

Prescribing adherence to guideline-directed medical therapy for heart failure with reduced ejection fraction

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INTRODUCTION

The European Society of Cardiology Heart Failure with Reduced Ejection Fraction (HFrEF) guideline was updated in August 2021 to include a class 1 recommendation to initiate the following four medications as soon as clinically possible¹.

1. ACEI-inhibitors (ACEI) or Angiotensin receptor-neprilysin inhibitor (ARNI)
2. Heart failure beta blockers (HFBB)
3. Mineralocorticoid receptor antagonists (MRA)
4. Sodium and glucose co-transport 2 inhibitors (SGLT2-i)

For this study, these medications are termed guideline-directed medical therapy (GDMT).

The importance of prescribers adhering to this guideline can be derived from a comparative analysis which found that HFrEF patients treated with an ARNI, HFBB, MRA, SGLT2i had 1.4 (80-year-old) to 6.3 (55-year-old) additional years of survival compared to those treated with ACEI/angiotensin II receptor blocker (ARB) and HFBB².

Previous studies focusing on HFrEF GDMT have discovered a lack of physician adherence to HFrEF guidelines when prescribing.^{3,4} An Australian study observed inadequate documentation of dose titration or reasons why HFrEF medications were not commenced in hospital discharge summaries.⁵ A lack of guidance regarding optimisation of HFrEF therapies to GPs on hospital discharge, may reduce the likelihood that HFrEF medications are continued, commenced or doses optimised in the community. To our knowledge this is the first study to determine prescriber adherence with the current GDMT for HFrEF.

AIM

1. To compare the proportion of patients prescribed guideline-directed medical therapy (GDMT) for HFrEF on hospital discharge between cardiology and general medicine.
2. To determine the accuracy of HFrEF medication documentation between cardiology and general medicine.

METHOD

STUDY DESIGN

A retrospective cross-sectional audit of patients discharged from a tertiary hospital over a 3-month study period from October to December 2021.

STUDY POPULATION

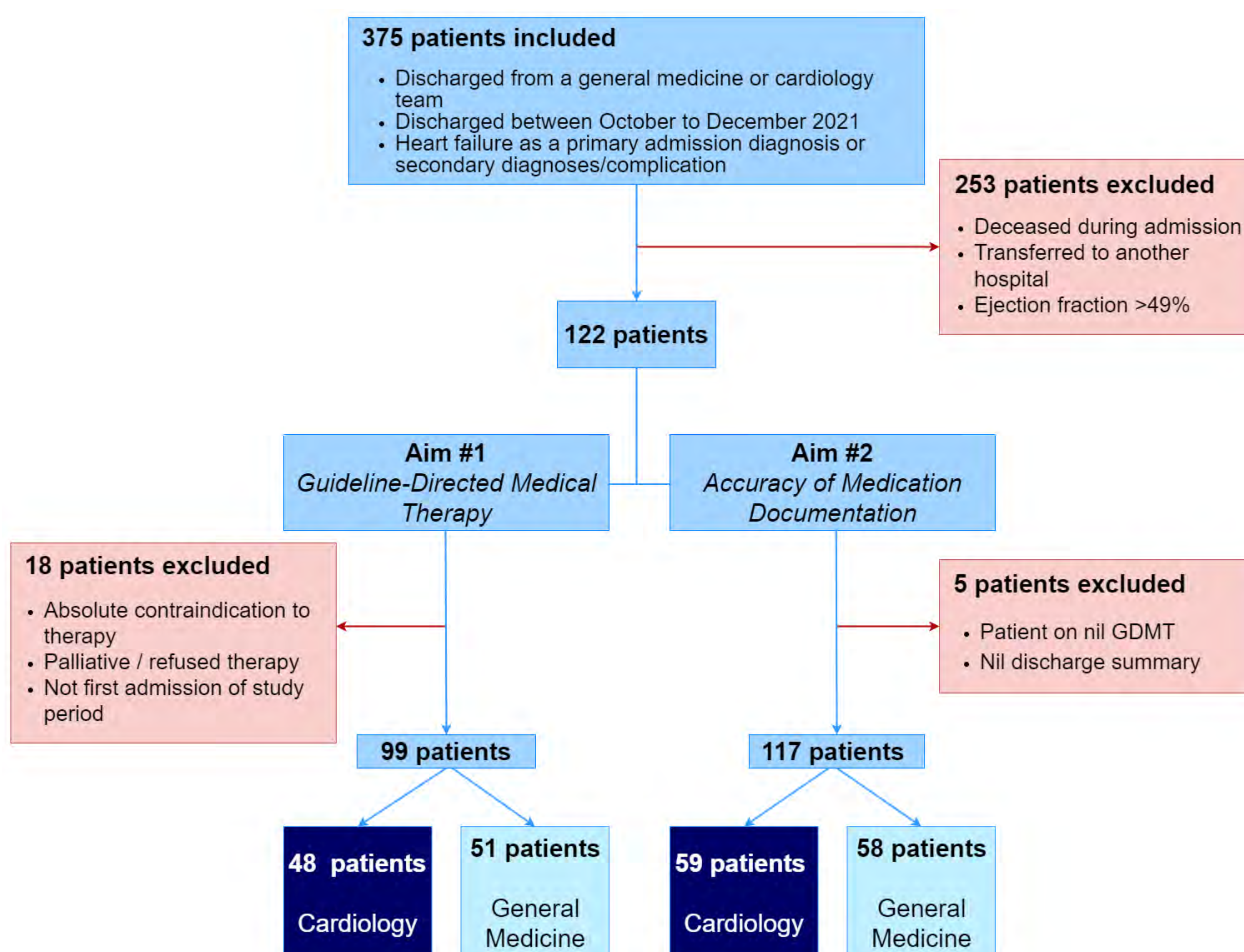


Figure 1: Flow chart of the inclusion & exclusion criteria which determined the study populations

DATA COLLECTION

Data was extracted from the Sunrise electronic medication record system, including patient demographics, clinical observations, discharge medications and the medical discharge summaries were audited for accuracy of medication documentation.

DATA ANALYSIS

Using SPSSv26, the Fisher's Exact test was used to compare prescribing rates of GDMT between medical specialties and the Pearson's chi-squared test was used to compare the accuracy of GDMT documentation in medical discharge summaries. Microsoft Excel was used to generate bar graphs to display the frequency of GDMT prescribing and accurate documentation.

RESULTS

Ninety-nine patients were included to determine prescriber adherence to GDMT for HFrEF. Cardiology patients were more likely to be prescribed all four GDMTs (15% vs. 0%, $p=0.005$) or at least three GDMTs (60% vs. 29%, $p=0.002$) compared to general medicine.

The total number of patients discharged on a Renin Angiotensin Aldosterone System inhibitor (RAASi) including ACEI, ARNI and ARB was 61 (62%), HFBB was 84 (85%), MRA was 63 (64%) and SGLT2i was 8 (8%) (figure 2).

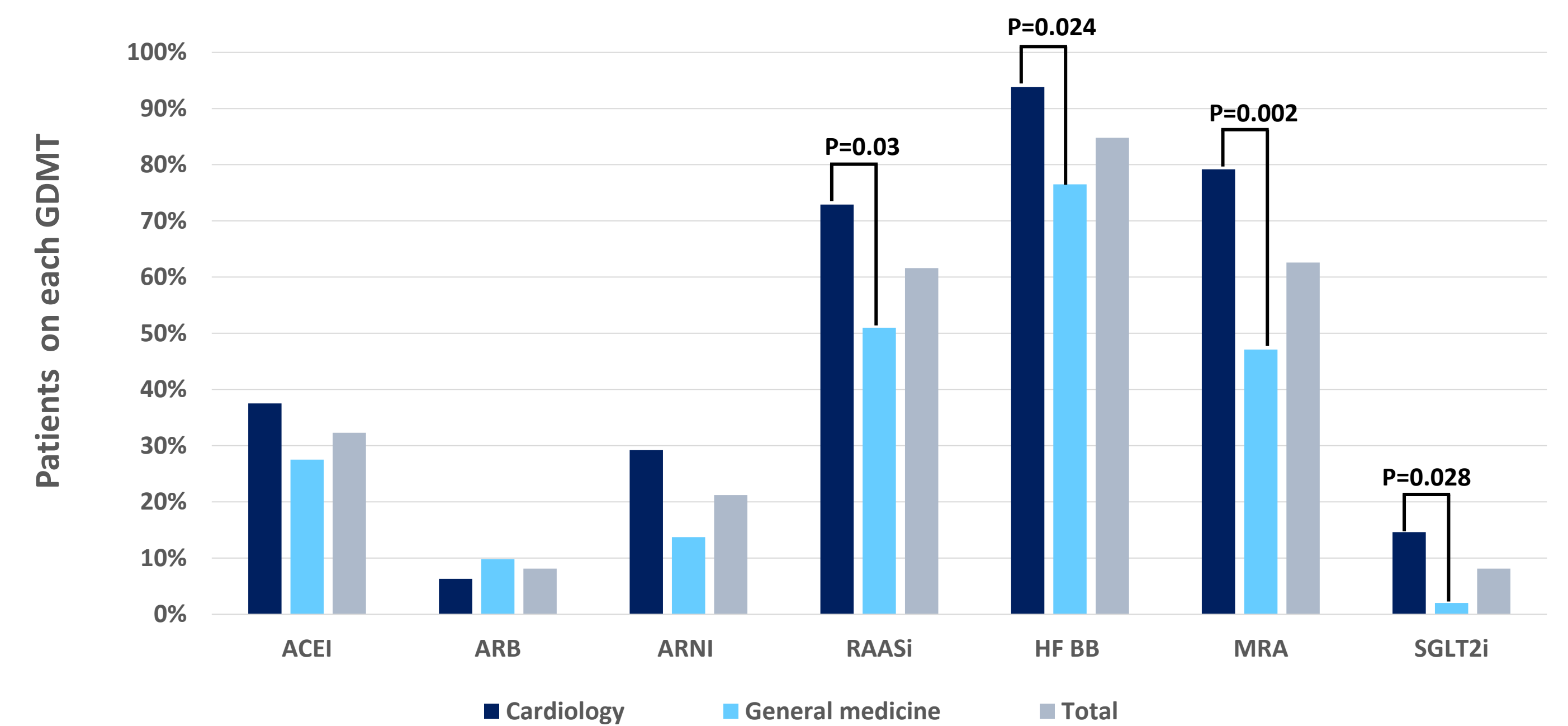


Figure 2: Percentage of patients prescribed each of the GDMT.

For patients admitted on GDMTs, across the cohort of 99 patients, cardiology ceased 8 GDMTs (RAASi = 7, SGLT2i = 1) and general medicine ceased 11 GDMTs (RAASi = 6, HFBB = 2, MRA=3). Cardiology initiated a greater proportion of GDMTs during the patient's admission as compared to general medicine (figure 3).

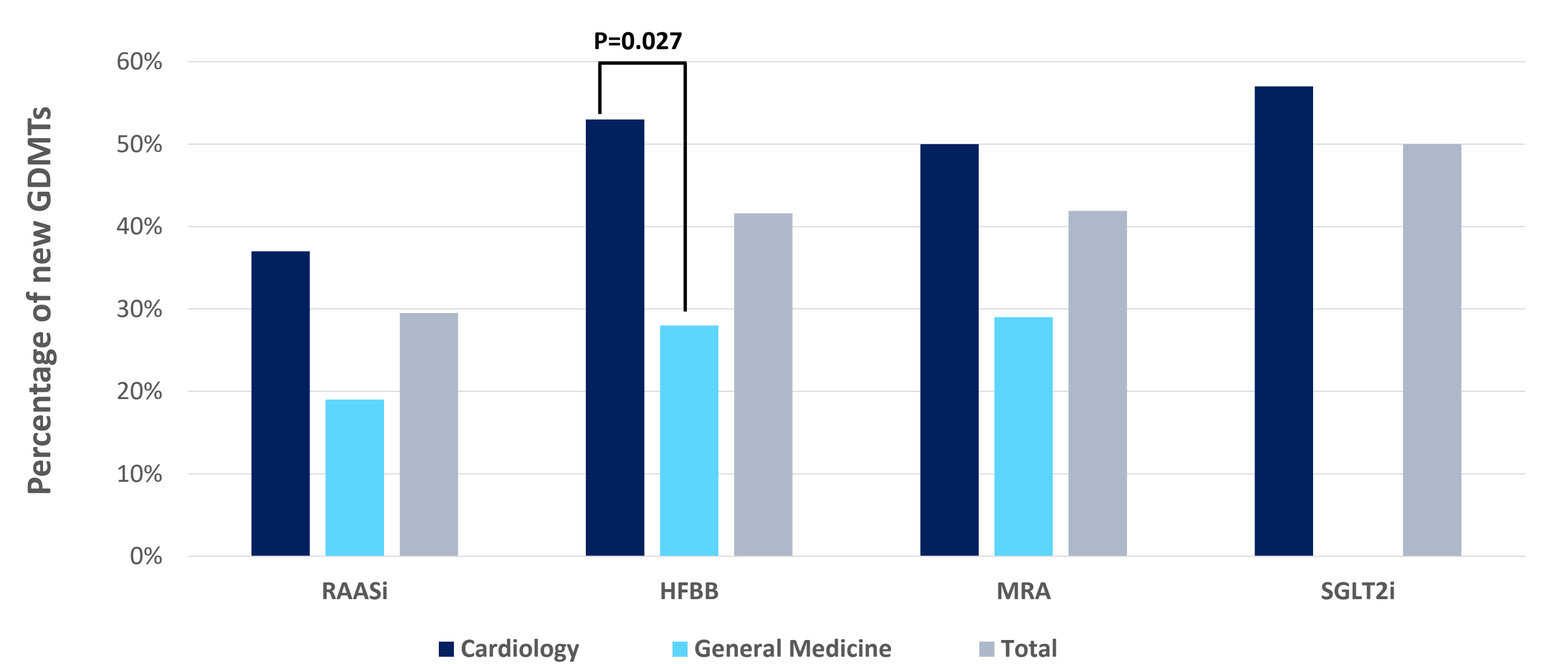


Figure 3: Percentage of each GDMT that was newly initiated in hospital and prescribed on discharge

A discharge summary was considered 100% accurate if the name, dose and frequency of all four GDMTs were documented correctly. There were 117 discharge summaries included to determine the accuracy of medication documentation. Cardiology accurately documented GDMT in 83% of medical discharge summaries as compared to 59% in general medicine ($p=0.004$).

DISCUSSION

The prescribing of HFrEF GDMT on discharge was suboptimal across the cohort and the documentation of GDMT in medical discharge summaries was inadequate. The frequency of use of GDMT in our study was greater than that described in a recent study of heart failure patients discharged from another Australian hospital which identified the prescribing rates of ACEI/ARB, BB and MRA to be 52%, 49% and 15% respectively.⁴ The most significant prescribing increase was for MRAs (64% vs. 15%⁴), followed by BBs (85% vs. 49%⁴).

General medicine patients were less frequently prescribed each of the GDMTs and were less likely to be on at least three of these therapies concurrently. Potential confounding factors contributing this difference in prescribing may include general medicine patients being older and having poorer renal function. In addition, low prescribing rates of SGLT2i may have been attributable to a lack of access via the Pharmaceutical Benefits scheme (PBS) for heart failure during the study period. Therefore, pharmacist-initiated prescriber education, the addition of SGLT2i to the PBS for HFrEF and the release of the Australian consensus statement on the current pharmacological prevention and management of heart failure may improve prescribing⁶.

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