Importance of the Correct Definition of Severe Heart Disease in the Prognosis of Individuals Considered with Retirement Due to Disability

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Short editorial related to the article: The Impact of Severe Cardiopathy on Causes of Death and Survival after Disability Retirement

The manuscript "The Impact of Severe Heart Disease on Causes of Death and Survival after Disability Retirement" demonstrates higher mortality in individuals retired due to severe heart disease when compared to those retired for other causes or proportional retirement. Furthermore, it showed coinciding diagnoses between the cause of retirement and death in full retirements due to severe heart disease, demonstrating that serious heart disease plays a fundamental role in the prognosis of retired individuals.[1]

In 2006, the *Sociedade Brasileira de Cardiologia* published the II Brazilian Guideline on Severe Heart Disease, which standardized the classification of heart diseases as serious or not for expert assessment. The manuscript in question, demonstrating the association of the diagnosis of severe heart disease with a worse long-term prognosis, reinforces the need to define the severity of each patient in their assessment[2] correctly.

Therefore, it is important to discuss the scientific basis for the correct definition of the term severe heart disease among the various diseases that affect the heart.

In heart failure (HF), the heart is unable to pump blood effectively to meet physiological needs or can only do so with high filling pressures. Its classification takes into account the left ventricular ejection fraction (LVEF) – preserved, intermediate, and reduced –, the severity of symptoms (New York Heart Association – NYHA functional classification), and the time of disease progression. Heart failure with reduced ejection fraction (HFrEF) occurs with LVEF ≤ 40%, while heart failure with intermediate ejection fraction (HFmrEF) with LVEF between 41-49% and, finally, heart failure with preserved ejection fraction (HFpEF) with LVEF ≥ 50%.[3,4] However, many patients with HF progress to an advanced stage of the disease.[4] It is important to note that the advanced stage may be present in patients who do not develop severely reduced LVEF, but rather with symptoms refractory to appropriate treatment. Other criteria for defining advanced HF are severe cardiac dysfunction – with at least one of the following: LVEF ≤ 30%, isolated right ventricular failure, severe inoperable valvular heart disease, inoperable congenital abnormality, persistently elevated or increasing natriuretic values, severe left ventricular diastolic dysfunction or structural abnormalities -, severe episodes of pulmonary or systemic congestion and severe exercise intolerance.[5]

The valve heart disease guideline published by the American College of Cardiology in 2020 classifies the severity of valve disease based on the analysis of criteria such as symptoms, valve hemodynamics, valve anatomy, and repercussions of valve dysfunction on ventricular and vascular function, such as organ damage.[6] The progression of valve disease is classified into 4 stages distributed between A to D. It is worth noting that not all patients will be perfectly classified into a specific stage due to the great variability of disease presentations; however, valve disease is classified as severe asymptomatic in patients with a marked alteration of the valve, but there are mechanisms of ventricular compensation and as serious in patients who develop symptoms due to valve disorder.[7,8]

Coronary artery disease (CAD) is a prevalent condition, and over time, the global burden of CAD has increased significantly, resulting in millions of deaths annually and becoming one of the leading causes of mortality in the world.[9]

The most common risk factors and associated conditions are age >70 years, hypertension, diabetes, and significant atherosclerotic vasculopathy in other areas, such as carotid arteries, lower limbs, kidneys, and brain. All of these conditions are associated with population aging and are related to retirement.[2]

Manifestations of ischemia, such as functional class III or IV angina pectoris, especially when refractory to treatment or associated with complex ventricular arrhythmias, confer a worse prognosis for this population. Furthermore, changes in complementary exams also indicate greater severity, characterizing the patient as a serious heart disease. On the electrocardiogram, the presence of significant changes at rest, such as the presence of Q waves, ST depression, or negative ischemic T waves, suggest severe coronary artery disease. Tests for ischemia can demonstrate a large ischemic load, such as myocardial scintigraphy or stress echocardiography.[2-9]

The echocardiogram, even at rest, can show a reduction in ejection fraction, changes in segmental contractility, and changes in myocardial strain of greater severity. As well as cardiac magnetic resonance, when demonstrating fibrosis load using the myocardial delayed enhancement technique. Upon catheterization, the presence of multivessel disease, often with coronary anatomy unfavorable to revascularization, characterizes the greater severity and worse prognosis of these patients.[10]

Therefore, all these conditions lead to the characterization of the severity of heart disease, being important in the prognosis of these diseases and as an adjuvant in defining legal aspects for retirement institutions.

Keywords

Prognosis; Heart Diseases; Retirement.

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