4.6	3.1	4.2	4.1	**8.3**
	QMG Reduction	~6.2	2.8	4.8	3.9	**11.7**
% Responders *Patients with ≥3-point MG-ADL improvement from baseline to primary endpoint (non-placebo adjusted)*		~73%	~57%	69%	64%	**100%**
Achieve MSE *% of patients achieving MG-ADL of 0 or 1*		40%	43% *At any point before primary endpoint*	Not reported	33% *6 months to 1 year*	**57%** *At any point before primary endpoint*
Free from chronic background immunotherapies		✗	✗	✗	✗	✓

BCMA, b-cell maturation antigen; FcRn, neonatal fragment crystallizable receptor; mAb, monoclonal antibody; MG-ADL, myasthenia gravis activities of daily living; mRNA, messenger RNA; MSE, minimal symptom expression; QMG, quantitative myasthenia gravis score.

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. Vu T, et al. *Nat Med*. 2026;32:1131-1141.

kyverna®

Transforming the Treatment Paradigm in Neurologic Autoimmune Diseases

Warner Biddle – Chief Executive Officer

Miv-cel's Compelling Value Proposition Supports Strong Commercial Potential Across Multiple Autoimmune Diseases

Today's Treatment Paradigm	Miv-cel's Potential - *Drug-Free, Disease-Free Remission*
Chronic therapy	✓ **Single dose**
Inadequate disease management	✓ **Immune reset**
Transient benefit	✓ **Durable benefit beyond one year**
Reliance on additional immunotherapies	✓ **Elimination of background immunotherapies**

Beyond Efficacy, Miv-cel's Consistent and Well-Tolerated Safety Profile Increasingly Differentiates the Therapy in the Competitive Landscape

Potential First-Approved Therapy for SPS Represents a Valuable Commercial Neuroimmunology Opportunity

Compelling SPS Market Dynamics

- **Progressive rare disease** with **no approved therapies**
- **~6K** U.S. diagnosed patients[1]**; 2-2.5K** immediately addressable[*2]
- Patients **concentrated** at academic centers
- Potential **diagnosis upside**
- Chronic treatment, disability/job loss drive **substantial economic burden on patients and society**

Targeted Launch Strategy to Maximize Value Creation

- **First-in-indication rare disease launch**
- Expect to price miv-cel at a **significant premium to existing oncology CAR T *(~$500-$600K WAC[3])***
- Targeting **~10 centers** where patients are concentrated
- ATC footprint expected to enable **cost-effective, scalable launch execution and biologics-like margins in SPS**

Total U.S. Diagnosed SPS Market Represents a Multi-Billion-Dollar Rare Disease Opportunity[‡]

*Reflects patients who are treated with off-label Immunotherapies defined as off-label immunosuppressants (e.g., prednisone), rituximab and/or intravenous immunoglobulin.
‡Internal cumulative estimate based on assumed miv-cel pricing (premium to oncology CAR T pricing) and total diagnosed SPS patients in U.S.
ATC, Academic Treatment Centers
1. Crane PD, et al. *Neurology*. 2024;103(12):e210078. 2. HCP qualitative data and U.S. Claims Data. 3. WAC price for Yescarta®, Breyanzi®, Kymriah®, Carvykti®, Abecma®, and Aucatzyl®.

kyverna®

Pioneering Differentiated Therapies with Curative Potential to Free People from Life-long Autoimmune Diseases and Chronic Therapy

Miv-cel BLA Submission Underway for SPS

Further strengthened by 1-year efficacy and safety data; Potential 1st approved CAR T for autoimmune and 1st approved treatment for SPS

Best-in-Class Profile

Unique miv-cel construct and validated manufacturing process supporting potential for durable drug-free, disease-free remission with single, well-tolerated dose

Valuable Commercial Opportunity in SPS

Commercial readiness underway; immediately addressable patients; premium pricing potential

Neurologic Autoimmune Strategy

Focused franchise strategy prioritizing SPS, MG, and PMS

Innovation to Expand Access

Potential for new indications and delivery mechanisms, including alternative preconditioning and manufacturing enhancements

Capitalized to Support Initial Miv-cel Launch

Operating runway into 2028 supporting SPS launch and gMG Phase 3 trial

PMS, progressive multiple sclerosis.

kyverna®

Q&A

Warner Biddle
Chief Executive Officer

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

Greg Martini
Chief Financial Officer

Appendix

Single Dose Miv-cel Demonstrates Potential To Deliver Drug-Free, Disease-Free Remission to Patients with SPS, a Disease with No Approved Therapies

Sustained improvements through 1 year across all primary and secondary endpoints resulting from **deep B-cell depletion and potential for immune reset**

Continued **reversal of disability** observed out to 1 year

Nearly all patients treated remain free of chronic immunomodulatory or immunosuppressant therapies for SPS, substantially reducing treatment burden

Consistent, well-tolerated, and manageable **safety profile,** continues to support potential for outpatient administration

1-Year Durability and Safety Data Further Strengthen BLA Submission, Anticipated to be Completed in Q4 2026

Immunomodulatory or immunosuppressant therapies include IVIg/SCIg, PLEX, rituximab and/or prednisone (≥20 mg/day) for SPS symptoms.

kyverna®

gMG Data Further Reinforces Potential for Miv-Cel to Provide Broad Immune Reset with a Single Dose, Increasing Confidence in Phase 3 Trial

Robust and durable effects sustained through at least 1 year further differentiate miv-cel from existing chronic therapies

Majority of patients maintained MSE as of last follow-up

Nearly all patients remain free of chronic immunotherapies, substantially reducing treatment burden

Consistent, well-tolerated, and manageable safety profile continues to support potential for outpatient administration

Positioned to Potentially be the First CD19 Autologous CAR T to be Approved in gMG, Transforming the Treatment Paradigm

Chronic background immunotherapies include NSISTs (nonsteroidal immunosuppressive therapy), high-dose steroids (>10 mg), and FcRn (neonatal fragment crystallizable receptor) and complement inhibitors.
MG-ADL, myasthenia gravis activities of daily living; MSE, minimal symptom expression; QMG, quantitative myasthenia gravis.

Primary Endpoint Outcome Assesses Impact of SPS on Walking Ability

Timed 25-Foot Walk (T25FW)

- Validated tool to assess walking ability[1]
- Used to evaluate stiffness and loss of mobility in SPS[2]
- Healthy adults can perform the T25FW in ~4-5 seconds[3]

20% improvement considered clinically meaningful[1]

1. Hobart J, et al. *Neurology*. 2013; 80: 1509-1517. 2. Newsome SD and Johnson T J. *Neuroimmunol*. 2022;369:577915. 3. Motl RW, et al. *Mult Scler J*. 2017; 23(5): 704-710.

kyverna®

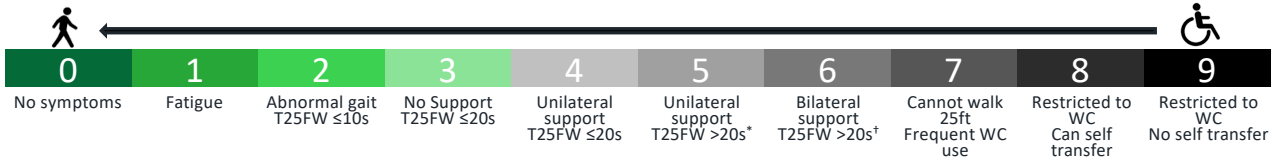
Secondary Endpoint Outcomes Assess Extent of Disability and SPS-Specific Symptoms

Modified Rankin Scale (mRS)

Degree of disability[1]

Hauser Ambulation Index (HAI)

Time and degree of assistance to complete T25FW[2]



Distribution-of-Stiffness Index (DSI)

Muscle stiffness across body regions[3,4]

1 point for each stiff body region (0-6)

Heightened Sensitivity Scale (HSS)

Number of triggers of muscle spasms[3,4]

1 point for each trigger/stimulus (1-7)

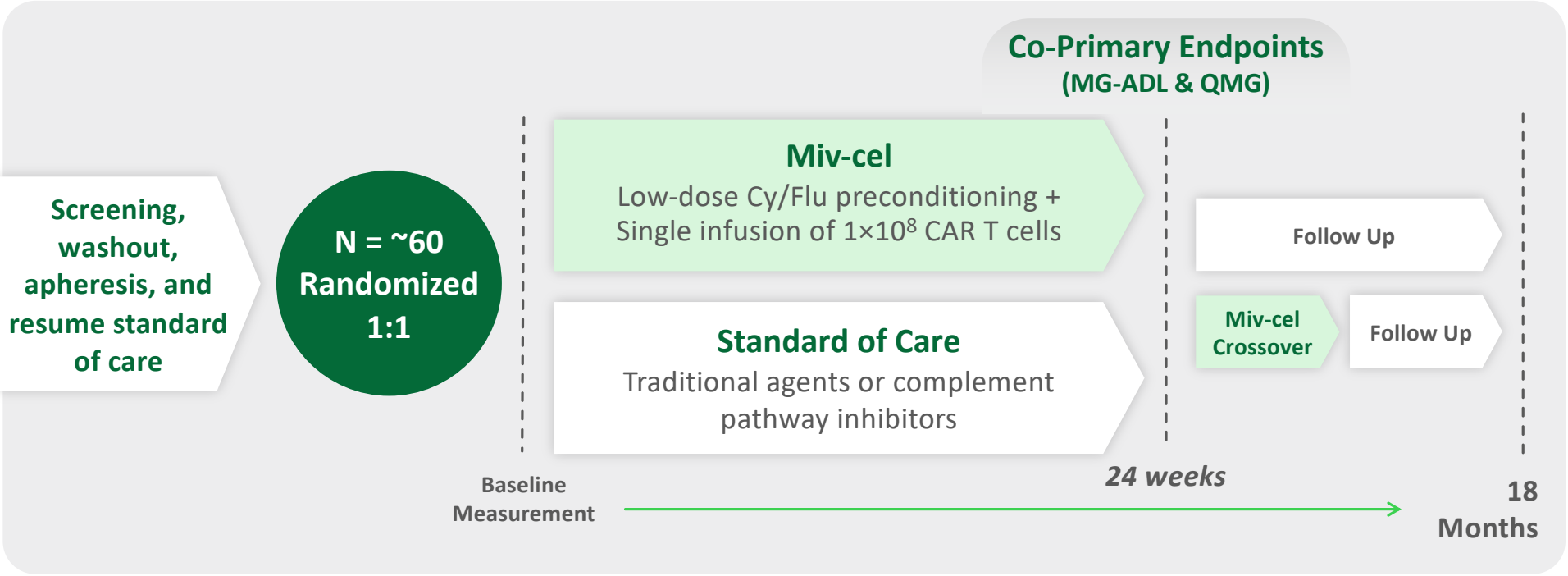
T25FW, timed 25-foot walk; WC, wheelchair.

1. van Swietin JC, et al. *Stroke*. 1988; 19(5): 604-607. 2. Hauser SL, et al. *New Engl J Med*. 1983; 308(4): 173-180. 3. Dalakas MC, et al. *N Engl J Med*. 2001; 345(26): 1870-1876. 4. Dalakas MC, et al. *Ann Neurol*. 2017; 82(2): 271-277.

kyverna®

KYSA-6 Phase 2/3 Trial in gMG – Phase 3 Study Design

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



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

Cy/Flu, cyclophosphamide and fludarabine; FcRn, neonatal fragment crystallizable receptor; IVIg, intravenous immunoglobulin; MG-ADL, myasthenia gravis activities of daily living; PLEX, plasma exchange; QMG, quantitative myasthenia gravis score.

kyverna®