High Cardiovascular Disease Burden Among Patients With Myasthenia Gravis in the US

Kristin Heerlein, MD, PhD, MBA,[1] Jana Podhorna, MD, PhD,[1] Cécile Blein, PhD,[1] Charlotte Ward, PhD,[2] Cynthia Qi, MBA,[1] Rahul Malik,[3] Eliot A. Brinton, MD[4]

[1]argenx, Ghent, Belgium; [2]ZS Associates, Princeton, New Jersey; [3]ZS Associates, Haryana, India; [4]Utah Lipid Center, Salt Lake City, Utah

INTRODUCTION

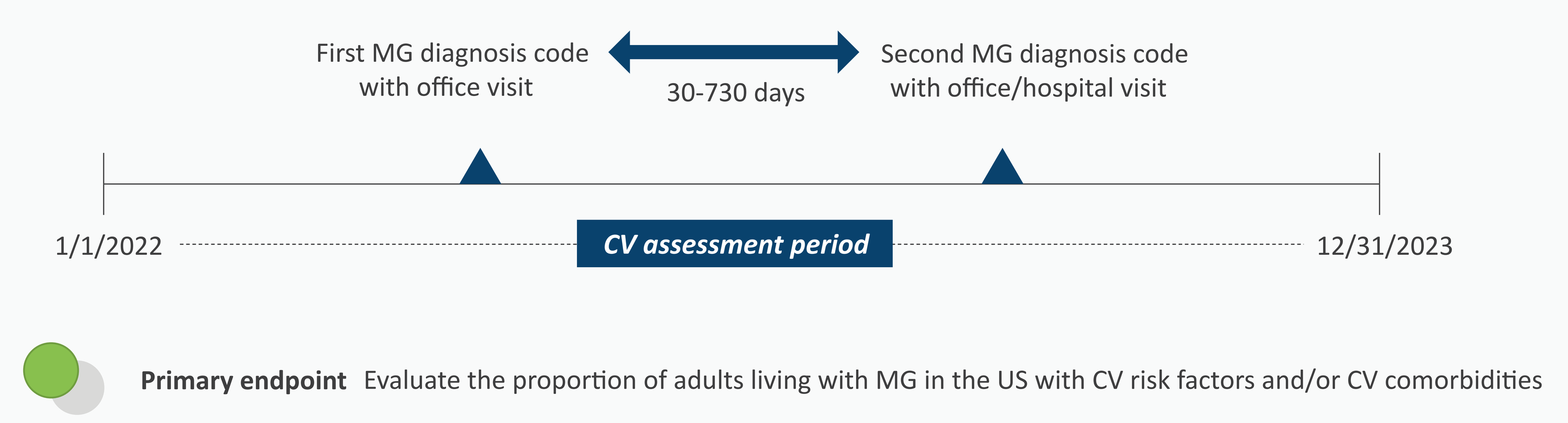
- MG is a rare, chronic, and severe autoimmune disease associated with pathogenic autoantibodies directed against the neuromuscular junction[1-3]
- While prior studies showed that MG patients had higher cumulative incidence of CV comorbidities than the general population, there is no a comprehensive overview of the CV burden in patients with MG[4,5]
- Moreover, recent genetic and biomarker studies suggest systemic inflammation is present in MG and can contribute to CV disease[6-8]
- Therefore, understanding CV comorbidities in patients with MG can help inform monitoring and management considerations as those may be further aggravated by certain MG treatments[9,10]

OBJECTIVE

- Provide a comprehensive overview of the CV comorbidities and CV risk factors in adults living with MG in the US

METHODS

- This retrospective cohort study used the anonymized Optum® Market Clarity claims dataset to characterize the prevalence of CV risk factors and CV comorbidities in adults with MG
- Adult patients (aged ≥18 years) with ≥2 MG-related claims via ICD-9 or ICD-10 codes[a] and who had continuous insurance enrollment during the 2-year assessment period from 1/1/2022 to 12/31/2023 were identified (N=4758)
- Subgroup analyses based on demographic factors (eg, age) were performed



[a]ICD-9 codes included 358.0, 358.00, and 358.01, and ICD-10 codes included G70.0, G70.00, G70.01.

RESULTS

TABLE 1. Baseline Demographics and Characteristics of Patients With MG

	Overall (N=4758)
Age, years, mean (SD)	63.4 (15.6)
Age category, years, n (%)	
18-40	464 (9)
41-65	1938 (41)
>65	2356 (50)
Sex, n (%)	
Female	2537 (53)
Male	2221 (47)
Charlson Comorbidity Index (CCI), mean (SD)	2.90 (2.97)
0, n (%)	1023 (21)
1-2, n (%)	1670 (35)
3-4, n (%)	985 (21)
≥5, n (%)	1080 (23)
Coexisting non-MG autoimmune condition, n (%)	1581 (33)
Non-MG hospitalizations, n (%)	1241 (26)

- Baseline demographics and characteristics were consistent with other real-world studies[11,12]

FIGURE 1. Prevalence of CV Risk Factors and CV Comorbidities in Patients With MG (N=4758)

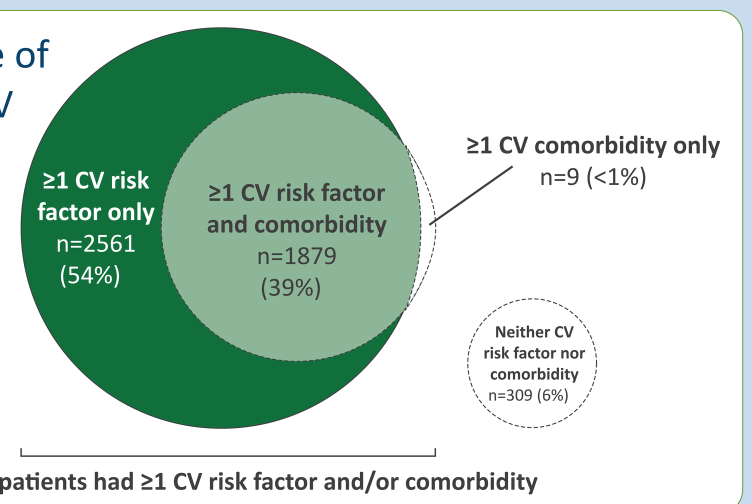


FIGURE 2. Prevalence of CV Risk Factors and CV Comorbidities in Patients With MG

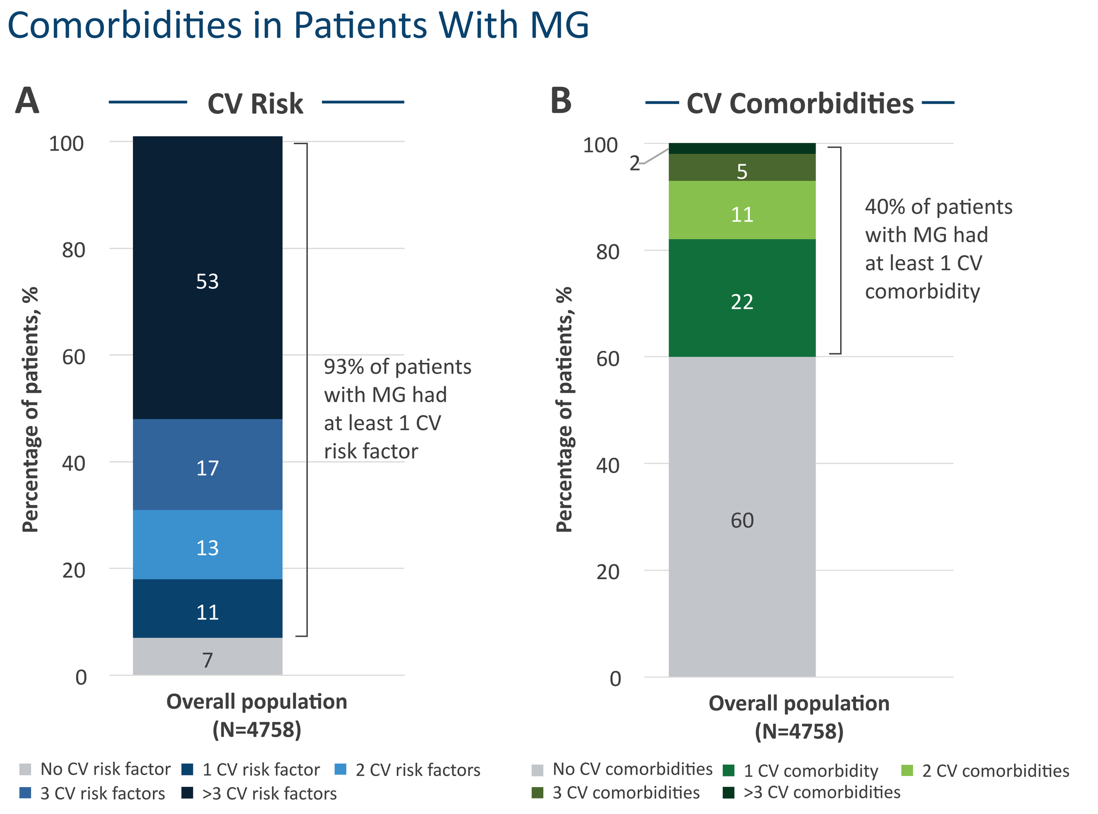
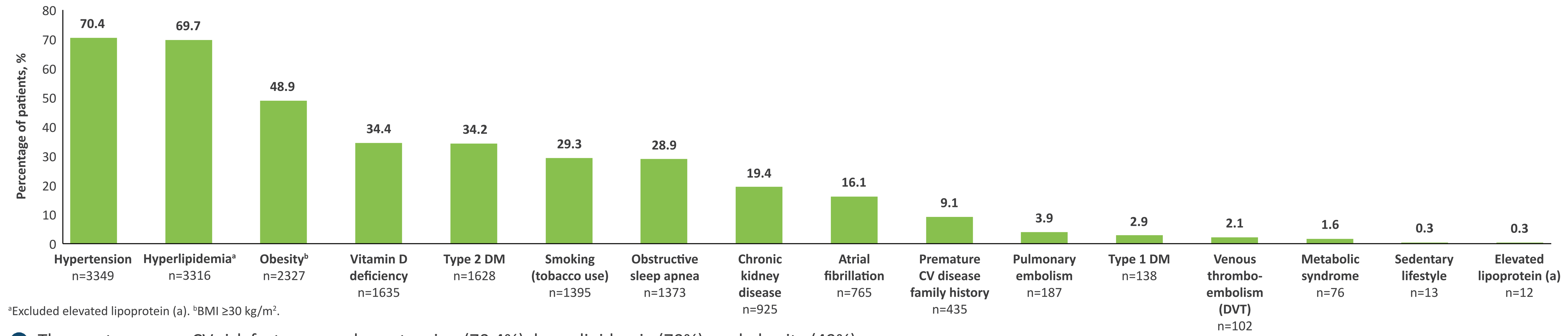


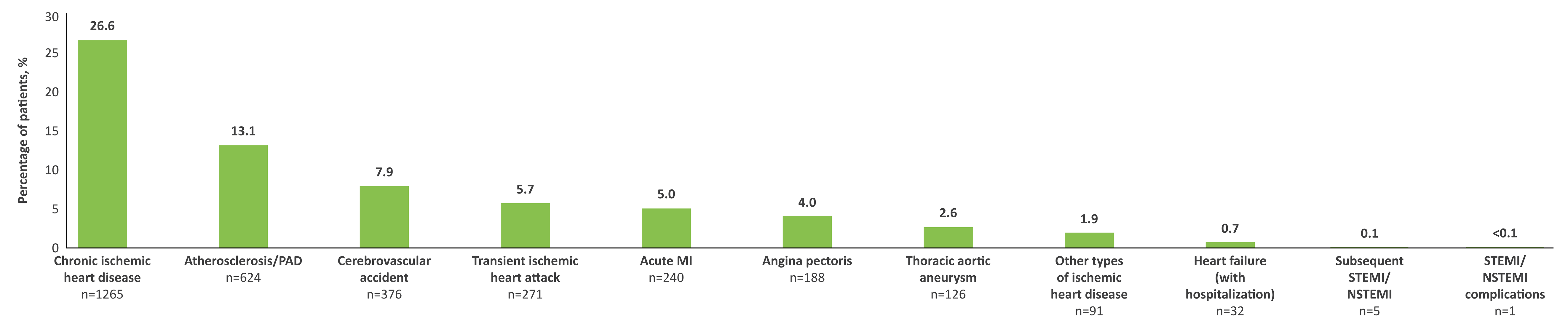
FIGURE 3. Prevalence of CV Risk Factors Among Patients With MG (N=4758)



[a]Excluded elevated lipoprotein (a). [b]BMI ≥30 kg/m².

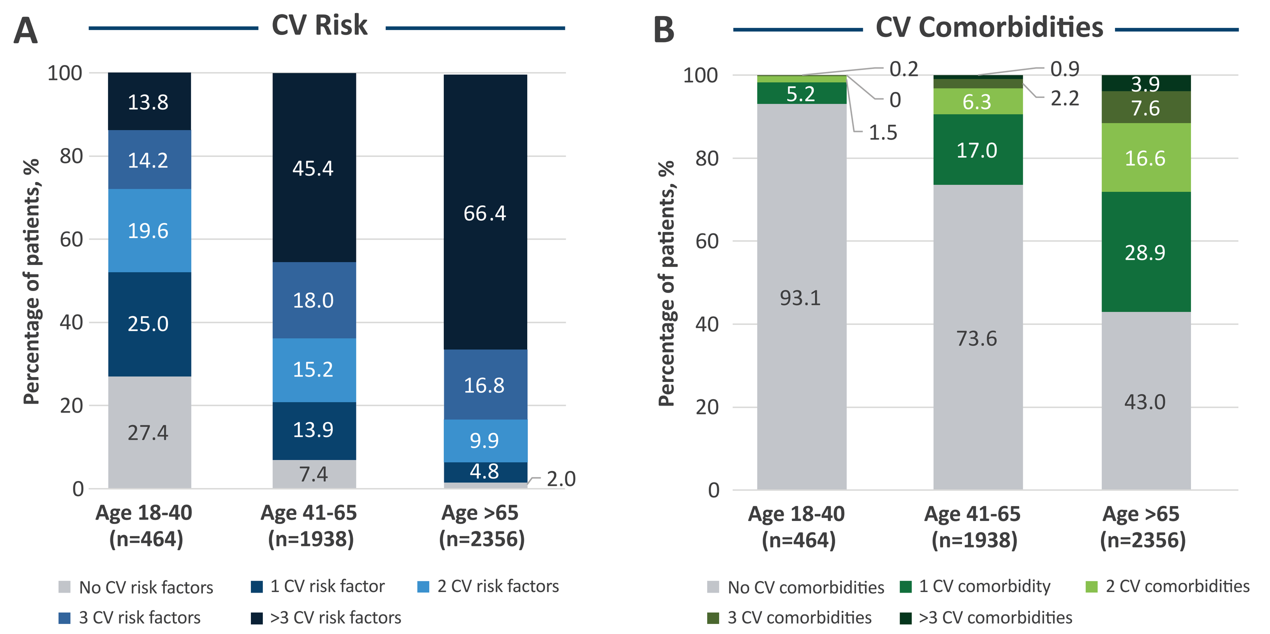
- The most common CV risk factors were hypertension (70.4%), hyperlipidemia (70%), and obesity (49%)

FIGURE 4. Prevalence of CV Comorbidities Among Patients With MG (N=4758)



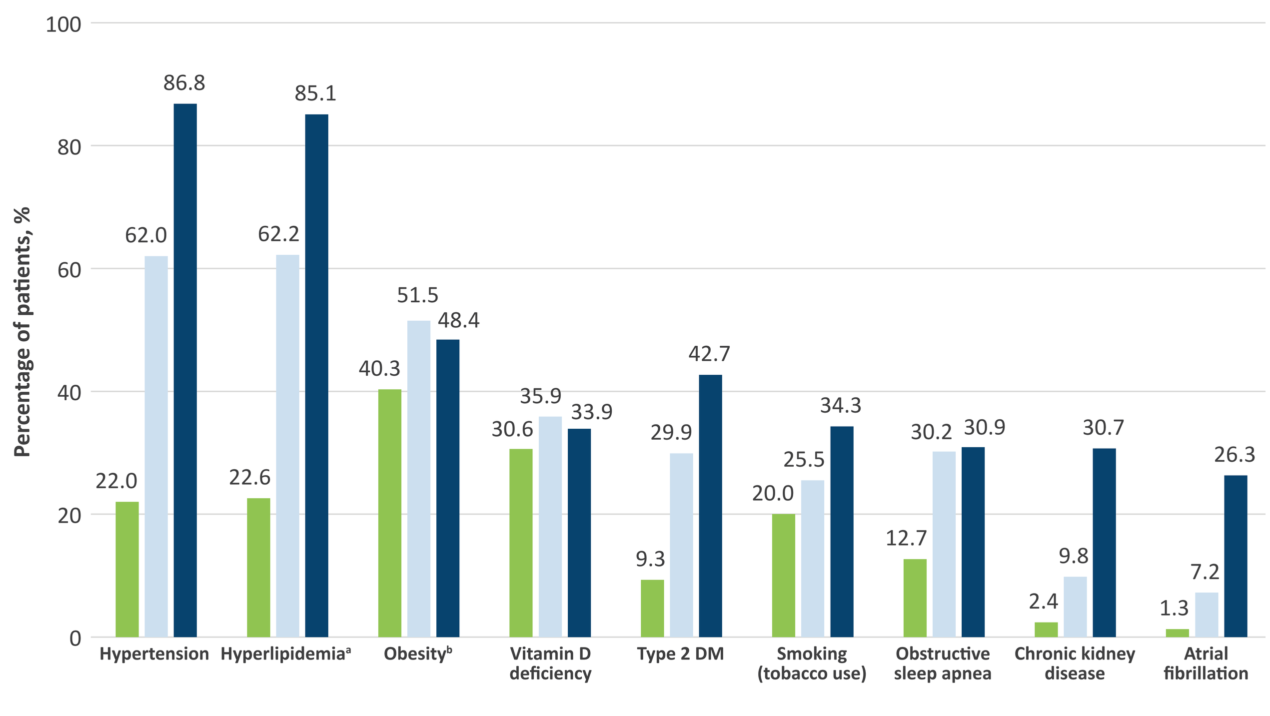
- The most common CV comorbidities were chronic ischemic heart disease (27%) and coronary atherosclerosis (13%)

FIGURE 5. Number of CV Risk Factors and CV Comorbidities by Age



- A consistent increase in CV comorbidity prevalence was seen from the younger to older age groups
  - Less than 1 in 10 patients in the 18 to 40 age group had any CV comorbidity, while greater than half of the patients in the >65 age group had at least 1 CV comorbidity

FIGURE 6. Most Common CV Risk Factors (≥10% Prevalence) Among Patients With MG by Age



[a]Excluded elevated lipoprotein (a). [b]BMI ≥30 kg/m².

SUMMARY

- Patients with MG have considerable CV disease burden; most common CV risk factors were hypertension (70%) and hyperlipidemia (70%), and most common CV comorbidities were chronic ischemic heart disease (27%) and coronary atherosclerosis (13%)
- As expected, CV risk factors tend to drive CV comorbidities as evidenced by the fact that most patients with MG who had ≥1 CV comorbidity also had the presence of at least 1 CV risk factor
- Prevalence of CV risk factors was high in adult MG patients at all ages; prevalence of CV comorbidities was high in middle-aged MG and further increased with age
- These findings support the need for aggressive CV risk factor management to minimize subsequent CV comorbidity in patients with MG (including caution with use of MG treatments that may exacerbate dyslipidemia)

PRESENTED AT MYASTHENIA GRAVIS FOUNDATION OF AMERICA (MGFA) SCIENTIFIC SESSION AT THE AMERICAN ASSOCIATION OF NEUROMUSCULAR & ELECTRODIAGNOSTIC MEDICINE (AANEM) ANNUAL MEETING; OCTOBER 29, 2025; SAN FRANCISCO, CA

ABBREVIATIONS

CV, cardiovascular; **DM**, diabetes mellitus; **DVT**, deep vein thrombosis; **ICD**, *International Classification of Diseases*; **MG**, myasthenia gravis; **MI**, myocardial infarction; **NSTEMI**, non-ST elevation myocardial infarction; **PAD**, peripheral arterial disease; **STEMI**, ST-elevation myocardial infarction.

DISCLOSURES AND ACKNOWLEDGMENTS

KH, **JP**, **CB**, **CQ**, and **AS**: argenx. **CW** and **RM**: ZS Associates. **EB**: Regeneron, Amgen, Chiesi, Ionis, Madrigal, 89bio, argenx, Arrowhead, Chiesi, GSK, and Immunovant. Medical writing and editorial support for this presentation was provided by Precision AQ and funded by argenx.

REFERENCES

1. Conti-Fine BM, et al. *J Clin Invest*. 2006;116:2843-2854. **2.** Behin A, Le Panse R. *J Neuromuscul Dis*. 2018;5:265-277. **3.** Grob D, et al. *Muscle Nerve*. 2008;37:141-149. **4.** Qi CQ, et al. Presented at: The Professional Society for Health Economics and Outcomes Research (ISPOR); May 5-8, 2024; Atlanta, GA. **5.** Tahir S, et al. *Neuromuscul Disord*. 2024;43:10441. **6.** Ruiter AM, et al. *Neurol Neuroimmunol Neuroinflamm*. 2025;12(6):e200468. **7.** Huda R. *Front Immunol*. 2023;14:1110499. **8.** Mensah GA, et al. *J Am Coll Cardiol*. 2025:S0735-1097(25)07555-2. **9.** Liu C, et al. *Neurol India*. 2017;65(3):518-524. **10.** Harris L, et al. *BMC Neurol*. 2022;22(1):172. **11.** Goyal N, et al. Presented at: the American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) Annual Meeting; October 15-18, 2024; Savannah, Georgia. **12.** Podhorna J, et al. Presented at: Neuromuscular Study Group (NMSG) Annual Scientific Meeting; September 26-28, 2025; Stresa, Italy.

SCAN ME