High risk of morbidity and mortality in patients with heart failure and under treatment with evidence-based therapies in the UK

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Declaration of Interest

- Consulting/Royalties/Owner/ Stockholder of a healthcare company (Novartis)

Conflict of Interest

- **This study was supported by Novartis**
- **PSJ, JJVM, GR and MCP all report having received consulting or institutional fees from Novartis**
- **FC, RH and RS are employees of Novartis**

Background

- One in five people will develop heart failure (HF) over their lifetime
- 15 million people currently suffer from HF in Europe
- Frequent admissions to hospital and high rates of death
- A number of therapies have been shown to reduce morbidity and mortality in randomised trials and are recommended by international guidelines
- Such therapies are potentially still underused in practice
- We aimed to describe the management and outcomes of a cohort of community dwelling individuals with HF

Methods

- 14,546 patients with a code for HF
- UK Clinical Practice Research Datalink (CPRD)
- Target daily doses of evidence based therapies (defined by ESC guidelines[1])
  - ACE inhibitors
  - Angiotensin receptor blockers
  - Beta blockers
  - Mineralocorticoid receptor antagonists
- Those receiving a prescription within 25% of target dose were considered as reaching target dose

1. McMurray JJ *et al*. *Eur Heart J.* 2012;33:1787-847

Results

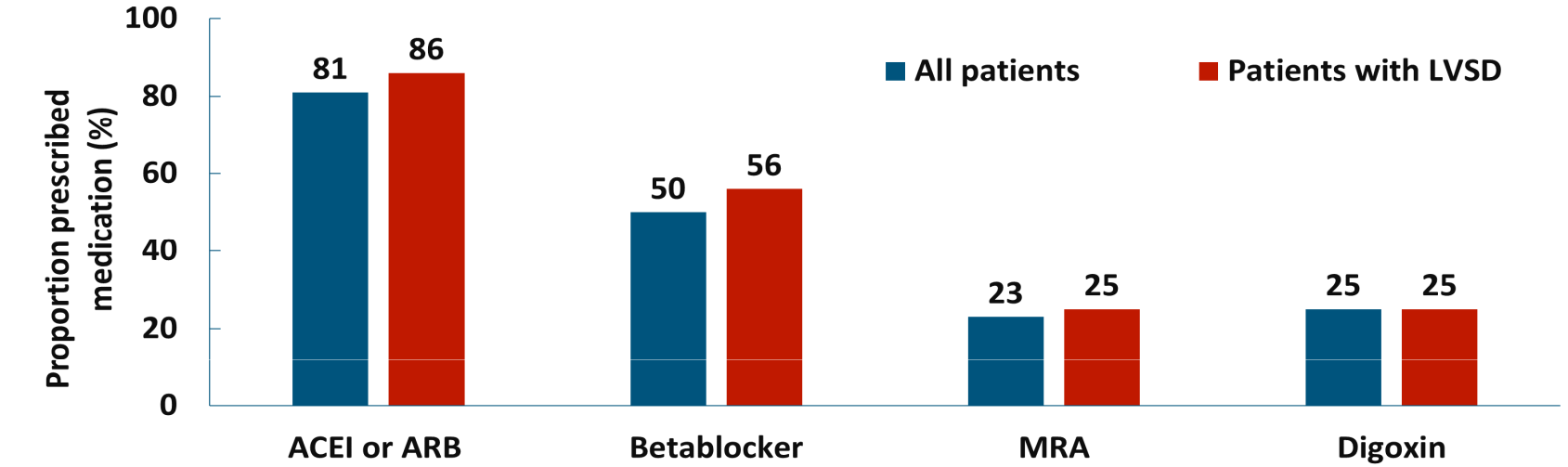
	Mean ± SD or N(%)
Age, (years)	79±1
Women	7046 (48%)
SBP, (mmHg)	131±20
Heart rate, (bpm)	75±15
Estimated GFR, (mL/min/1.73 m^2)	54±32
BMI (kg/m^2)	29±7
NT-proBNP (pg/ml), median (IQR)	1052 (321,2921)
Haemoglobin (g/dL)	13±2
Diabetes	3804 (26%)
Coronary heart disease	7322 (50%)
Hypertension	9367 (64%)
Cerebrovascular disease	2375 (16%)
Atrial fibrillation	5818 (40%)
LVSD confirmed	6398 (44%)
Chronic obstructive pulmonary disease	2214 (15%)
Asthma	2320 (16%)

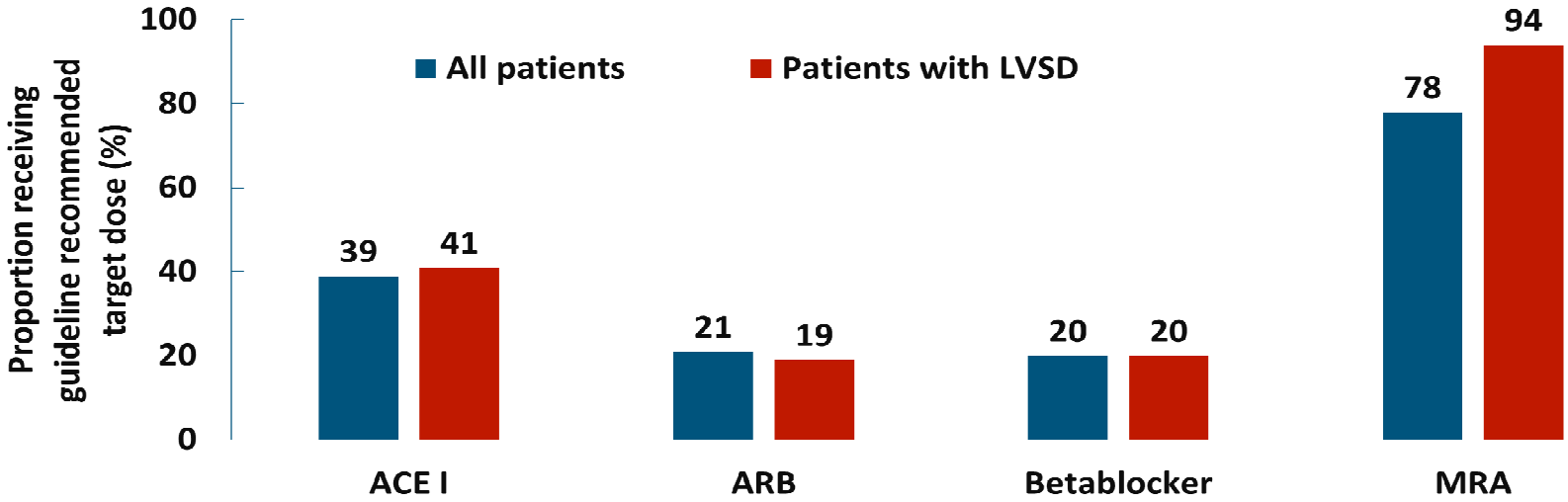
- **Death = 15 per 100 patient years (ptyrs)**
- **Cardiovascular (CV) Hosp = 31 per 100 ptyrs**
- **HF Hosp= 14 per 100 ptyrs**
- **Median length of stay for HF was 8 days (interquartile range 4-16 days)**

- **Non-CV Hosp= 49 per 100 ptyrs**
- **The commonest specified non-CV hospitalisations were:**

  Respiratory = 12 per 100 ptyrs
  Gastrointestinal = 7 per 100 ptyrs

Results


Proportion prescribed medication (%)
100
80
60
40
20
0
All patients
Patients with LVSD
81
86
50
56
23
25
25
25
ACEI or ARB
Betablocker
MRA
Digoxin


Proportion receiving guideline recommended target dose (%)
100
80
60
40
20
0
All patients
Patients with LVSD
39
41
21
19
20
20
78
94
ACE I
ARB
Betablocker
MRA

Conclusions and Implications

- **Patients with HF are at high risk of hospitalisation and death**
- **Despite this risk, the use of evidence-based, guideline recommended, therapies is low**
- **Drugs are prescribed at suboptimal doses**
- **We must understand why prescribing rates are low if we are to ultimately improve morbidity and mortality in patients with HF**