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Trends and Disparities in Cardiac Magnetic Resonance Utilization During Index Hospitalization for Myocarditis (2015–2025)

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Background

- Cardiac magnetic resonance (CMR) plays a central role in the diagnosis and risk stratification of myocarditis.¹⁻²
- Real-world utilization of CMR during index hospitalization remains incompletely characterized at a national level.
- Understanding patterns of use is particularly relevant given potential variation in access to advanced imaging¹⁻³ as well as the influence of clinical factors on imaging decisions.

Study Aim

To evaluate temporal trends and variation in CMR utilization among patients hospitalized with myocarditis in a large, multicenter electronic health record (EHR) database.

Methods

- Retrospective cohort study using Epic Cosmos.⁴
- Patients with index hospitalization for myocarditis (defined by billed ICD-10 codes) in the U.S. between 2015 and 2025.
- CMR during index hospitalization identified using billed procedure codes.
- Temporal trends in CMR utilization assessed using logistic regression.
- Subgroup variation (age, sex, race, ethnicity, insurance status, social vulnerability index [SVI], and ICU admission) assessed using chi-square testing.

CMR Use and Subgroup Variation

Overall Use

- CMR performed in **27.5%** of 62,027 index hospitalizations

Sex (p<0.001)

- Male: 28.3%
- Female: 25.9%

Age (p<0.001)

- <18: 30.7%
- 18-29: 35.0%**
- 30-50: 28.9%
- >50: 22.5%

Race (p=0.007)

- White: 27.4%
- Black: 27.0%
- Asian: 25.7%
- Other: 28.7%

Ethnicity (p=0.799)

- Hispanic: 27.2%
- Non-Hispanic: 27.1%

Social Vulnerability Index (SVI) (p<0.001)

- <25%: 30.4%**
- 25-49.9%: 27.8%
- 50-74.9%: 26.9%
- ≥75%: 25.1%

Insurance (p<0.001)

- Private: 33.0%**
- Medicaid: 28.6%
- Medicare: 19.5%
- Self-pay: 30.1%

ICU Stay (p<0.001)

- Yes: 25.8%
- No: 28.4%**

Temporal Trends in CMR Use

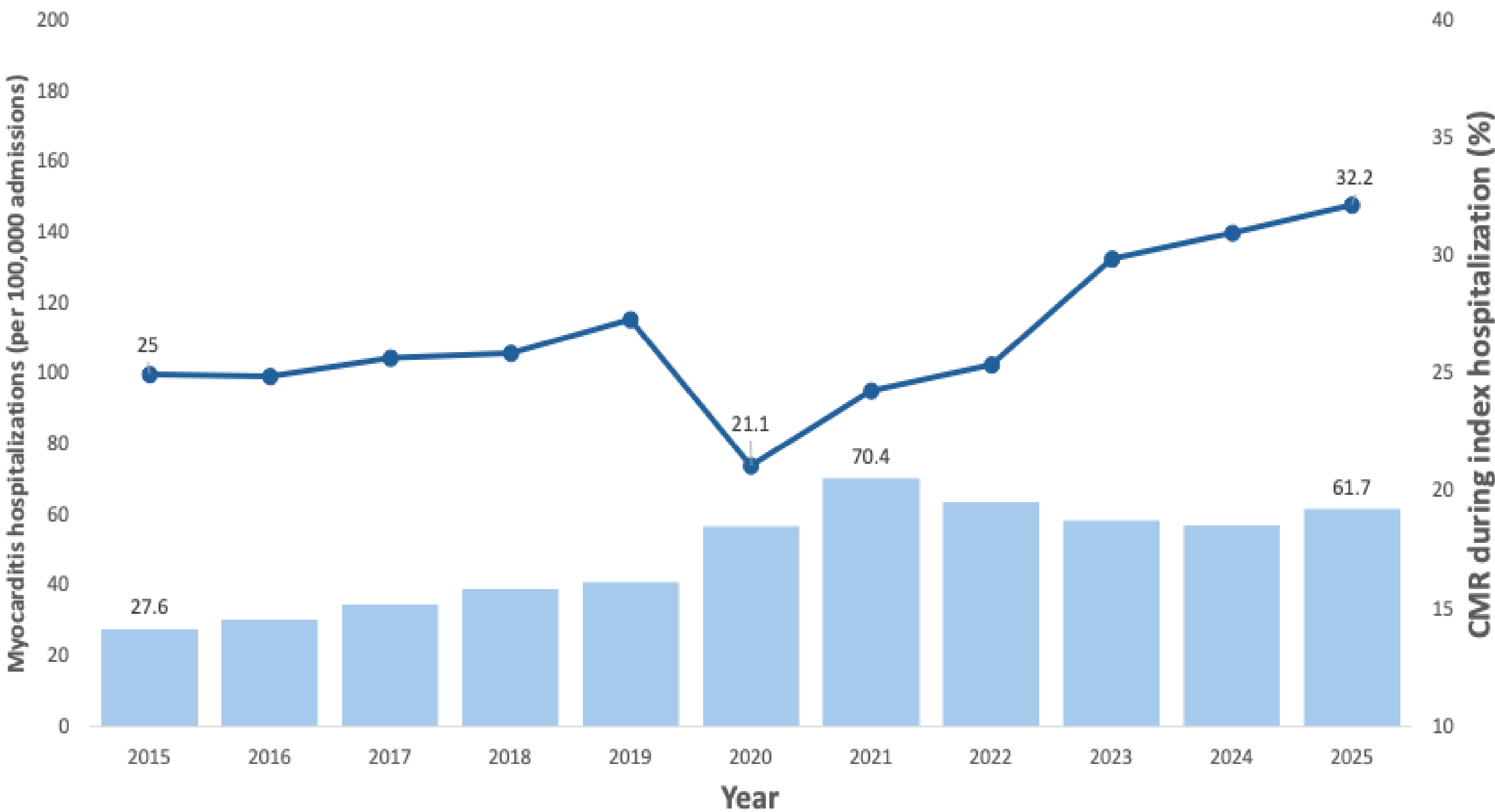


Figure 1. CMR utilization during index hospitalization for myocarditis (line, right axis) and hospitalization rates (bars, left axis), 2015–2025. CMR use increased over time (p<0.001), with a transient decline in 2020.

Conclusions

- Despite increasing use over time, CMR during index hospitalization for myocarditis remains limited.
- Utilization varied across demographic, socioeconomic, and clinical factors, suggesting potential disparities in access to advanced cardiac imaging as well as differences in clinical decision-making.
- These findings highlight the need to better align CMR use with its established clinical value and to improve access to advanced cardiac imaging.

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