Fitness levels shine a light on atrial fibrillation risks

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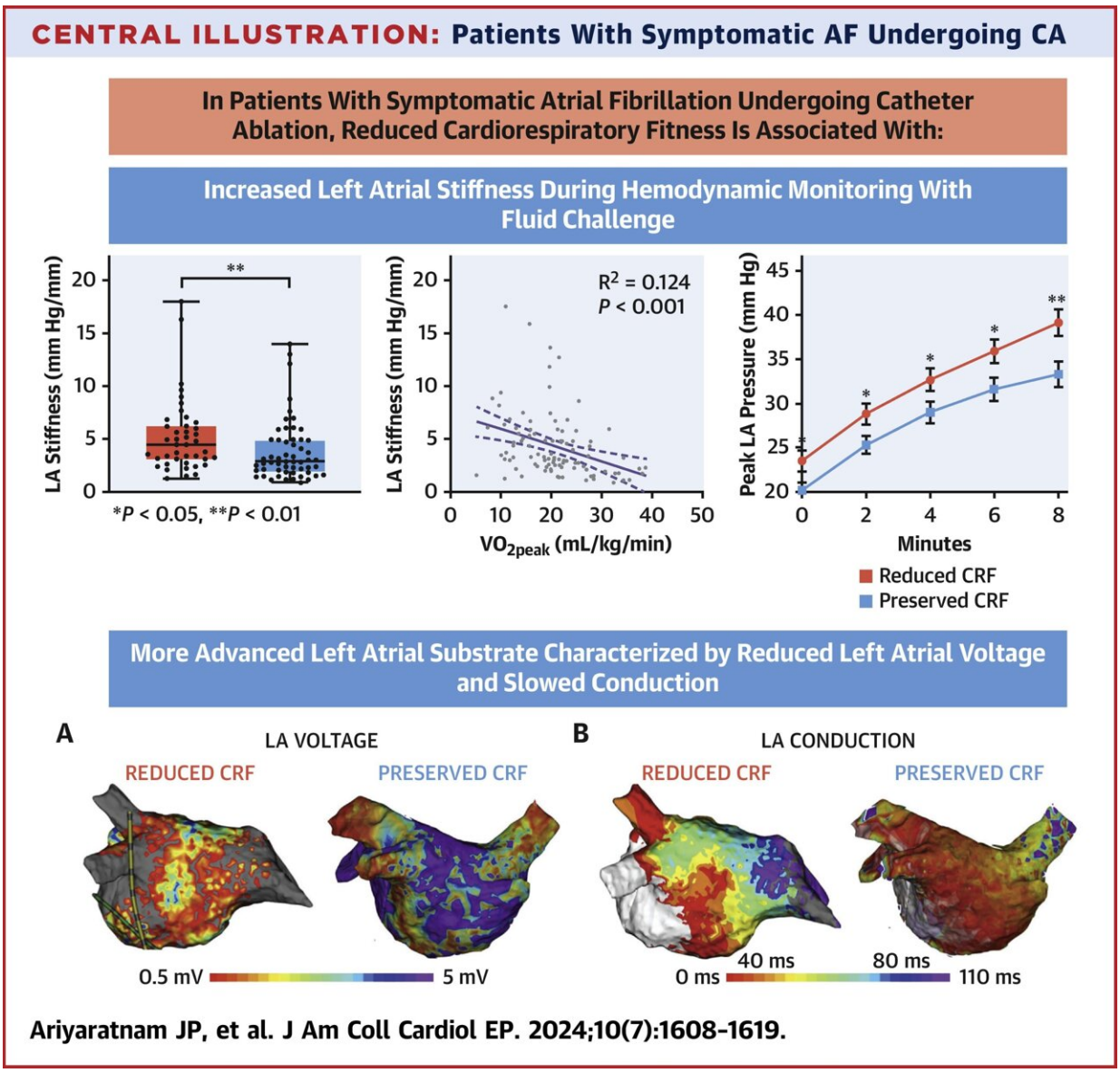

Credit: *JACC: Clinical Electrophysiology* (2024). DOI:

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A person's fitness levels could provide greater insight into the progression of atrial fibrillation, according to a new study by University of Adelaide researchers.

About 100 patients with atrial fibrillation underwent cycle fitness tests followed by invasive and non-invasive testing to assess cardiac structure and function.

"Our findings suggest that people with atrial fibrillation who are less fit demonstrate significant functional and electrical changes in the heart linked to disease," said lead author and Post-Doctoral Fellow at the Center for Heart Rhythm Disorders Dr. Jonathan Ariyaratnam.

"This indicates that cardiorespiratory fitness is another important independent risk factor for the development and progression of atrial fibrillation."

The study, published in *JACC: Clinical Electrophysiology*, found participants with reduced fitness had increased left atrial (LA) stiffness and reduced LA strain as well as slower conduction velocities when compared to those with a higher CRF.

"These associations of reduced CRF occur independently of age, sex, and several other AF risk factors, including hypertension, diabetes, and obstructive sleep apnea," said Dr. Ariyaratnam.

"The study therefore highlights cardiorespiratory fitness as a risk factor for left atrial dysfunction that underpins the development and progression of atrial fibrillation.

"Importantly, cardiorespiratory fitness is a modifiable risk factor which means that there is the potential to improve left atrial function through improvements in cardiorespiratory fitness.

"We recommend gradually increasing exercise levels with a target of achieving around 210 minutes each week of moderate intensity exercise (e.g., brisk walking, light cycling, doubles tennis)."

Atrial fibrillation affects about half a million Australians and is a major cause of stroke in Australia and can lead to heart failure. Symptoms can include palpitations, shortness of breath, dizziness and chest pain.

"Growing evidence suggests that the atrial substrate underlying AF may be reversible through treatment of the underlying risk factors associated with its development," said Dr. Ariyaratnam.

"The next stage of the research is to investigate whether improving cardiorespiratory fitness through exercise interventions can reduce left atrial symptoms, improve left atrial mechanical function and reduce left atrial electrical remodeling, thereby reducing the risk of developing AF and improving the lives of patients with already diagnosed AF."

More information: Jonathan P. Ariyaratnam et al, Structural, Functional, and Electrical Remodeling of the Atria With Reduced Cardiorespiratory Fitness, *JACC: Clinical Electrophysiology* (2024). DOI: 10.1016/j.jacep.2024.05.014

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