Methods

Baseline Clinical characteristics

Dual-energy X-ray absorptiometry (DXA)

The whole-body composition was estimated by using DXA (Lunar Prodigy Bone Densitometers, GE Healthcare, USA), with a full-body examination. Fat and lean mass were expressed in absolute values (kg), and percentage values (%) described by the DXA scan manufactured. The participants were not instructed on food intake or nutritional prescription.

Echocardiography

The echocardiographic measurements were performed according to the recommendations of the American Society of Echocardiography[1]. Classic parameters representing cardiac structure (left atrial enlargement and/or left ventricular hypertrophy) and function (ejection fraction calculation followed Simpson method) were evaluated[2]. All patients were evaluated by the same cardiologist using an ultrasound (Vivid S6, GE Healthcare, Tirat Carmel/ Haifa, Israel) and probe (matricial 4V;setorial 3Sc) with both GE *3Sc-RS Probe* (Sector) and the GE 4V-D Probe (collector). Resting supine position included the following measurements: left ventricular ejection fraction (LVEF, %), left atrial volume index (LAVI, ml/m^2); left ventricular mass index (LVMI, g/m^2); pulsed wave tissue Doppler imaging was used for early diastolic velocity (e') at the septal annulus. The E/e's ratio was measured as an indicator for LV filling pressures.

Spirometry

Lung volumes and capacities were assessed by forced spirometry, using s calibrated spirometer (MicroLab CareFusion® MK8) through a proper Spirometry PC Software. The spirometry evaluations followed the American Thoracic Society/European Respiratory Society's recommendations, 2005[3]. The predictions were calculated according to the equations for the Brazilian, population according to Pereira et al., 2007[4]. Variables considered were forced expiratory volume in the first second (FVE_1, L/s), forced vital capacity (FVC, L/s), ratio FVE_1 by FVC (FVE_1/FVC, L/s), and all predicted value (%).

Cardiopulmonary exercise test

Functional exercise capacity assessed utilizing a maximal incremental cardiopulmonary exercise test of an electromagnetic bicycle (Corival, LODE BV Medical Technology Groningen - Netherlands) under cardiologist supervision. The gas analyzer (CPET, Cosmed, Rome, Italy) were following the breath-by-breath method, evaluating the variables determined by both V-Slope and ventilatory equivalents method[5], thereby assessing peak oxygen uptake capacity (peak $\dot{V}O_2$) and peak power using a 1-min work stage protocol (starting workload of 20W and incremental workload of 10 to 15W). Oxygen uptake and heart rate (12-lead electrocardiogram) measurements were performed continuously. All patients cycled until volitional exhaustion, when patients were no longer able to maintain a cycling frequency of 55 rpm higher. Peak exercise effort was confirmed when respiratory gas exchange ratio (RER) was ≥1.10, with dyspnea or leg or general fatigue.

The exercise test occurred at least 2-3h following the last meal, and the patients could not exercise 24h before the test. Primarily, patients adopted a rest period on the ergometer of at least 5min, until a steady-state respiratory had been established. At the end of the exercise, the state of recovery was observed for 2min. All individuals performed the exercise test on a symptom-limited ramp by increasing the standard ramp's work rate. After a warm-up period of 2min at 20W, an increase in the work rate at a slope of 10-15W/min was stated (recommendation for HF patients)[6]. Individuals were asked about their perception of ventilatory effort and muscular fatigue every 2 minutes, according to the Borg scale (6 to 20)[7].

Results

Table S1. Baseline characteristics in both heart failure phenotypes.

Parameters	HFpEF (n = 16)		HFrEF (n = 12)		HFpEF vs. HFrEF		Weber Class A+B vs. Weber Class C		HFpEF vs. HFrEF
	Weber Class A+B (n = 11)	Weber Class C (n = 4)	Weber Class A+B (n = 4)	Weber Class C (n = 3)	p-value (A+B)	p-value (C)	p-value HFpEF	p-value HFrEF	p-value
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD					
DXA									
Total body fat mass, %	34.1 ± 3.8	45.4 ± 5.5	36.7 ± 5.8	40.5 ± 10.8	0.453[a]	0.533[a]	0.019[a]*	0.624[a]	0.724[a]
Body fat mass, Kg	29.0 ± 6.9	36.8 ± 6.3	25.5 ± 7.3	31.8 ± 12.0	0.440[a]	>0.999[b]	0.087[a]	0.400[b]	0.582[a]
Total body lean mass, %	63.6 ± 3.6	53.0 ± 5.3	61.4 ± 5.6	57.4 ± 9.7	0.503[a]	0.533[a]	0.020[a]*	0.567[a]	0.732[a]
Body lean mass, Kg	55.4 ± 9.0	44.2 ± 6.2	44.7 ± 15.5	46.3 ± 16.4	0.266[a]	0.851[a]	0.026[a]*	0.902[a]	0.273[a]
Pulmonary Function	**(n = 11)**	**(n = 5)**	**(n = 7)**	**(n = 5)**					
FEV_1, L/s	2.8 ± 0.8	1.8 ± 0.5	2.7 ± 0.8	2.5 ± 0.6	0.852[a]	0.092[a]	0.008[a]*	0.583[a]	0.614[a]
% Predicted FEV_1	82.4 ± 23.0	59.6 ± 11.5	82.7 ± 14.7	80.4 ± 12.2	0.385[b]	0.024[a]*	0.035[b]*	0.772[a]	0.071[b]
Forced Vital Capacity, L	3.8 ± 0.8	2.5 ± 0.6	3.7 ± 1.0	2.9 ± 0.7	0.774[b]	0.277[a]	0.003[a]*	0.133[b]	0.959[a]
% Predicted Forced Vital Capacity	90.4 ± 20.5	67.0 ± 15.3	91.1 ± 10.0	76.0 ± 10.6	0.339[b]	0.316[a]	0.064[b]*	0.036[a]*	0.788[a]
FEV1/FVC, %	72.8 ± 6.6	72.6 ± 7.4	73.0 ± 7.9	85.4 ± 6.3	0.808[b]	0.020[a]*	0.957[a]	0.005[b]*	0.106[a]
% Predicted FEV_1/FVC	90.2 ± 6.7	89.2 ± 6.6	87.2 ± 8.1	92.0 ± 17.8	0.426[a]	>0.999[b]	0.792[a]	0.965[b]	0.442[b]
Risk Factors and Heart Diseases	**(n = 11)**	**(n = 5)**	**(n = 7)**	**(n = 5)**					
Ischaemic (n, %)	10 (90.9%)	3 (60.0%)	5 (71.4%)	3 (60.0%)	--	--	0.214[c]	>0.999[c]	0.418[c]
Hypertension (n, %)	0 (0.0%)	1 (20.0%)	0 (0.0%)	0 (0.0%)	--	--	0.313[c]	>0.999[c]	>0.999[c]
Idiopathic (n, %)	1 (9.1%)	1 (20.0%)	2 (28.6%)	2 (40.0%)	--	--	>0.999[c]	>0.999[c]	0.354[c]
Arterial Hypertension (n, %)	6 (54.6%)	3 (60.0%)	5 (71.4%)	2 (40.0%)	--	--	>0.999[c]	0.558[c]	>0.999[c]
Diabetes Mellitus (n, %)	2 (18.2%)	1 (20.0%)	2 (28.6%)	2 (40.0%)	--	--	>0.999[c]	>0.999[c]	0.662[c]
Dyslipidemia (n, %)	10 (90.9%)	2 (40.0%)	5 (71.4%)	3 (60.0%)	--	--	0.063[c]	>0.999[c]	0.691[c]
Obesity (n, %)	5 (45.5%)	2 (40.0%)	2 (28.6%)	2 (40.0%)	--	--	>0.999[c]	>0.999[c]	0.705[c]
Tabagism (n, %)	2 (18.2%)	3 (60.0%)	4 (57.1%)	2 (40.0%)	--	--	0.245[c]	>0.999[c]	0.441[c]
Coronary Artery Disease (n, %)	8 (72.7%)	2 (40.0%)	2 (28.6%)	3 (60.0%)	--	--	0.300[c]	0.558[c]	>0.999[c]

Legend: Values are expressed as mean ± standard deviation (SD) or absolute and relative frequencies n (%). ***Statistics:*** [a] Unpaired t-test; [b] Mann-Whitney U test; [c] Fisher's Exact Test. * $p \leq 0.05$. ***Abbreviations:*** HFpEF, heart failure with preserved ejection fraction; HFrEF, heart failure with reduced ejection fraction; DXA, dual-energy X-ray absorptiometry; Kg, kilogram; FEV_1, forced expiratory volume in the first second; L/s, liters per second; L, liter; FEV_1/CVF, it represents the proportion of vital capacity that they are able to expire in the first second of forced expiration to the full, forced vital capacity.

STROBE Statement - checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract **(page 1)**
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found **(page 1)**
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported **(pages 2 and 3)**
Objectives	3	State specific objectives, including any prespecified hypotheses **(page 3)**
Methods		
Study design	4	Present key elements of study design early in the paper **(page 3)**
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection **(page 3)**
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case **(page 3 and 4)**
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable **(page 3)**
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group **(pages 4, 5 and 6)**
Bias	9	Describe any efforts to address potential sources of bias **(page 5)**
Study size	10	Explain how the study size was arrived at **(page 6)**
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why **(page 6)**
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding **(page 6)**
		(*b*) Describe any methods used to examine subgroups and interactions **(page 6)**
		(*c*) Explain how missing data were addressed **(page 5)**
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy **(pages 6 and 7)**
		(*e*) Describe any sensitivity analyses

Continued on next page

Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed **(pages 7, 8, 9, 10, 11, 12, 13 and 14)**
		(b) Give reasons for non-participation at each stage
		(c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders **(pages 7 and 8)**
		(b) Indicate number of participants with missing data for each variable of interest **(pages 7, 8, 9, 10, 11, 12, 13 and 14)**
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures **(pages 7, 8, 9, 10, 11, 12, 13 and 14)**
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included **(pages 10, 12 and 14)**
		(*b*) Report category boundaries when continuous variables were categorized
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses **(pages 7, 8, 9, 10, 11, 12, 13 and 14)**
Discussion		
Key results	18	Summarise key results with reference to study objectives **(page 15)**
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias **(page 16)**
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence **(pages 15 and 16)**
Generalisability	21	Discuss the generalisability (external validity) of the study results **(page 16)**
Other information		
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based **(title page)**

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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