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Effect of Physical Exercise on the Lipid Profile in Post-Myocardial Infarction Patients: A Systematic Review

Cardiovascular diseases are a leading global cause of death, with acute myocardial infarction (AMI) being a prominent manifestation caused by coronary artery occlusion due to thrombus formation. This systematic review aimed to evaluate the effect of physical exercise on the lipid profile in post-myocardial infarction patients, focusing on key biomarkers: VLDL, LDL, HDL, IDL, and triglycerides. An electronic search was conducted in PubMed and the Virtual Health Library using descriptors "lipid profile," "myocardial infarction," and "physical exercise." From 103 initial studies, two met inclusion criteria. Data analysis showed that, on average, all biomarkers except HDL decreased by 1%, indicating a beneficial effect for coronary disease prevention. HDL alone increased significantly (+17.5%), which contributed to reduced LDL:HDL and TG:HDL ratios, key predictors of cardiovascular risk. These findings suggest that aerobic physical exercise improves lipid metabolism, increases mitochondrial activity, and enhances muscle lipoprotein lipase activity, contributing to improved cardiovascular outcomes in AMI survivors. Notably, 40-minute exercise sessions yielded similar benefits as 60-minute sessions in patients with altered lipid profiles, indicating the potential for cost-effective interventions. Further experimental studies are recommended to support individualized cardiac rehabilitation programs.

Keywords: myocardial infarction, exercise, lipid profile, cardiac rehabilitation, HDL, systematic review

Biography

Antonio Beira de Andrade Junior is a professor and researcher at Uniandrade, Brazil. He has extensive experience in exercise physiology and cardiovascular rehabilitation. His academic and clinical work focuses on the effects of physical activity on health outcomes in cardiac patients. He also contributes to the development of systematic training protocols aimed at reducing cardiovascular risk.