Supplementary Table 1. Key baseline measures
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| Parameter          | Overall (n=56) | Dapagliflozin (n=28) | Placebo (n=28) | p value |
|--------------------|---------------|----------------------|----------------|---------|
|                    | Mean (SD)     | Mean (SD)            | Mean (SD)      |         |
| Age (years)        | 67.1 (6.9)    | 66.9 (7.0)           | 67.4 (6.8)     | 0.788   |
| Male gender        | 37 (66.1%)    | 18 (64.3%)           | 19 (67.9%)     | 0.054   |
| Weight (kg)        | 91.5 (18.6)   | 92.9 (18.1)          | 90.2 (19.3)    | 0.587   |
| BMI (kg/m2)        | 32.5 (5.3)    | 33.0 (5.5)           | 32 (5.2)       | 0.495   |
| Functional Class:  |               |                      |                |         |
| NYHA I             | 25 (44.6%)    | 12 (42.9%)           | 13 (46.4%)     | 0.794   |
| NYHA II            | 24 (42.9%)    | 13 (46.4%)           | 11 (39.3%)     | 0.546   |
| NYHA III           | 7 (12.5%)     | 3 (10.7%)            | 4 (14.3%)      | 0.245   |
| Blood pressure /   |               |                      |                |         |
| Heart Rate:        |               |                      |                |         |
| SBP (mmHg)         | 133.9 (17.1)  | 135 (15.4)           | 132.8 (18.8)   | 0.627   |
| DBP (mmHg)         | 72.7 (10.0)   | 74 (7.1)             | 71.4 (12.2)    | 0.328   |
| MAP (mmHg)         | 93.1 (10.4)   | 94.4 (7.3)           | 91.9 (12.8)    | 0.373   |
| HR (bpm)           | 76.0 (12.8)   | 77.6 (14.0)          | 74.4 (11.6)    | 0.354   |
| Etiology of heart failure: |     |                      |                |         |
| IHD                | 30 (53.6%)    | 15 (53.6%)           | 15 (53.6%)     | 0.845   |
| DCM                | 13 (23.2%)    | 7 (25.0%)            | 6 (21.4%)      | 0.456   |
| Other              | 11 (19.6%)    | 5 (17.9%)            | 6 (21.4%)      | 0.124   |
| Unknown            | 2 (3.6%)      | 1 (3.6%)             | 1 (3.6%)       | 1       |
## SUPPLEMENTARY DATA

### Duration of disease:

|                     | Heart failure (years) | Type 2 diabetes (years) | Co-morbidities: | Medications: | Cardiac MRI Parameters: |
|---------------------|-----------------------|-------------------------|-----------------|--------------|-------------------------|
|                     | Duration              |                         |                 |              | LVESV† (ml)            |
| Heart failure       | 6.24 (6.49)           | 6.64 (6.1)              | 8.77 (6.26)     | 8.41 (6.5)   | 102.7 (50.5)           |
| (years)             |                       | 5.83 (6.99)             | 9.14 (6.17)     |              | 99.2 (40.7)            |
|                     |                       |                         |                 |              | 106.4 (59.6)           |
|                     |                       |                         |                 |              | 0.649                   |
|                     |                       |                         |                 |              | 0.672                   |
| Co-morbidities:     |                       |                         |                 |              |                         |
| Hypertension        | 40 (71.4%)            | 22 (78.6%)              | 18 (64.3%)      | 0.485        |                         |
| AF                  | 22 (39.3%)            | 11 (39.3%)              | 11 (39.3%)      | 0.998        |                         |
| PAD                 | 9 (16.1%)             | 5 (17.9%)               | 4 (14.3%)       | 0.842        |                         |
| Stroke / TIA        | 10 (17.9%)            | 3 (10.7%)               | 7 (25.0%)       | 0.06         |                         |
| MI                  | 29 (51.8%)            | 14 (50.0%)              | 15 (53.6%)      | 0.475        |                         |
| Medications:        |                       |                         |                 |              |                         |
| Loop diuretic dose  | 49.8 (22.0)           | 52.9 (20.5)             | 46.8 (23.4)     | 0.307        |                         |
| (mg)*               |                       |                         |                 |              |                         |
| ACE-I/ARB           | 50 (89.3%)            | 25 (89.3%)              | 25 (89.3%)      | 0.985        |                         |
| Beta blockers       | 46 (82.1%)            | 24 (85.7%)              | 22 (78.6%)      | 0.877        |                         |
| MRA                 | 23 (41.1%)            | 13 (46.4%)              | 10 (35.7%)      | 0.898        |                         |
| Metformin           | 31 (55.4%)            | 17 (60.7%)              | 14 (50.0%)      | 0.978        |                         |
| Other OHA           | 22 (39.3%)            | 13 (46.4%)              | 9 (32.1%)       | 0.413        |                         |
| Insulin             | 16 (28.6%)            | 6 (21.4%)               | 10 (35.7%)      | 0.657        |                         |
| Cardiac MRI Parameters: |                   |                         |                 |              |                         |
| LVESV† (ml)         | 102.7 (50.5)          | 99.2 (40.7)             | 106.4 (59.6)    | 0.604        |                         |
|                                | Mean (SD) 1 | Mean (SD) 2 | Mean (SD) 3 | p-value |
|--------------------------------|-------------|-------------|-------------|---------|
| Indexed LVESV† (ml/m2)         | 51.6 (26.2) | 49.4 (21.3) | 54.1 (30.9) | 0.52    |
| LVEDV † (ml)                   | 180.2 (61.0) | 172.4 (47.7) | 188.3 (72.4) | 0.346   |
| Indexed LVEDV† (ml/m2)         | 90.3 (30.9)  | 85.9 (24.1)  | 95.0 (36.8)  | 0.294   |
| LVEF† (%)                      | 45.5 (12.0)  | 44.5 (12.4)  | 46.5 (11.7)  | 0.526   |
| LV Mass Index† (g/m2)          | 71.5 (17.7)  | 69.5 (16.3)  | 73.7 (19.3)  | 0.398   |
| LV Stroke Vol† (ml)            | 38.7 (10.4)  | 36.6 (10.4)  | 41 (10.2)    | 0.126   |
| Indexed LA Volume††(ml/m2)     | 50.0 (18.9)  | 49.0 (18.8)  | 51 (19.3)    | 0.699   |

Biochemistry:

|                                | Mean (SD) 1 | Mean (SD) 2 | Mean (SD) 3 | p-value |
|--------------------------------|-------------|-------------|-------------|---------|
| Hb (g/dL)                       | 13.5 (1.6)  | 13.2 (1.3)  | 13.8 (1.5)  | 0.294   |
| Hct (%)                         | 40.9 (4.7)  | 40.4 (3.9)  | 41.4 (5.4)  | 0.405   |
| HbA1c (mmol/mol)                | 60.9 (17.1) | 63.0 (17.8) | 58.6 (16.4) | 0.339   |
| BHB (mmol/L)                    | 0.2 (0.1)   | 0.2 (0.1)   | 0.2 (0.1)   | 0.865   |
| Creatinine (µmol/L)             | 88.2 (19.9) | 92.0 (19.9) | 84.4 (19.5) | 0.151   |
| eGFR (ml/min/1.73m2)            | 72.0 (19.2) | 67.7 (16.4) | 76.2 (21.0) | 0.254   |

**Abbreviations:** Med=Median; SD=Standard deviation; IQR=Interquartile range; CI=Confidence interval; NS=Not significant; BMI=body mass index; NYHA=New York Heart Association functional classification for heart failure; SBP=systolic blood pressure; DBP=Diastolic blood pressure; MAP=Mean arterial pressure; IHD=Ischemic heart disease; HR=Heart Rate; bpm=beats per minute; DCM=Dilated cardiomyopathy; AF=Atrial fibrillation; PAD=Peripheral arterial disease; TIA=Transient ischemic attack; MI=Myocardial infarction; ACE-
SUPPLEMENTARY DATA

I=Angiotensin converting enzyme inhibitor; ARB=Angiotensin receptor blocker; MRA=Mineralocorticoid receptor antagonist; OHA=Oral hypoglycemic agent; LVEDV=Left ventricular end diastolic volume; LVESV=Left ventricular end systolic volume; LVEF=Left ventricular ejection fraction; LV=Left ventricular; Hb=Hemoglobin; Hct=Hematocrit; HbA1c=Hemoglobin A1c; eGFR=Estimated glomerular filtration rate; NT-proBNP=N-terminal pro B-type natriuretic peptide; hsCRP=High sensitivity C-reactive protein; Oxi-LDL=Oxidized low density lipoprotein; Na=Sodium; Alb=Albumin; ACR=Albumin:creatinine ratio; V02 Max=Peak oxygen consumption; VC02 Max=Peak carbon dioxide production; Ve=minute ventilation; Ve/VCO2= peak minute ventilation to carbon dioxide ratio; SF-36 PCS=Physical component summary of the short from 36; SF-36 MCS=Mental component summary of the short from 36; MLHF=Minnesota living with heart failure.

* Bumetanide dose converted to equivalent furosemide dose (1mg bumetanide = 40mg furosemide)
† = Unable to analyse baseline images of one participant in placebo group due to very poor image quality
‡‡ = Unable to analyze baseline LA volume in 5 patients due to poor image quality (overall n= 51, dapagliflozin n=26, placebo n=25)
‡ = Analysis excludes 2 patients in placebo arm who were unable to complete CPET