Body composition, lipid profile and mediterranean diet adherence in cardiovascular disease patients attending a long-term exercise-based cardiac rehabilitation program during COVID-19 pandemic.

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Introduction: Cardiovascular disease (CVD) is recognized as a major public health issue and remains the leading cause of mortality worldwide. There is a clear association between adiposity, blood lipid profile, and adherence to the Mediterranean diet (MD) with the risk of CVD. However, the assessment of body composition parameters, dietary patterns and nutritional intervention in CVD patients undergoing a cardiovascular rehabilitation (CR) program remains insufficient.

Purpose: to characterize body composition, lipid profile and MD adherence in patients with CVD who were attending an exercise-based CR program during COVID-19 era.

Methods: The study was developed between October 2020 and January 2021 in a phase III centre-based CR program. Body composition was assessed by dual energy x-ray absorptiometry Hologic Explorer-W. Adherence to the MD was assessed by the 14-item MD questionnaire. Fasting blood sample was taken for measurement of lipid profile.

Results: A sample of 41 patients (mean age 64.4 ± 7.9 years, 87.8% male) was evaluated. The most prevalent CVD were coronary artery disease (89.5%) and heart failure (21.1%). The main CVD risk factors at admission in the CR program were dyslipidaemia (71.1%), hypertension (68.4%), physical inactivity (26.3%) and diabetes mellitus (21.0%). In our sample the mean body mass index was 28 ± 3.8 kg/m2, being most patients overweight (75.6%), and having a substantially increased risk of metabolic complications (85.3%) accordingly to waist-hip ratio. Body composition assessment showed that 14.6% of the patients had a body fat mass index above 90th percentile. Although only 9.8% of the patients had reduced fat free mass, 17.1% showed appendicular lean mass below the reference value. In addition, less than one third of the patients (31.7%) revealed a high adherence to the MD pattern. A sub-analysis on blood lipids (n = 26) showed that most patients had levels of LDL cholesterol (76.9%) and non-HDL cholesterol (65.4%) above the therapeutic target and 15.4% had triglycerides higher than 150 mg/dl.

Conclusion: Body composition, lipid profile and dietary patterns, play a major role in CVD secondary prevention. Our findings showed that a substantial number of CVD patients, in COVID-19 era, did not have optimal body composition, were above lipid profile targets, and had a low/medium adherence to the MD. Thus, this study highlights the relevance of nutrition on cardiometabolic status and demonstrates the crucial role of nutritional intervention as an integrated part of a long-term phase III CR program. Moreover, further research about nutritional intervention in patients undergoing CR is warranted.