

<sup>24</sup> Department of Cardiology, Martini Hospital Groningen, The Netherlands/Department of Cardiology, University Medical Center Groningen, Groningen, The Netherlands

<sup>25</sup> Preventive Cardiology and Preventive Medicine/Center for Cardiology/Center for Translational Vascular Biology (CTVB)/Center for Thrombosis and Hemostasis, University Medical Center of the Johannes Gutenberg-University Mainz/DZHK (German Center for Cardiovascular Research), Partner Site RhineMain, Mainz, Germany

<sup>26</sup> Division of Cardiology, Department of Medicine and Therapeutics, The Chinese University of Hong Kong/Prince of Wales Hospital, Hong Kong SAR, China

**Background:** International guidelines recommend atrial fibrillation (AF) screening for people aged  $\geq 65$  years. The stroke risk profile and eligibility for oral anticoagulation (OAC) of screen-detected AF is uncertain. We aimed to determine incidence, stroke risk (CHA<sub>2</sub>DS<sub>2</sub>-VASc), and OAC eligibility of screen-detected AF, in 5-year subgroups.

**Methods:** Database search identified 23 AF screening studies since 2007. Authors were contacted for collaboration. We combined data for 15 studies (13 countries), in general practitioner/outpatient clinics (n = 7) and community/population screening (n = 8).

**Results:** Overall 100,874 subjects were screened. New AF incidence was 1.3% (n = 1296/100,874) and 1.7% for those  $\geq 65$  years (n = 1123/66,166). AF incidence and CHA<sub>2</sub>DS<sub>2</sub>-VASc score increased with age (Table). One hundred per cent of new AF in those aged  $\geq 75$  years and 63–67% between those aged 65–74 years had a Class-1 OAC recommendation (Table). Importantly, 63–81% of those over 65 years had  $\geq 1$  additional stroke risk factor other than age/sex (Table).

**Conclusions:** Screening people aged  $\geq 65$  years identifies new AF in 1.7%; the majority would benefit from OAC; and 2/3 have at least one additional stroke risk factor other than age/sex. Our data support recommendations for AF screening commencing at age 65.

0026

### Long-Term Mortality Following Acute Myocardial Infarction in Australia and New Zealand: a Population-Wide Study



B. Nadlacki<sup>1,2,\*</sup>, D. Horton<sup>2,3,4</sup>, C. Labroschiano<sup>2,5</sup>, S. Hossain<sup>2,5</sup>, S. Hariharaputhiran<sup>2,5</sup>, B. Aliprandi-Costa<sup>6</sup>, R. Adams<sup>5,7</sup>, R. Visvanathan<sup>5,7</sup>, I. Ranasinghe<sup>2,5,7</sup>

<sup>1</sup> College of Medicine and Public Health, Flinders University, Adelaide, Australia

<sup>2</sup> Basil Hetzel Institute, Adelaide, Australia

<sup>3</sup> University of South Australia, Adelaide, Australia

<sup>4</sup> Data to Decisions Cooperative Research Centers, Adelaide, Australia

<sup>5</sup> Faculty of Health and Medical Sciences, Adelaide University, Adelaide, Australia

<sup>6</sup> Cancer Institute NSW, Sydney, Australia

<sup>7</sup> Central Adelaide Local Health Network, Adelaide, Australia

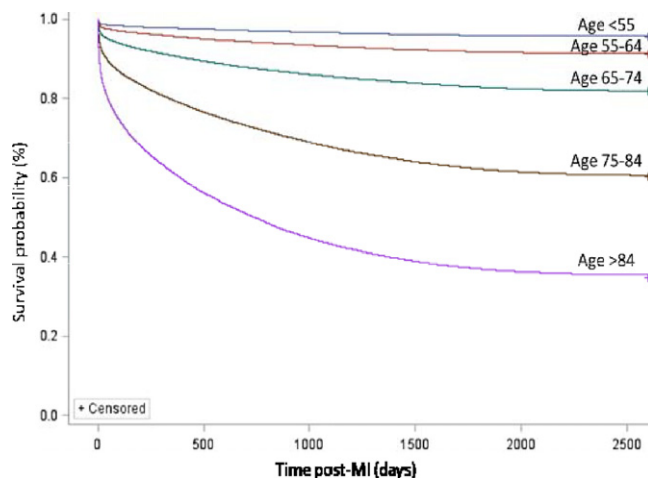
**Background:** Acute myocardial infarction (AMI) care has undergone tremendous advances over the last decade, yet there are no population studies of long-term survival in the contemporary era. We assessed long-term mortality following an AMI in Australia and New Zealand (ANZ).

**Methods:** We identified all hospitalisations for a primary diagnosis of AMI (ICD10-AM codes I21.0-9) from ANZ (except Northern Territory, where data was unavailable) from 2008 to 2014. All-cause mortality up to 7 years post-AMI was assessed by linkage to Death Registry data. Cox regression was used to identify factors independently associated with survival.

**Results:** We included 243,411 patients with AMI (69  $\pm$  14 years, 65% male). By 7 years, 61,167 (25%) of these patients had died, with the risk highest immediately after the AMI and

Age (years)	New AF (%)	CHA <sub>2</sub> DS <sub>2</sub> -VASc (mean $\pm$ SD)	$\geq 1$ non-age/sex stroke risk-factor (%)	Guideline recommendation		
				No OAC (%)	Consider OAC (%)	Prescribe OAC (Class-1) (%)
<60	0.2	0.7 $\pm$ 0.7	18	80	15	5
60–64	0.8	1.2 $\pm$ 0.9	48	51	33	16
65–69	1.1	2.4 $\pm$ 1.7	63	0	37	63
70–74	1.5	2.6 $\pm$ 1.3	64	0	33	67
75–79	2.0	3.7 $\pm$ 1.2	74	0	0	100
80–84	2.5	3.7 $\pm$ 1.3	69	0	0	100
85+	3.1	4.2 $\pm$ 1.4	81	0	0	100

plateauing by 7 years. Seven-year survival varied from 96% for in those aged <55 years to 39% in those >84 years (Figure). The cardiovascular comorbidities strongly associated with increased long-term mortality were heart failure (hazard ratio [HR] 1.81, 95% confidence interval [CI] 1.77–1.84), cerebrovascular disease (HR 1.83, 95% CI 1.47–2.29), and diabetes with complications (HR 1.22, 95% CI 1.18–1.26). In contrast, patients who were revascularised with percutaneous coronary intervention (HR 0.90, 95% CI 0.85–0.96) or coronary artery bypass grafting (HR 0.63, 95% CI 0.53–0.75) in the year preceding the AMI admission showed improved long-term survival.



**Conclusions:** This study, for the first time, provides population-wide data on the long-term prognosis after an AMI in ANZ. Further efforts to improve survival need to target the elderly who have the greatest risk.

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### Heart Failure Prize Finalists (0027–0030)

0027

#### Impaired Left Atrial Strain Predicts Abnormal Haemodynamics in Heart Failure with Preserved Ejection Fraction

F. Telles<sup>1,\*</sup>, S. Nanayakkara<sup>1,2</sup>, S. Evans<sup>2</sup>, D. Vizi<sup>2</sup>, J. William<sup>1</sup>, T. Marwick<sup>1</sup>, D. Kaye<sup>1,2</sup>

<sup>1</sup> Baker IDI Heart and Diabetes Institute, Melbourne, Australia

<sup>2</sup> The Alfred Hospital, Department of Cardiovascular Medicine, Melbourne, Australia

**Introduction:** Elevated left atrial (LA) pressure is central to the symptoms of heart failure with preserved ejection fraction (HFpEF). We aimed to characterise the relationship between LA mechanics and the exercise mediated rise in LA pressure.

**Methods:** Simultaneous echocardiography and right heart catheterisation were performed in 71 subjects with left ventricular ejection fraction  $\geq 50\%$  referred for assessment of dyspnoea. Forty-nine with HFpEF (pulmonary capillary wedge pressure (PCWP)  $\geq 15$  mmHg at rest and/or  $\geq 25$

mmHg at maximal exertion); and 22 as non-cardiac dyspnoea (NCD). Blind two-dimensional speckle tracking analysis of the LA was performed in apical two- and four-chamber views.

**Results:** HFpEF was characterised by impaired LA reservoir and pump strain, and increased stiffness (Table). Stiffness was strongly related to brain natriuretic peptide and exercise cardiac output index ( $r = 0.73$  and  $r = -0.56$ ;  $p < 0.001$ ). Reservoir and pump strain correlated to exercise PCWP ( $r = -0.64$  and  $r = 0.72$ ;  $p < 0.001$ ), and remained independent predictors adjusting for indexed left ventricular mass, indexed LA volume, mean  $E/e'$ , and systolic blood pressure ( $B = -0.66$  and  $B = 1.40$ ;  $p < 0.001$ ). Reservoir strain at cut-off of 32.2% predicted HFpEF diagnosis with 82% sensitivity and 86% specificity (receiver-operator characteristic area under the curve 0.85;  $p < 0.001$ ).

**Conclusion:** Impaired LA reservoir and pump function and increased stiffness in HFpEF contribute to exercise-mediated rises in PCWP, and to deficits in exercise cardiac output. These markers may be useful non-invasive parameter for diagnosis, as well as assessment of disease progression and novel intervention responses.

**Reservoir Global Strain (%)** HFpEF  $24.3 \pm 9.6$  vs NCD  $36.7 \pm 8.4$   $p < 0.001$

**Pump Global Strain (%)** HFpEF  $-11.5 \pm 3.2$  vs NCD  $-17.0 \pm 3.4$   $p < 0.001$

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0028

#### Long-Term Mortality Following Hospitalisation for Heart Failure in Australia and New Zealand: a Population-Wide Study



S. Hariharaputhiran<sup>1,\*</sup>, D. Horton<sup>1,2</sup>, S. Hossain<sup>1</sup>, C. Labrosciano<sup>1</sup>, B. Nadlacki<sup>3</sup>, R. Adams<sup>1,4</sup>, R. Visvanathan<sup>1,4</sup>, I. Ranasinghe<sup>1,4</sup>

<sup>1</sup> Discipline of Medicine, University of Adelaide, Adelaide, Australia

<sup>2</sup> Data 2 Decisions CRC, Adelaide, Australia

<sup>3</sup> School of Medicine, Flinders University, Adelaide, Australia

<sup>4</sup> Central Adelaide Local Health Network, Adelaide, Australia

**Background:** Contemporary survival following heart (HF) hospitalisation is uncertain. For the first-time, we performed a population-wide evaluation of long-term mortality after HF hospitalisation in Australia and New Zealand (ANZ).

**Methods:** We identified first hospitalisations of patients with a primary diagnosis of HF (ICD10-AM codes I11.0, I13.0, I13.2, and I50.0-9) from all Australian states/territories