

Clinical Burden in Patients with Hypertrophic Cardiomyopathy by Left Ventricular Outflow Tract Gradient

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BACKGROUND

Data describing associations between LVOT gradient severity and cardiovascular outcomes in HCM are limited. We compared clinical outcomes across four hemodynamic cohorts in a real-world population of patients with HCM.



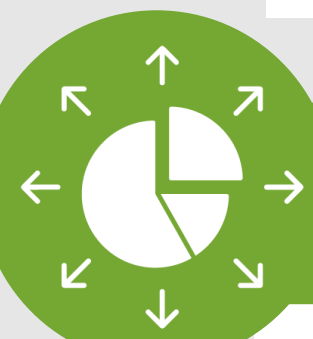
METHODS

Study Design: Retrospective cohort study of HCM patients (2016 - 2024) using Optum's electronic medical record and claims database.

Patient Selection Criteria: Eligible patients had ≥ 1 ICD-10 HCM claim (I42.1 or I42.2) with either ≥ 1 LVOT measurement or ≥ 1 septal reduction therapy (SRT) claim, or SRT alone, and were followed from index until death, plan disenrollment, or study end (index = first claim).

Study Outcomes: New onset of all-cause mortality, heart failure hospitalization, heart failure, atrial fibrillation, ventricular tachycardia/fibrillation.

Statistical: Kaplan–Meier analysis with comparisons assessed using log-rank test.



RESULTS

- During follow-up, nHCM patients had the highest cumulative incidence of all-cause mortality (Figure 1; $p < 0.001$).
- Patients undergoing SRT experienced the highest cumulative incidence of heart failure hospitalization, heart failure, and atrial fibrillation (Figure 2), as well as ventricular tachycardia/ fibrillation (all $p < 0.001$).
- Limitations:** This study utilized ICD-10 coding for disease identification, outcomes, and may be subject to inconsistencies. Findings are based on unadjusted analyses; multivariate analyses are currently underway.

KEY FINDINGS

(LVOT < 30 mm Hg)
(N=1,739)



nHCM

Dyspnea: 72%
Fatigue: 51%
Syncope: 46%
Chest Pain: 30%
Palpitations: 58%

(LVOT 30-49 mm Hg)
(N=246)



Mild /
Moderate
oHCM

Dyspnea: 57%
Fatigue: 37%
Syncope: 32%
Chest Pain: 25%
Palpitations: 41%

(LVOT ≥ 50 mm Hg)
(N=676)



Severe
oHCM

Dyspnea: 55%
Fatigue: 34%
Syncope: 31%
Chest Pain: 22%
Palpitations: 40%

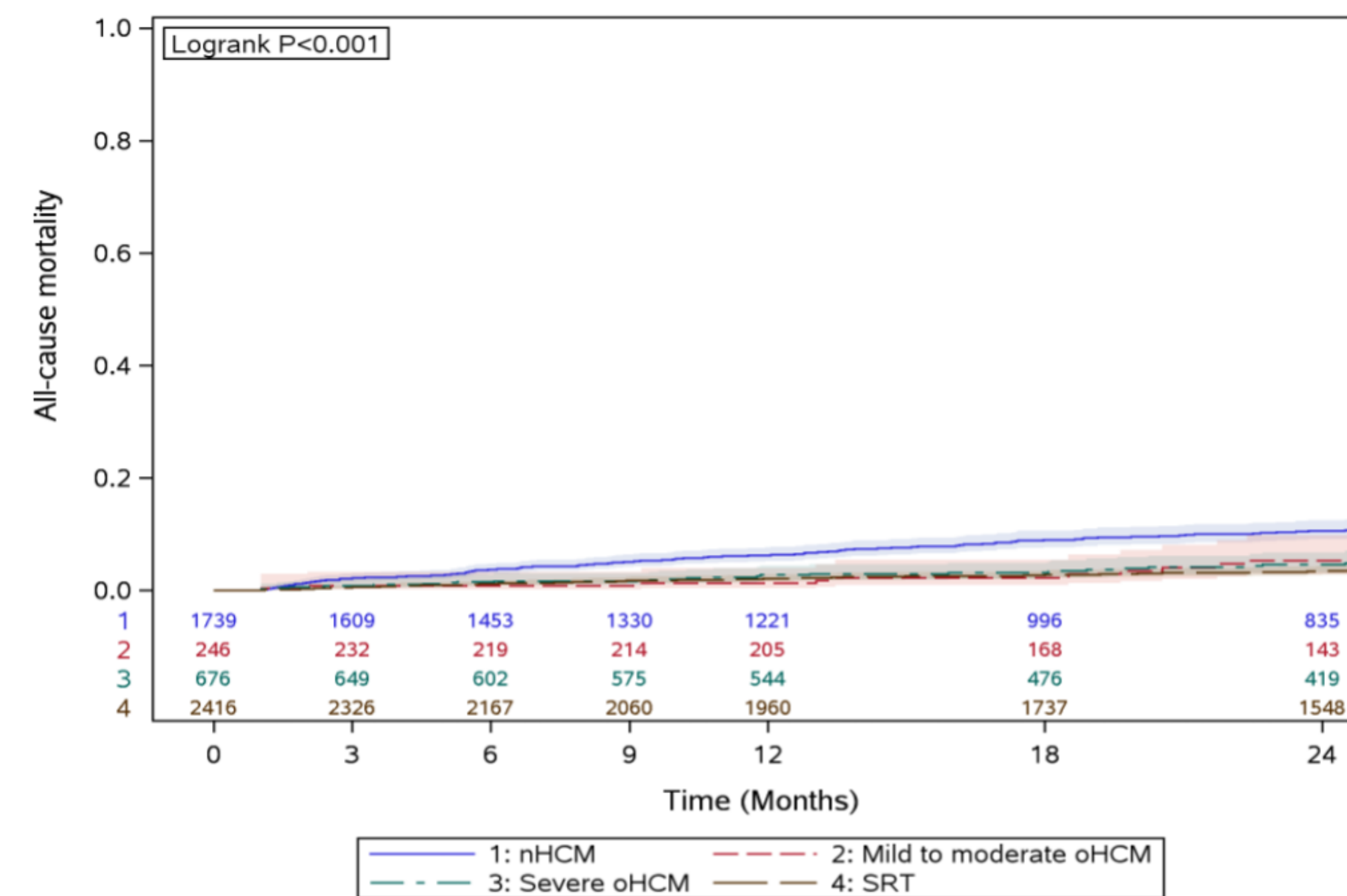
(Procedure claim for SRT)
(N=2,416)



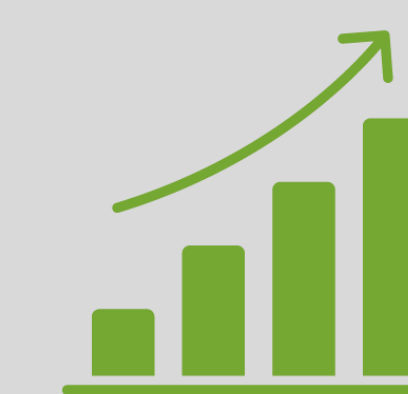
SRT

Dyspnea: 46%
Fatigue: 21%
Syncope: 15%
Chest Pain: 30%
Palpitations: 22%

Figure 1. All-Cause Mortality by HCM Phenotype



Distinct risk profiles were observed across LVOT-defined HCM phenotypes.



Patients with nHCM had the highest risk of all-cause mortality.

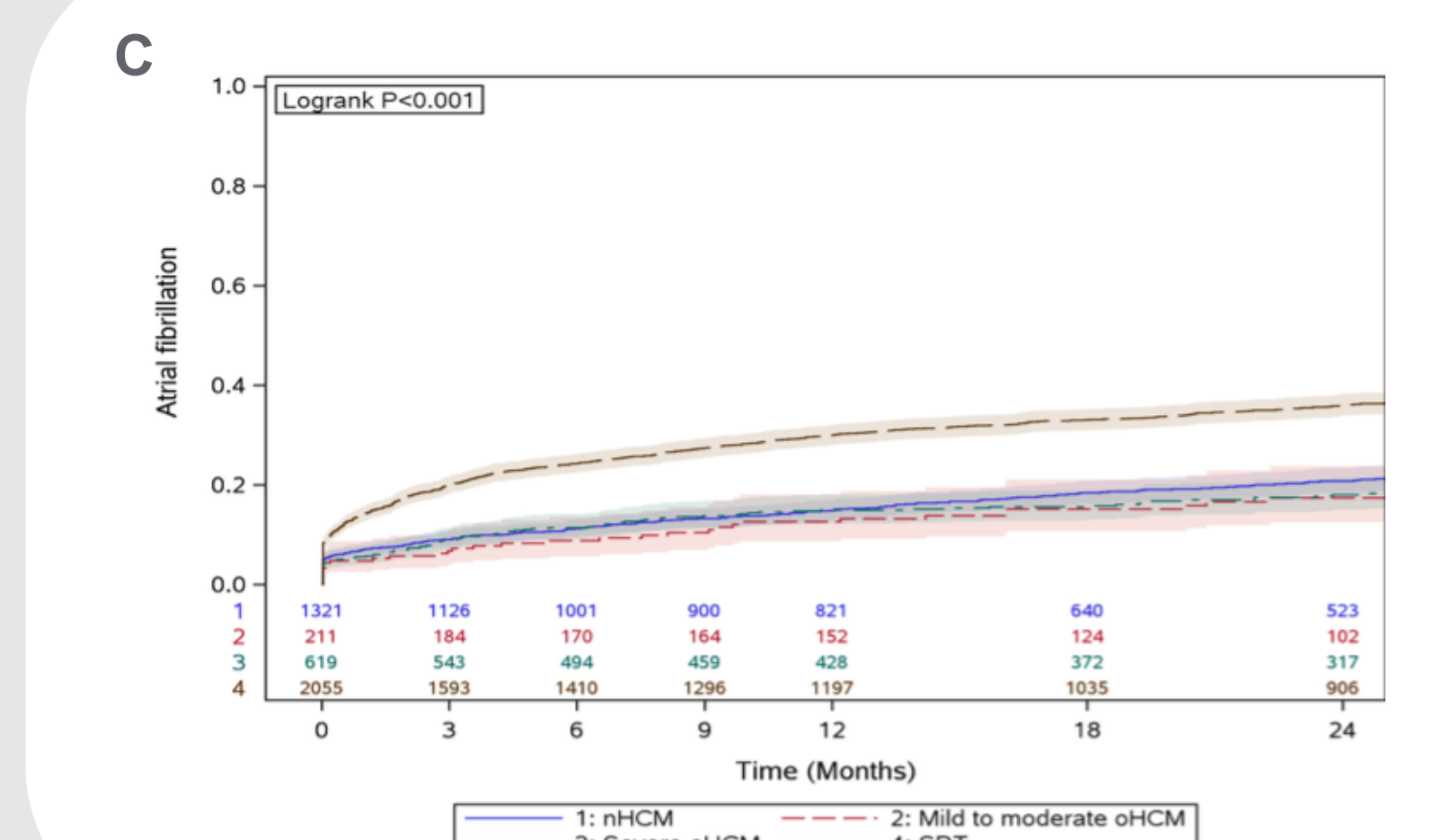
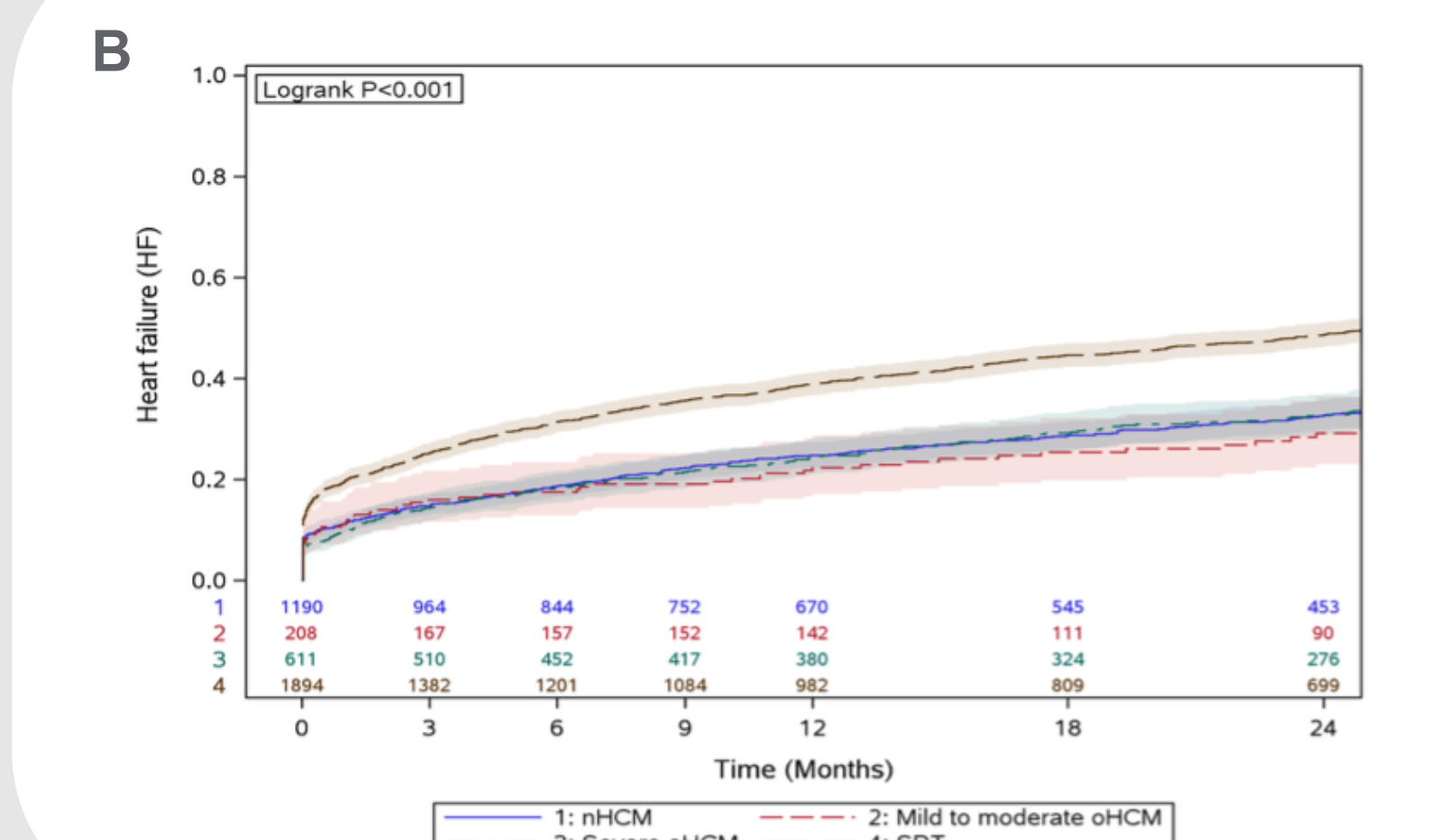
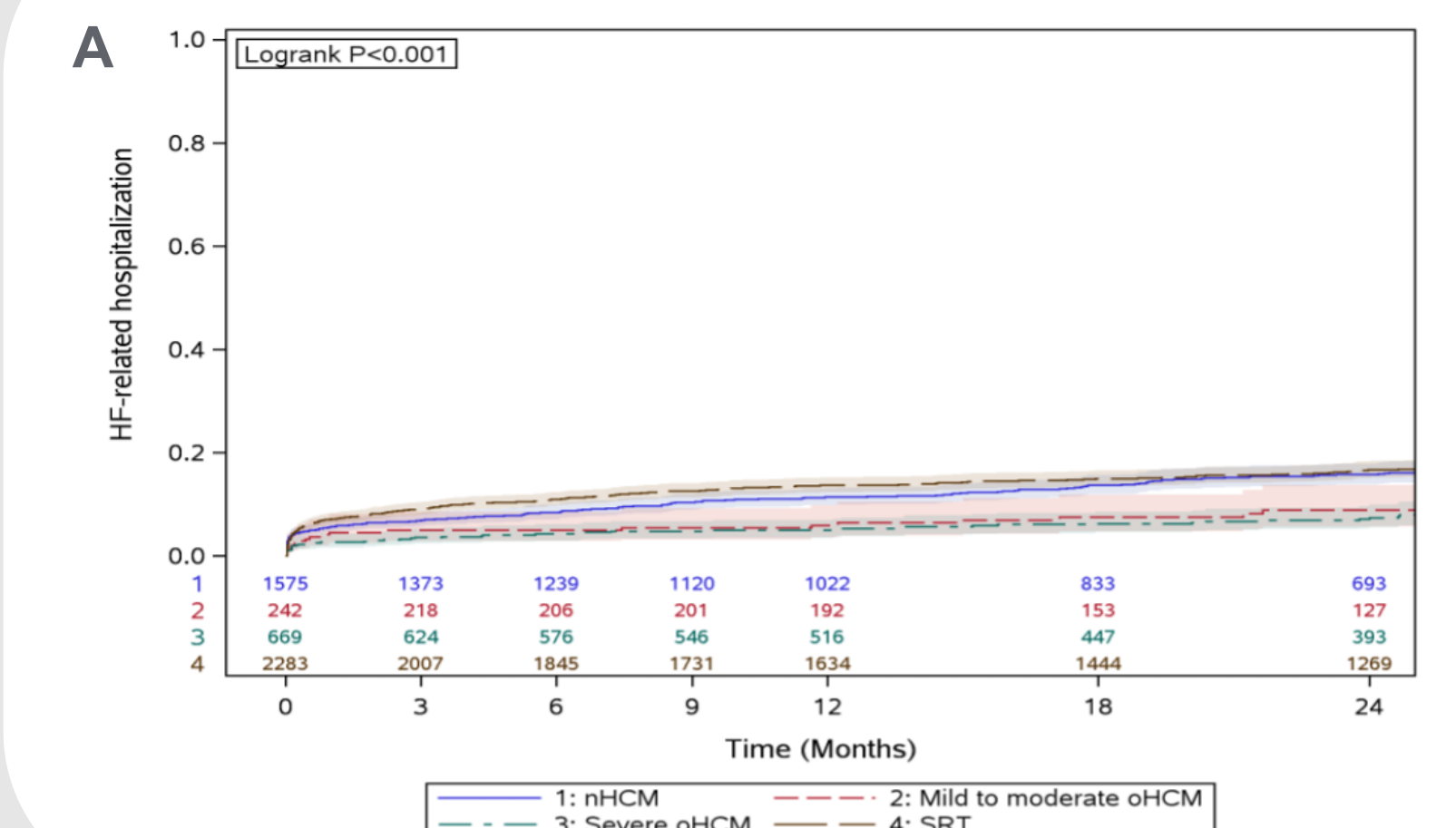


Patients undergoing SRT experienced the greatest burden of cardiac arrhythmias and heart failure.

Conclusion

These findings establish nHCM, mild/moderate oHCM, severe oHCM, and SRT as distinct HCM health states associated with differences in disease burden and management.

Figure 2. Time to A) Heart Failure Hospitalization, B) Heart Failure, and C) Atrial Fibrillation by HCM Phenotype



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