**Supplementary Table 1** | Demographic and clinical information of patients from the American cohort

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| **Variables** | **Total patients****(n = 199)** | **HF stages** | **p-value (stages)** |
| **HFpEF****(n = 106)** | **HFmEF****(n = 46)** | **HFrEF****(n = 47)** |
| LVEF, % | 58 (50-67) | 65 (60-71.5) | 54 (50-55) | 44 (36-46) | **<0.001** |
| Cardiovascular risk factors |
| Age, yrs | 59 (50-67) | 57.5 (50-65) | 61.5 (52-68.5) | 61 (48-69) | 0.304 |
| Male | 168 (84.42) | 89 (83.96) | 38 (82.61) | 41 (87.23) | 0.670 |
| BMI, kg/m2 | 26.72(24.34-29.32) | 26.68(24.22-28.73) | 26.66(24.34-29.30) | 26.83(24.91-29.76) | 0.262 |
| Smoker | 143 (71.86) | 72 (67.93) | 34 (73.91) | 37 (78.72) | 0.187 |
| Diabetic | 23 (11.56) | 7 (6.60) | 7 (15.22) | 9 (19.15) | **0.018** |
| Hypertensive | 102 (51.26) | 55 (51.89) | 23 (50.00) | 24 (51.06) | 0.897 |
| Cardiovascular history |
| AP | 147 (73.87) | 84 (79.25) | 31 (67.39) | 32 (68.09) | 0.101 |
| VT | 16 (8.04) | 8 (7.55) | 2 (4.35) | 6 (12.77) | 0.396 |
| Prior MI | 116 (59.80) | 54 (50.94) | 30 (65.22) | 35 (74.47) | **<0.001** |
| Cardiovascular medication |
| Beta-blockers | 151 (75.88) | 81 (76.42) | 33 (71.74) | 37 (78.72) | 0.878 |
| ACE-inhibitors | 53 (26.63) | 30 (28.30) | 9 (19.57) | 14 (29.79) | 0.956 |
| Anti-arrhythmics | 12 (6.03) | 3 (2.83) | 4 (8.70) | 5 (10.64) | **0.045** |
| diuretics | 11 (5.53) | 1 (0.94) | 5 (10.87) | 5 (10.64) | **<0.001** |
| **Additional available information** |
| Systolic BP, mmHg | 128 (120-135.5) | 125 (111-139) | 129 (120-130) | 130 (120-142) | 0.649 |
| Diastolic BP, mmHg | 80 (70-90) | 80 (70-90) | 80 (70-88) | 76 (70-80) | 0.735 |
| Syncope | 15 (7.54) | 5 (4.72) | 6 (13.04) | 4 (8.51) | 0.264 |
| Digoxin | 1 (0.50) | 0 (0.00) | 1 (2.17) | 0 (0.00) | 0.720 |
| LVDS, mm | 35 (32-41) | 33 (29-35) | 37.23 (32-41.5) | 41 (36.5-46) | **<0.001** |
| LVDD, mm | 53 (48-56.5) | 52 (48.25-55) | 54.08 (46.75-60) | 55.02 (49-61) | **0.030** |
| WMA | 109 (54.77) | 40 (37.74) | 32 (69.57) | 37 (78.72) | **<0.001** |

All values are represented as median (inter-quartile range) or n (%). Bold p-values show statistically significant differences (p < 0.050) amongst the three stages using the linear regression fitting testing. HFpEF = Heart failure with preserved ejection fraction; HFmEF = Heart failure with mid-range ejection fraction; HFrEF = Heart failure with reduced ejection fraction; LVEF = Left ventricular ejection fraction; BMI = Body mass index; AP = Angina pectoris; VT = Ventricular tachycardia; MI = Myocardial infarction; ACE = Angiotensin-converting enzyme; BP = Blood pressure; LVDS = Left ventricle systolic dimension; LVDD = Left ventricle diastolic dimension; WMA = Wall motion abnormality

**Supplementary Table 2** | Demographic and clinical information of patients from the Greek cohort

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| **Variables** | **Total patients** **(n = 104)** | **HF stages** | **p-value (stages)** |
| **HFpEF****(n = 23)** | **HFmE****(n = 46)** | **HFrEF****(n = 35)** |
| LVEF, % | 50 (45-60) | 60 (58-63) | 50 (50-55) | 45 (40-47) | **<0.001** |
| Cardiovascular risk factors |
| Age, yrs | 57 (50-64) | 54 (45-61) | 56.5 (51-66) | 60 (51-64) | 0.057 |
| Male | 90 (86.54) | 19 (82.61) | 38 (82.61) | 33 (94.29) | 0.162 |
| BMI, kg/m2 | 28.04(26.12-29.94) | 28.30(25.95-29.67) | 28.14(26.27-30.30) | 27.76(25.51-29.71) | 0.814 |
| Smoker | 60 (57.69) | 15 (65.22) | 28 (60.87) | 17 (48.57) | 0.189 |
| Diabetic | 20 (19.23) | 3 (13.04) | 6 (13.04) | 11 (31.43) | 0.056 |
| Hypertensive | 52 (50) | 9 (39.13) | 23 (50) | 20 (57.14) | 0.187 |
| Cardiovascular history |
| AP | 39 (37.50) | 5 (21.74) | 15 (32.61) | 19 (54.29) | **0.009** |
| VT | 5 (4.81) | 0 (0) | 0 (0) | 5 (14.29) | **0.006** |
| Prior MI | 104 (100) | 23 (100) | 46 (100) | 35 (100) | 0.651 |
| Cardiovascular medication |
| Beta-blockers | 94 (90.39) | 20 (86.96) | 44 (95.65) | 30 (85.71) | 0.706 |
| ACE-inhibitors | 60 (57.69) | 17 (73.91) | 24 (52.17) | 19 (54.29) | 0.189 |
| Anti-arrhythmics | 0 (0) | 0 (0) | 0 (0) | 0 (0) | - |
| diuretics | 103 (99.04) | 23 (100) | 46 (100) | 34 (97.14) | 0.232 |
| **Additional available information** |
| Dyslipidemia | 76 (73.08) | 12 (52.17) | 35 (76.09) | 29 (82.86) | **0.013** |
| Alcoholic | 44 (42.31) | 6 (26.09) | 18 (39.13) | 20 (57.14) | **0.006** |
| Hereditary SCD | 9 (8.65) | 2 (8.70) | 3 (6.52) | 4 (11.43) | 0.658 |
| Hereditary CAD | 28 (26.92) | 3 (13.04) | 12 (26.09) | 13 (37.14) | **0.043** |
| ARB | 14 (13.46) | 2 (8.70) | 7 (15.22) | 5 (14.29) | 0.594 |
| Statin | 102 (98.08) | 23 (100) | 45 (97.83) | 34 (97.14) | 0.461 |
| CCB | 12 (11.54) | 2 (8.70) | 6 (13.04) | 4 (11.43) | 0.805 |
| Anti-diabetic | 18 (17.31) | 3 (13.04) | 5 (10.87) | 10 (28.57) | 0.085 |
| Insulin | 2 (1.92) | 0 (0) | 1 (2.17) | 1 (2.86) | 0.461 |
| MRA | 11 (10.58) | 1 (4.35) | 4 (8.70) | 6 (17.14) | 0.109 |
| T4 | 2 (1.92) | 0 (0) | 1 (2.17) | 1 (2.86) | 0.461 |
| ASA | 102 (98.08) | 23 (100) | 46 (100) | 33 (94.29) | 0.089 |
| Ticagrelor | 47 (45.19) | 13 (56.52) | 21 (45.65) | 13 (37.14) | 0.150 |
| Clopidogrel | 41 (39.42) | 7 (30.45) | 21 (45.65) | 13 (37.14) | 0.733 |
| Prasugrel | 2 (1.92) | 0 (0) | 1 (2.17) | 1 (2.86) | 0.461 |
| Nitrates | 5 (4.81) | 2 (8.70) | 2 (4.35) | 1 (2.86) | 0.332 |
| VKA | 2 (1.92) | 0 (0) | 0 (0) | 2 (5.71) | 0.089 |
| LAD anomaly | 60 (57.69) | 13 (56.52) | 22 (47.83) | 25 (71.43) | 0.175 |
| PCI LAD | 51 (49.04) | 11 (47.83) | 19 (41.30) | 21 (60) | 0.278 |
| LCx anomaly | 41 (39.42) | 8 (34.78) | 20 (43.48) | 13 (37.14) | 0.942 |
| PCI LCx | 28 (26.92) | 6 (26.09) | 18 (32.61) | 7 (20) | 0.509 |
| RCA anomaly | 54 (51.92) | 11 (47.93) | 22 (47.83) | 21 (60) | 0.321 |
| PCI RCA | 44 (42.31) | 10 (43.48) | 21 (45.65) | 13 (37.14) | 0.581 |
| CABG | 6 (5.77) | 1 (4.35) | 1 (2.17) | 4 (11.43) | 0.192 |
| LVDD, mm | 49 (46-53) | 48 (46-53) | 48 (43-52) | 49 (46.5-53) | 0.186 |
| IVS, mm | 10 (9-11) | 10 (8.5-11) | 10 (9-11) | 10 (9-11) | 0.281 |
| PW, mm | 9.5 (9-11) | 10 (9-12) | 9.5 (9-11) | 9 (8-10) | 0.273 |
| LA, mm | 39 (35-42) | 39 (35-40.5) | 40 (35-42) | 39 (35-42.5) | 0.441 |

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