**Supplementary Online Tables.**

Supplementary Table 1.

Outcomes of patients separated into a cut off of abnormal GLS ≥ -15%. Patients with an abnormal GLS had a higher rate of all-cause mortality and cardiac death. Major cardiac events were also more common.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Abnormal GLS (GLS ≥ -15%)**  **N= 139** | **Normal GLS**  **(GLS <-15%)**  **N=59** | **p** |
| **Primary Outcomes** | | | |
| All-cause mortality | 41 (29.5) | 7 (11.9) | 0.010 |
| Cardiac death | 14 (10.0) | 1 (1.7) | 0.043 |
| **Secondary Outcomes** | | | |
| Revascularisation/cardiac bypass surgery | 4 (2.9) | 0 (0) | 0.320 |
| Admissions due to heart failure | 21 (15.1) | 5 (8.5) | 0.255 |
| Admissions due to angina | 4 (2.9) | 1 (1.7) | 1.000 |
| Myocardial infarction | 16 (11.5) | 1 (1.7) | 0.195 |
| Major cardiac events | 37 (26.6) | 7 (11.9) | 0.025 |

*Data expressed as n (%) representing each patient- therefore some patients may have had more than one myocardial infarction but is only counted once in this table. p value from a chi squared or Fisher's exact test analysis. Major cardiac events is defined as myocardial infarction, new angina, hospitalization due to heart failure or arrhythmia, coronary revascularisation/coronary bypass surgery or cardiac death.*

Supplementary Table 2.

Univariate cox regression analysis was performed on all parameters in relation to the outcomes all-cause mortality, cardiac death and major cardiac events. The following parameters were significant on univariate analysis and therefore included in the multivariable cox regression model illustrated in table 4. In addition, factors that were not significant, but were considered *a priori* to be important for the outcome were also included \*.

|  |  |  |  |
| --- | --- | --- | --- |
| Univariate analysis in relation to outcome | | | |
|  | Hazard Ratio | 95% Confidence Interval | p |
| **All-Cause Mortality** | | | |
| Age (years) | 1.07 | 1.04-1.10 | <0.001 |
| Smoking | 2.31 | 1.12-4.77 | 0.024 |
| Diabetes Mellitus | 1.62 | 0.92-2.86 | 0.094\* |
| History of Coronary Artery Disease | 1.39 | 0.77-2.52 | 0.277\* |
| History of congestive cardiac failure | 1.84 | 1.04-3.26 | 0.036 |
| Diastolic blood pressure | 0.97 | 0.95-0.99 | 0.041 |
| Albumin | 0.93 | 0.86-0.99 | 0.031 |
| LVMI/HT2.7 | 1.02 | 1.00-1.03 | 0.031 |
| LVEF | 0.96 | 0.94-0.99 | 0.014 |
| PWV | 1.18 | 1.07-1.31 | 0.001 |
| GLS | 1.11 | 1.02-1.22 | 0.014 |
| **Cardiac Death** | | | |
| Diabetes Mellitus | 3.04 | 1.04-8.89 | 0.043 |
| History of Coronary Artery Disease | 1.19 | 0.41-3.49 | 0.750\* |
| LVMI/HT2.7 | 0.99 | 0.97-1.02 | 0.622\* |
| LVEF | 1.01 | 0.96-1.07 | 0.626\* |
| GLS | 1.18 | 1.01-1.37 | 0.034 |
| **Major Cardiac Events** | | | |
| Age (years) | 1.04 | 1.01-1.07 | 0.005 |
| Diabetes Mellitus | 2.05 | 1.13-3.73 | 0.019 |
| History of Coronary Artery Disease | 2.87 | 1.59-5.19 | <0.001 |
| Ca blocker | 2.10 | 1.13-3.40 | 0.019 |
| ARB | 2.40 | 1.27-4.56 | 0.007 |
| GLS | 1.13 | 1.04-1.24 | 0.006 |

*Abbreviations:* *LVMI/HT2.7 , left ventricular mass indexed to height2.7, LVEF, left ventricular ejection fraction, GLS, global longitudinal strain, Ca blocker, calcium channel blocker usage, ARB, angiotensin receptor blocker usage.*

Supplementary Table 3.

Although pulse wave velocity was not significant on univariate analysis, the following multivariable cox regression models have included pulse wave velocity and GLS in the same models as illustrated in table 4.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All-cause mortality**  **(N=48)** | | **Cardiac death**  **(N=15)** | | **Major cardiac event**  **(N=44)** | |
| Hazard Ratio (Confidence Interval) | p | Hazard Ratio (Confidence Interval) | p | Hazard Ratio (Confidence Interval) | p |
| Age (years) | **1.08 (1.03-1.13)** | **0.002** | - | - | **1.04 (1.00-1.08)** | **0.035** |
| Smoking | 1.62(0.67-4.00) | 0.296 | - | - | - | - |
| Diabetes Mellitus | 1.85 (0.91-3.74) | 0.088 | 3.12 (0.78-12.43) | 0.106 | 1.15 (0.60-2.22) | 0.68 |
| History of Coronary Artery Disease | 0.65(0.29-1.46) | 0.297 | 1.38 (0.35-5.46) | 0.647 | **2.26 (1.12-4.55)** | **0.023** |
| CCF | 0.97 (0.45-2.11) | 0.943 | - | - | - | - |
| Diastolic blood pressure (mmHg) | 1.01 (0.98-1.05) | 0.485 | - | - | - | - |
| Ca blocker | - | - | - | - | 1.44 (0.74-2.83) | 0.287 |
| ARB | - | - | - | - | **2.89 (1.38-5.93)** | **0.005** |
| Albumin (g/dL) | 0.93 (0.86-1.01) | 0.092 | - | - | - | - |
| LVMI/HT2.7(g/m2.7) | **1.02 (1.00-1.04)** | **0.038** | 0.99 (0.95-1.02) | 0.488 | - | - |
| LVEF (%) | 0.97 (0.94-1.01) | 0.114 | 1.06 (0.98-1.14) | 0.136 | - | - |
| PWV (m/s) | **1.23 (1.03-1.47)** | **0.020** | 1.15 (0.87-1.53) | 0.317 | 0.89 (0.74-1.08) | 0.229 |
| GLS (%) | 1.00 (0.86-1.17) | 0.984 | 1.26 (0.98-1.62) | 0.070 | **1.12 (1.01-1.24)** | **0.032** |

*Abbreviations:* *CCF, history of heart failure, Ca blocker, calcium channel blocker usage, ARB, angiotensin receptor blocker usage, LVEF, left ventricular ejection fraction, LVMI/HT2.7 , left ventricular mass indexed to height2.7, GLS, global longitudinal strain, PWV, pulse wave velocity.*

Supplementary Online Figure 1.

Speckle tracking echocardiography assessment in the determination of global longitudinal strain (GLS). The endocardium is traced and tracked in a semi-automated system by the QLAB software Version 9. A mean of the longitudinal strain in three apical views ((a) 2 chamber (b) 4 chamber (c) 3 chamber) gives the global longitudinal strain value (d).

