Rehabilitation Practice Patterns for Patients with Heart Failure

The South American Perspective

Audrey Borghi-Silva, PhD, PT[a,*], Renata Trimer, PhD, PT[a], Renata G. Mendes, PhD, PT[a], Ross A. Arena, PhD, PT[b], Pedro V. Schwartzmann, PhD, MD[c]

KEYWORDS

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KEY POINTS

- The incidence and prevalence of heart failure (HF) in South America (SA) is currently a significant concern and will continue to be so for the foreseeable future.
- Chagas heart disease represents a main cause of HF in Latin America, despite progress in transmission control.
- Cardiac rehabilitation (CR) is recognized as an integral component of comprehensive HF care; however, SA suffers from an insufficient infrastructure to support current needs.
- It is essential to expand CR delivery and develop new strategies that could allow more HF patients to have access to services.
- New studies, conducted in SA, should be undertaken to assess the safety and efficacy of novel CR models, particularly in patients with Chagas HF.

HEART FAILURE INCIDENCE AND PREVALENCE IN SOUTH AMERICA

In most South American (SA) countries, the primary health concern has shifted from infectious diseases to noncommunicable chronic diseases.[1,2] Noncommunicable diseases are projected to continue to increase, especially in low- and middle-income countries. In addition, cardiovascular disease (CVD) is responsible for the largest proportion of current noncommunicable chronic disease incidence and prevalence, a trend that will continue into the future.[3–5]

Heart failure (HF) is an important public health issue in SA countries owing to its high incidence and prevalence, cost of care, and morbidity and mortality. The social, labor, and broader economic impacts are also substantial.[6] Demographic risk factors for the development of HF include older age, male sex, ethnicity, and low socioeconomic status.[7]

HF prevalence is related to, among other things, comorbidities and CVD risk factors, underlying disease state (eg, cardiomyopathy, hypertension, valve disease), and therapeutic advances for ischemic heart disease and other conditions that

[a] Cardiopulmonary Physiotherapy Laboratory, Federal University of Sao Carlos, Rod Washington Luis Km 235 - SP - 310, Sao Carlos, Sao Paulo 13565-90, Brazil; [b] Integrative Physiology Laboratory, Department of Physical Therapy, College of Applied Health Sciences, University of Illinois Chicago, 1918 West Taylor Street, Chicago, IL 60612, USA; [c] Clinical Hospital, Rehabilitation Institute Lucy Montoro, Ribeirao Preto School of Medicine, University of Sao Paulo, Monte Alegre, Ribeirão Preto, Sao Paulo 14048-900, Brazil

* Corresponding author. Cardiopulmonary Physiotherapy Laboratory, Department of Physical Therapy, Federal University of Sao Carlos, Rodovia Washington Luis Km 235, Sao Carlos, Sao Paulo, Brazil.
E-mail address: audrey@ufscar.br

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may lead to HF.[2,6] Rheumatic heart disease and Chagas' heart disease are still often attributed to HF in SA countries.[2]

Although HF is currently acknowledged as an important public health problem,[2,6,8] some studies indicate that the true impact this chronic condition has in SA countries remains unknown. Epidemiologic data are scarce and related to clinical trials, hospital-based studies, and reference centers.[9] Also, the prevalence of HF-reduced ejection fraction and HF-preserved ejection fraction is not well documented. The most relevant knowledge about HF is provided by North American and European studies; therefore, more studies are needed to guide the most appropriate and effective interventions in other countries as those in SA.

The Brazilian Public Health System Database (DATASUS) indicates there are currently 2 million patients with HF and 240,000 new cases being diagnosed each year. Moreover, HF is considered a major cause of hospitalization among patients diagnosed with CVD disease in the Brazilian Public Health System.[8,10,11]

In 1 Brazilian analysis of patients admitted to the hospital for decompensated HF, an ischemic etiology (30%) was the most common, followed by hypertensive (21%), valvular (15%), and Chagas (15%) etiologies.[12] Another Brazilian study, however, demonstrated that Chagas disease (41%) was the more frequent etiology for patients admitted with decompensated HF. The authors attributed this latter result to location, with the Midwest region of Brazil being one of the most prevalent areas for Chagas disease in Brazil.[8]

According to the National Register of HF in Chile, the main etiologies for HF were ischemic heart disease and hypertension, with elderly patients comprising the majority of those hospitalized for this condition. Noncompliance with diet or medical prescriptions and infections were important risk factors associated with HF decompensation.[13] Mean hospital stay was 10 ± 9 days and mortality was 5.6%,[14] with a significant proportion of cases having HF-preserved ejection fraction.[15] In Argentina, an ischemic etiology also seems to be more prevalent, with a lower prevalence of Chagas HF (10.5%).[16] This also seems to be the case in Colombia.[17]

Regarding hospital admissions, in 2007 the Brazilian Ministry of Health attributed 39.4% to HF (70% in the age group >60 years).[18] In-hospital mortality ranged from 6.58% to 6.95% and the average hospital stay was 5.8 days.[19] In Argentina, severe presentation on admission (eg, cardiogenic shock, acute pulmonary edema, anasarca) occurred in 30% of the cases. The median hospital stay was 7 days and in-hospital mortality 8%. After 90 days, readmittance was 24.5%, and post discharge mortality was 12.8%.[20] In general, the total number of HF hospital admissions has been decreasing. However, when hospitalized, patients are presenting with greater disease severity and poorer myocardial function, and are at greater risk of death.[21–23]

Mortality data from São Paulo State (Brazil) in 2006 demonstrated that HF or etiologies associated with HF were responsible for 15,336 deaths, 6.3% of the total.[24] Actually, mortality data associated with HF in Brazil as a whole has been declining,[25] although some regions have not demonstrated this trend.[26] This overall mortality reduction trend is likely associated with improvement in HF prevention and treatment.

THE CURRENT CARDIAC REHABILITATION DELIVERY MODEL IN SOUTH AMERICA

Despite major advances in HF therapies, most patients continue to experience exercise intolerance owing to intrinsic abnormalities in cardiac function coupled with varying degrees of maladaptive changes in the skeletal and respiratory musculature, vasculature, and pulmonary circulation. In this context, numerous studies demonstrate that regular exercise is safe and associated with substantial benefits in appropriately selected HF patients.[27] Cardiac rehabilitation (CR) programs are considered as an integral component to the comprehensive care of the patients with HF.[27] Exercise training (ET) and HF disease-related self-care counseling are both recommended by the American Heart Association and the American College of Cardiology,[27] as well as the Brazilian Society of Cardiology.[28]

The majority of CR centers in SA countries include resting and exercise assessments, physical activity counseling, ET, and education on nutrition and risk factor management. CR is traditionally divided into 4 phases that extend from a hospital-based stage to a maintenance phase, commonly numbered from I to IV.[29–31] CR programs for HF can be located within a hospital as part of a cardiology department, medical center, or in an off-site location. Staffing for CR typically comprises a multidisciplinary team that includes at least 2 health care professionals; a majority of the centers have a cardiologist, a physical therapist, and a nutritionist.[32]

An important study was carried out to assess the characteristics and current level of CR program implementation in SA countries by Cortes-Bergoderi and colleagues.[32] The investigators conducted a survey assessing the density of CR programs and demonstrated an extremely low