Long-Term Safety and Efficacy of Nipocalimab in Generalized Myasthenia Gravis: Vivacity-MG3 Open-Label Extension Phase Results

Carlo Antozzi, MD[1], Tuan Vu, MD[2], Sindhu Ramchandren, MD, MS[3], Richard J. Nowak, MD, MS[4], Constantine Farmakidis, MD[5], Vera Bril, MD[6], Jan De Bleecker, MD, PhD[7], Huan Yang, MD[8], Eduard Minks, MD, PhD[9], Jin-Sung Park, MD, PhD[10], Mariusz Grudniak, MD[11], Marek Smilowski, MD[12], Teresa Sevilla, MD[13], Sarah Hoffmann, MD[14], Kumaraswamy Sivakumar, MD[15], Eriene Youssef, PharmD[3], Panna Sanga, MD[3], Keith Karcher, MS[3], Yaowei Zhu, PhD[3], John Sheehan, PhD[3], Hong Sun, MD, PhD[3¥]

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Presented by Dr. C. Farmakidis at the American Academy of Neurology (AAN) Annual Meeting, April 5-9, 2025; San Diego, CA, USA

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KEY TAKEAWAYS

- Nipocalimab demonstrated sustained, clinically meaningful disease control over 84 weeks in a broad population of autoantibody-positive gMG patients, while maintaining an acceptable safety profile

gMG, generalized myasthenia gravis.

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INTRODUCTION

- Nipocalimab is a fully human, aglycosylated investigational monoclonal antibody, designed to bind with high affinity and specificity to block FcRn; this decreases circulating IgG without causing broad immunosuppression[1-3]
- During the phase 3 Vivacity-MG3 placebo-controlled double-blind period, consistently-dosed nipocalimab + SOC resulted in rapid and substantial lowering of circulating IgG, including MG pathogenic antibodies, sustained over 6 months[4]
- IgG reduction was associated with rapid and sustained disease control over 6 months in a broad population of antibody-positive patients with gMG[4]
  - LS mean CFB (SE) in MG-ADL score from baseline to weeks 22-24 = −4.70 (0.329) for nipocalimab + SOC vs −3.25 (0.335) for placebo + SOC (difference −1.45 [95% CI −2.38 to −0.52]; p=0.0024)[4]

1. Leu JH, et al. *Front Neurosci*. 2024;18:1302714; 2. Ling LE, et al. *Clin Pharmacol Ther*. 2019;105(4):1031-1039; 3. Ling LE, et al. *Hematol Transfus Cell Ther*. 2022; 44:S133. 4. Antozzi C, et al. *Lancet Neurol*. 2025; 24:105-116.
CFB, change from baseline; CI, confidence interval; FcRn, neonatal fragment crystallizable receptor; gMG, generalized myasthenia gravis; IgG, immunoglobulin G; LS, least square; MG-ADL, Myasthenia Gravis-Activities of Daily Living; SE, standard error; SOC, standard-of-care.

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METHODS

- Vivacity-MG3 (NCT04951622) is a multicenter, randomized, double-blind, placebo-controlled study with an ongoing OLE phase, designed to evaluate the efficacy, safety, PK, and PD of nipocalimab in adults with gMG[1,a]
- Participants who completed the double-blind phase were eligible for OLE
- Results from the primary efficacy population (seropositive: anti-AChR+, anti-MuSK+ and/or anti-LRP4+) participants are presented
- Participants could receive concomitant, stable SOC treatment during the trial[b]

1. Antozzi C, et al. *Lancet Neurol*. 2025; 24:105-116.
[a]Randomization was stratified by autoantibody status (anti-AChR+ and/or anti-MuSK+, anti-AChR negative, and anti-MuSK negative), Day 1 MG-ADL total score (≤9 >9), and region (East Asia, US, rest of world); [b]SOC includes acetylcholinesterase inhibitor, glucocorticosteroid, and/or immunosuppressant.
AChR+, acetylcholine receptor antibody-positive; gMG, generalized myasthenia gravis; LRP4+, low density lipoprotein receptor-related protein 4-positive; MuSK+, muscle-specific kinase antibody-positive; OLE, open-label extension; PD, pharmacodynamics; PK, pharmacokinetics; SOC, standard-of-care; US, United States of America.

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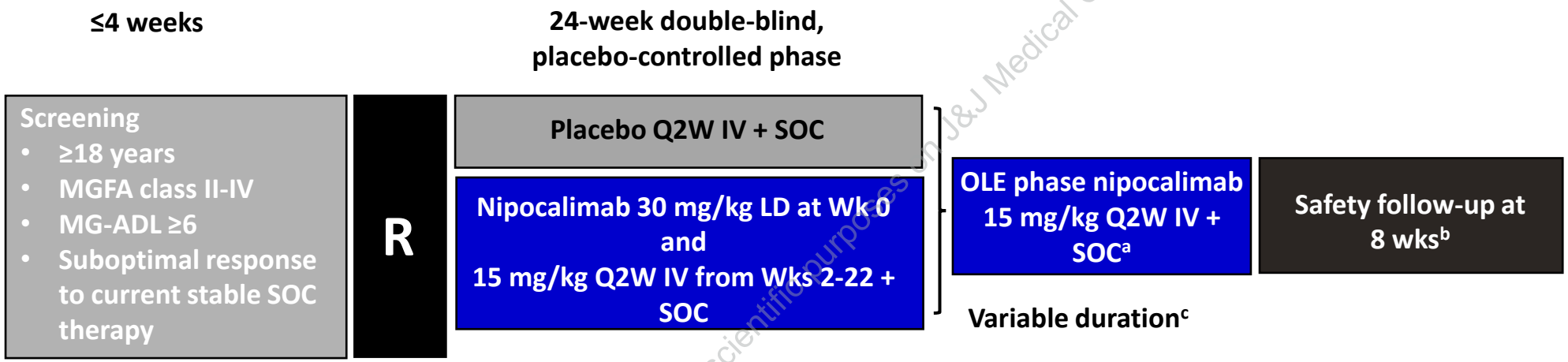
METHODS

FIGURE 1: Study Design[1]



1. Antozzi C, et al. *Lancet Neurol.* 2025; 24:105-116.

[a]Due to the COVID-19 pandemic, some participants from the Phase 2 study were unable to enter the Phase 2 OLE study. These participants could directly enter the Phase 3 OLE and their data will be disclosed later; [b]Participants who withdraw or discontinue after receiving any amount of study intervention are required to complete a safety follow-up visit 8 wks after their last dose; [c] In the EU, the OLE phase will be up to 240 wks.

COVID-19, coronavirus disease 2019; EU, European Union; IV, intravenous; LD, loading dose; MG-ADL, Myasthenia Gravis-Activities of Daily Living; MGFA, Myasthenia Gravis Foundation of America; OLE, open-label extension; Q2W, every 2 weeks; R, randomized 1:1; SOC, standard-of-care; wk(s), week(s).

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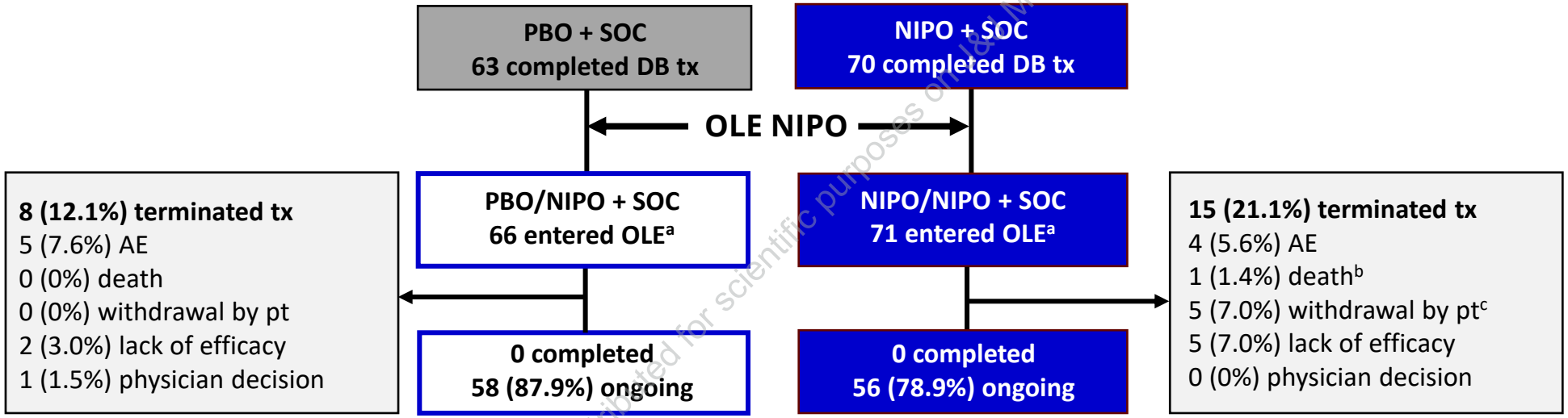
RESULTS

- Open-label phase is ongoing
- ~83% of participants entering the open-label phase are still receiving treatment at data cut-off

FIGURE 2: Disposition (Seropositive Population)



[a]Per protocol, participants requiring rescue treatment during the DB phase completed the DB end-of-phase visit and were eligible to enter the OLE per investigator's discretion. Four patients discontinued the double-blind phase prior to Week 24, but entered the open-label phase: 3 PBO/NIPO and 1 NIPO/NIPO; [b]Cardiac failure (unrelated to treatment) occurred 2 days after the last dose of study treatment on study day 422; [c]Reasons for withdrawal: lack of improvement; participant was unsatisfied; travel to site was too tiring after surgery; personal reasons; and participant concern about poor vascular access
AE, adverse event; DB, double-blind; NIPO, nipocalimab; OLE, open-label extension; PBO, placebo; pt, participant; SOC, standard of care; tx, treatment

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RESULTS

TABLE 1: Baseline Demographics and Characteristics (Seropositive Population)

- DB baseline characteristics of participants entering the OLE are similar to the overall DB population

Sample	Double-blind		Open-label	
	PBO + SOC	NIPO + SOC	PBO/NIPO + SOC	NIPO/NIPO + SOC
Analysis Set: Seropositive efficacy (DB and OLE)[a]	76	77	66	71
Age mean (range), years	52.3 (20, 81)	52.5 (20, 81)	51.6 (20, 81)	51.1 (20, 81)
Female, n (%)	42 (55.3%)	50 (64.9%)	38 (57.6%)	46 (64.8%)
Race, n (%)				
American Indian or Alaska native	0	1 (1.3%)	0	1 (1.4%)
Asian	25 (32.9%)	24 (31.2%)	21 (31.8%)	22 (31.0%)
Black/African American	1 (1.3%)	1 (1.3%)	1 (1.5%)	1 (1.4%)
White	47 (61.8%)	49 (63.6%)	41 (62.1%)	45 (63.4%)
Not reported	3 (3.9%)	2 (2.6%)	3 (4.5%)	2 (2.8%)
BMI, mean (SD), kg/m^2	28.5 (5.78)	27.6 (5.39)	28.6 (5.99)	27.5 (5.30)
Baseline MG-ADL total score, mean (SD)	9.0 (1.97)	9.4 (2.73)	9.0 (1.98)	9.3 (2.75)
Baseline QMG total score, mean (SD)	15.7 (4.92)	15.1 (4.78)[b]	15.6 (4.90)	15.2 (4.85)[c]
Anti-$AChR^+$/Anti-$MuSK^+$/Anti-$LRP4^+$, n	71/4/1	63/12/2	61/4/1	59/10/2

[a]All randomized seropositive participants who received ≥1 dose of study intervention in the DB phase or all seropositive participants who received ≥1 dose of nipocalimab in the OL phase; [b]n=73; [c]n=67
AChR+, acetylcholine receptor antibody-positive; BMI, body mass index; DB, double-blind; gMG, generalized myasthenia gravis; LRP4+, low density lipoprotein receptor-related protein 4-positive; MG-ADL, Myasthenia Gravis-Activities of Daily Living; MuSK+, muscle-specific kinase antibody-positive; NIPO, nipocalimab; OLE, open-label extension; PBO, placebo; QMG, Quantitative Myasthenia Gravis; SD, standard deviation; SOC, standard-of-care.

Autoantibody: MG

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RESULTS

- 137 antibody-positive participants were treated with nipocalimab during OLE phase
- Treatment at data cut-off, represents ~87-90 patient-years after completion of DB phase
- Among participants in OLE phase, follow-up duration was over 62 weeks

TABLE 2: Nipocalimab Exposure (Seropositive Population)

	Double-blind		Open-label	
	PBO + SOC	NIPO + SOC	PBO/NIPO + SOC	NIPO/NIPO + SOC
Analysis set: Seropositive efficacy (DB and OLE)	76	77	66	71
Treatment duration, median (range), weeks[a]	22.1 (0, 23)	22.1 (2, 23)	69.1 (8, 128)	62.1 (8, 128)
Number of administrations received, median (range)	12.0 (1, 12)	12.0 (2, 12)	35.0 (5, 57)	31.0 (5, 65)
Total treatment, participant-years, sum	29.2	30.4	86.8	90.3
Duration of follow-up, median (range), weeks[b]	24.0 (0, 31)	24.0 (10, 25)	69.7 (10, 128)	62.1 (16, 128)

[a]Total duration of treatment=(date of last dose of study intervention minus date of first dose of study intervention) + 1; [b]Total duration of follow-up = (date of last contact minus date of first dose of study intervention) + 1.
DB, double-blind; NIPO, nipocalimab; OLE, open-label extension; PBO, placebo; SOC, standard-of-care

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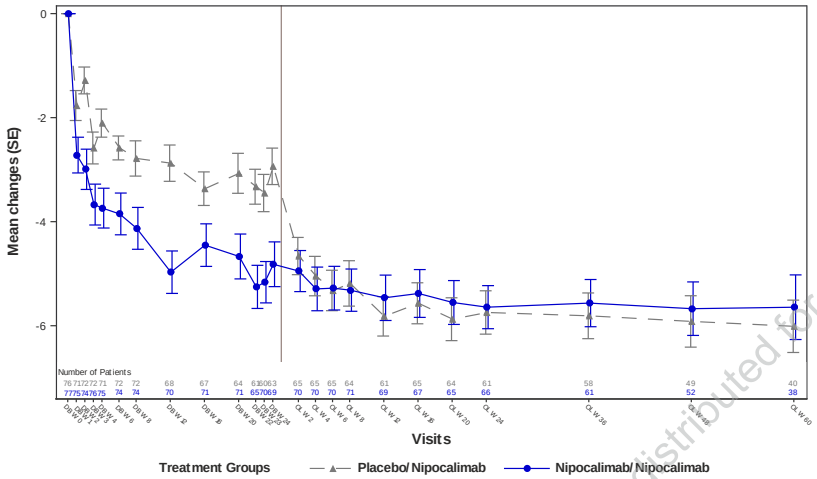
RESULTS

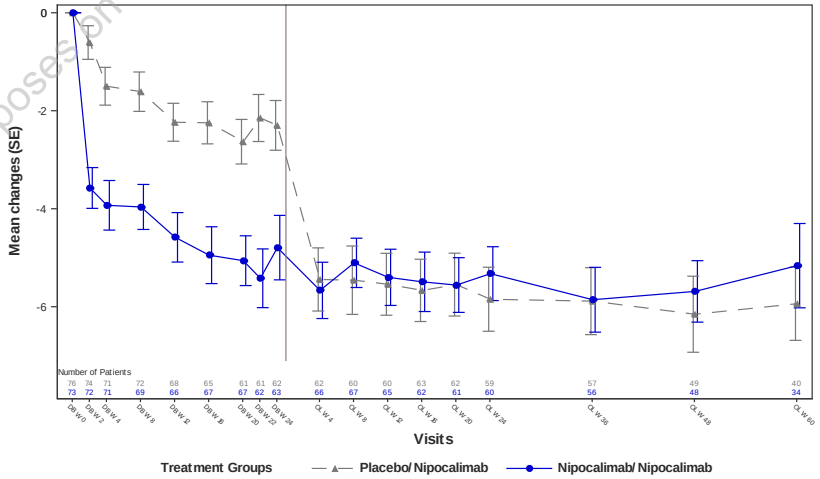
- At OLE Week 60, MG-ADL mean (SE) change from double-blind baseline: −6.01 (0.503) in PBO/NIPO + SOC and −5.64 (0.621) in NIPO/NIPO + SOC[a]
- At OLE Week 60, QMG mean (SE) change from double-blind baseline: −5.94 (0.749) in PBO/NIPO + SOC and −5.16 (0.860) in NIPO/NIPO + SOC[b]

FIGURE 3: CFB of MG-ADL and QMG Over Time (Seropositive Population)

(A) MG-ADL Total Score: Mean Changes from DB Baseline



(B) QMG Total Score: Mean Changes from DB Baseline



Note: P-value for comparison of MG-ADL and QMG total score change from baseline significantly different from zero using a one-sample t-test; [a]P<0.001, [b]P<0.001.
CFB, change from baseline; DB, double-blind; MG-ADL, Myasthenia Gravis-Activities of Daily Living; NIPO, nipocalimab; PBO, placebo; OL(E), open-label extension; QMG, Quantitative Myasthenia Gravis; SE, standard error; SOC, standard-of-care; W, week.

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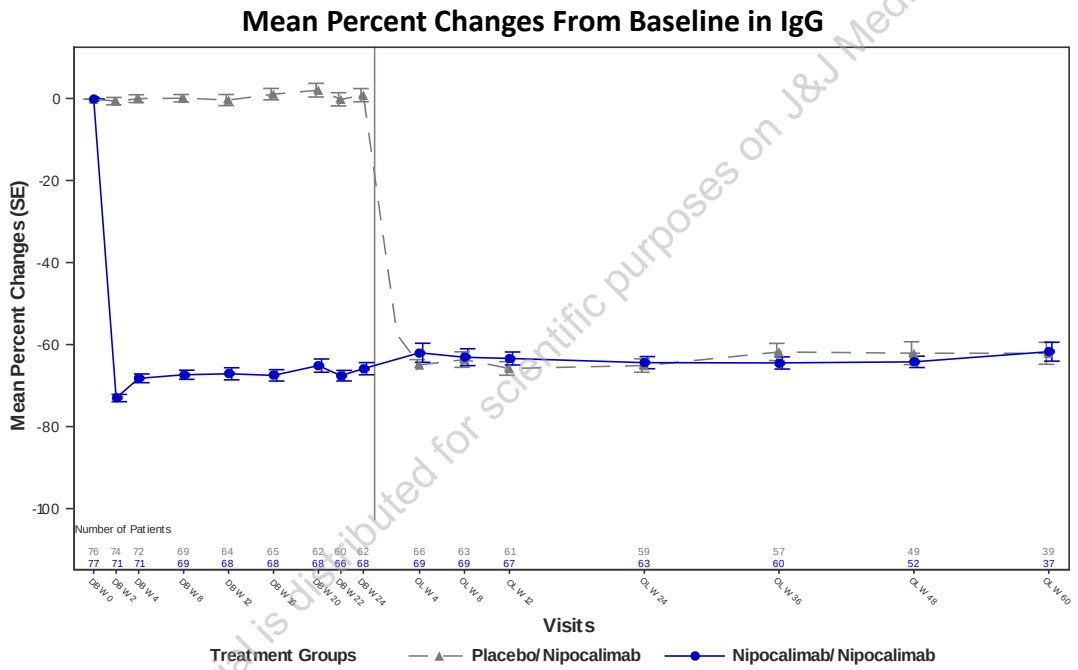
RESULTS

- At OLE Week 60, mean (SE) % CFB of IgG levels were –61.56 (2.297) in NIPO/NIPO + SOC and −61.96 (2.686) in PBO/NIPO + SOC groups

FIGURE 4: PD Biomarker: Total IgG Reduction from Baseline (Seropositive Population)



CFB, change from baseline; DB, double-blind; IgG, Immunoglobulin G; PD, pharmacodynamic; OL(E), open-label extension; SE, standard error; SOC, standard-of-care; W, week.

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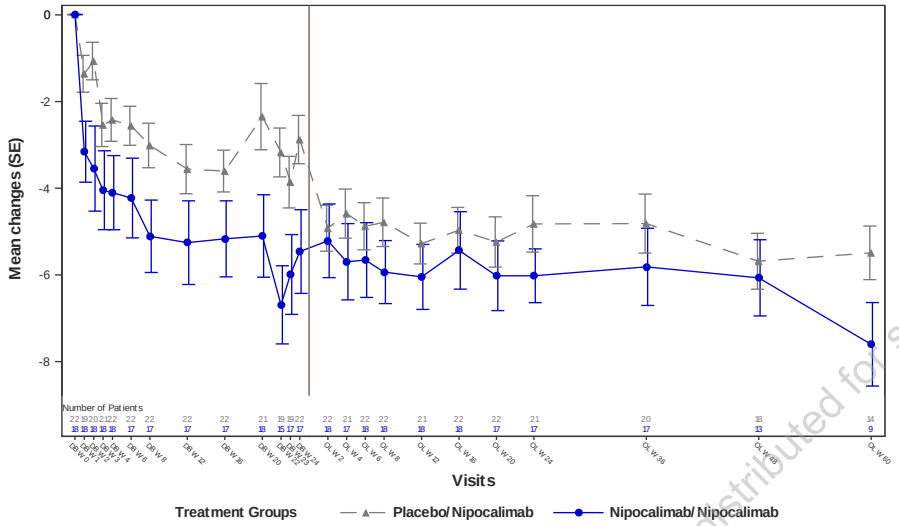
RESULTS

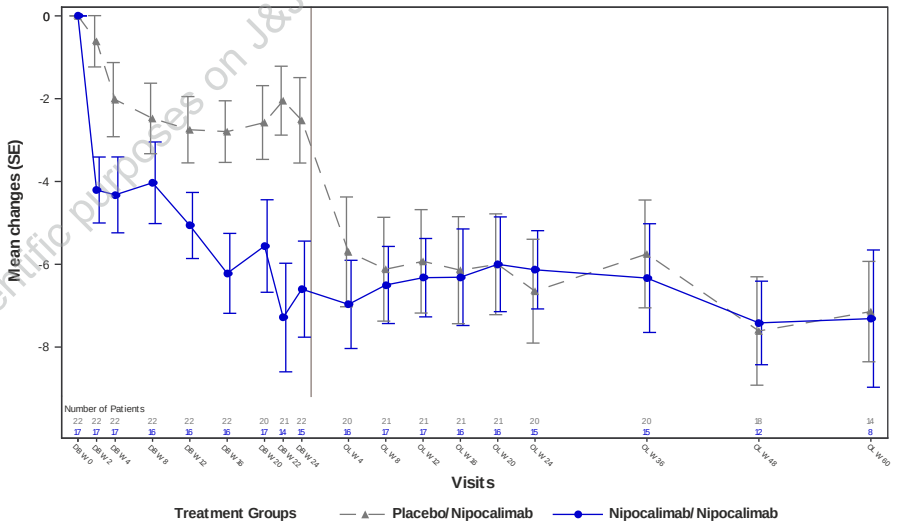
- 45% (40/89) of participants receiving steroids at open-label baseline were able to decrease or discontinue steroids at data cutoff[a]
  - Among these patients the mean dose of prednisone (mg eq per day) decreased from 23 to 10[b]
- Efficacy was maintained in participants who decreased/discontinued steroids

FIGURE 5: MG-ADL and QMG in Participants who Decreased/Discontinued Steroids (Seropositive Population)

(A) MG-ADL Total Score: Mean Changes from DB Baseline



(B) QMG Total Score: Mean Changes from DB Baseline



1. Maggio, MC, et al. *Int J Mol Sci.* 2023;24(17):13192. 2. Nayak S and Acharjya B. *Indian J Dermatol.* 2008;53(4):167–170.

[a]Tapering one of the subject's concomitant MG medications Q4W was allowed in OLE phase if disease was stable in past 4 weeks based on MG-ADL scores and on investigator's discretion. [b]Steroid dose equivalents were calculated as described[1-2]

CFB, change from baseline; DB, double-blind, MG-ADL, Myasthenia Gravis-Activities of Daily Living; OL, open-label extension; SE, standard error; QMG, Quantitative Myasthenia Gravis; Q4W, every 4 weeks; W, week.

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RESULTS

- There were no unexpected adverse events during the OLE
- Adverse event rates including MACE were generally similar in the DB PBO and OLE All NIPO groups

TABLE 3: Safety and Tolerability (Seropositive Population)

	DB PBO			DB NIPO			OLE All NIPO		
Analysis Set: Seropositive	76			77			137		
Average follow-up duration, wks	22.92			23.13			68.96		
P-Y[a]	33.4			34.1			181.1		
	Events/P-Y[a]	Events, n	Pts, n[b]	Events/P-Y[a]	Events, n	Pts, n[b]	Events/P-Y[a]	Events, n	Pts, n[b]
All AE	6.98	233	62	8.41	287	64	5.10	924	124
Serious AE	0.57	19	11	0.35	12	5	0.28	51	31
Fatal AE	0.06	2[c]	2[c]	0.03	1[c]	1[c]	0.02	3[c,d]	3[c,d]
Tx discontinuation due to AE[e]	0.18	6	6	0.18	6	4	0.06	11	11
Infection and infestations	1.32	44	31	1.70	58	33	1.20	217	93
Infusion-related reaction[f]	0.51	17	6	0.35	12	9	0.07	12	7
Adjudicated MACE, fatal	0.06	2	2	0	0	0	0.01	2	2
Adjudicated MACE, not fatal	0.03	1	1	0	0	0	0.04	7	1

[a]Participant-years of observation (P-Y) is calculated as the total duration of follow-up in days/365.25; [b]Participants with ≥1 AE are shown; [c]Investigator assessed death(s) as unrelated to treatment; [d]Investigator assessed 1 death as related to treatment (hemophagocytic lymphohistiocytosis); [e]Permanent discontinuation of treatment. Treatment discontinuation for an AE with onset in DB (or OLE) occurred in DB (or OLE); [f]Indicated as infusion reaction by investigator on eCRF and relationship to study intervention="Related." AE, adverse event; DB, double-blind; eCRF, case report form; MACE, major adverse cardiovascular event; NIPO, nipocalimab; n, number; OLE, open-label extension; PBO, placebo; Pt, participant; P-Y, participant-year; TEAE, treatment-emergent adverse events; Tx, treatment; wks, weeks.

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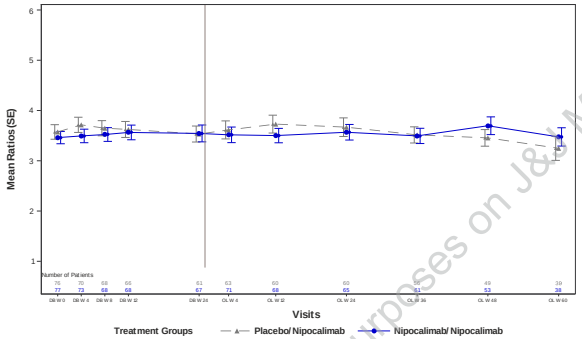
RESULTS

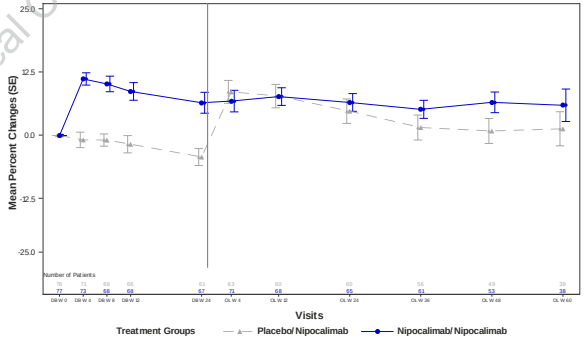
FIGURE 6: Lipids Over Time (Seropositive Population)

- From BL to DB Week 24, CHOL/HDL ratios (mean CFB) were stable in both the PBO/NIPO and NIPO/NIPO groups (−0.1 and 0, respectively)
- This ratio (mean CFB) remained stable at OLE Week 60 (−0.2 and +0.2, respectively)
  - Ratios remained stable because similar percent increases in both HDL and LDL were observed with nipocalimab

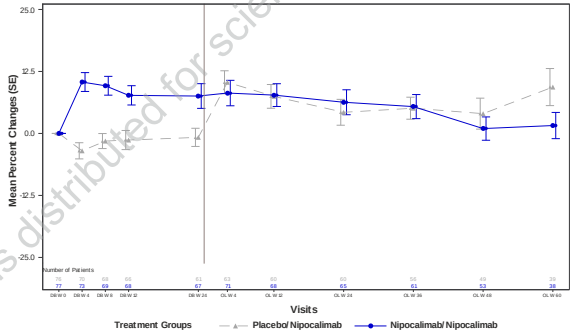
(A) Mean CHOL/HDL Ratios From DB Baseline



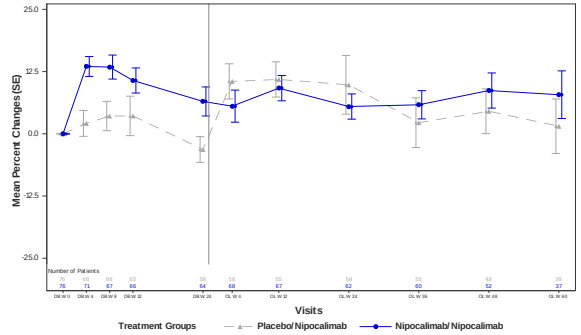
(B) Mean Percent Changes in CHOL (mmol/L) From DB Baseline



(C) Mean Percent Changes in HDL CHOL (mmol/L) From DB Baseline



(D) Mean Percent Changes in LDL CHOL (mmol/L) From DB Baseline



BL, baseline; CFB, change from baseline; CHOL, cholesterol; DB, double-blind; HDL, high-density lipoprotein; LDL, low-density lipoprotein; NIPO, nipocalimab; OL(E), open-label extension; PBO, placebo; SE, standard error.

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CONCLUSIONS

- Nipocalimab treatment resulted in sustained, clinically meaningful disease control over 84 weeks across the double-blind and open-label phases in a broad population of autoantibody-positive adults with gMG
- 45% of patients receiving corticosteroids for gMG steroids at baseline decreased/discontinued corticosteroids; the nipocalimab efficacy benefit was preserved in these patients
- There are no new safety concerns despite continuous IgG lowering and event rates were comparable in the double-blind placebo and open-label extension phases

gMG, generalized myasthenia gravis; IgG, immunoglobulin G.

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DISCLOSURES:

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