The importance of understanding the reality of heart failure in our community

La importancia de conocer la realidad de la insuficiencia cardíaca en nuestro medio

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Heart failure (HF) is a clinical syndrome caused by structural and/or functional impairment of the heart, characterized by objective evidence of congestion or insufficient tissue perfusion, associated with elevated natriuretic peptides (1-3). It has an increasing incidence and prevalence, related to increased life expectancy and the expansion of cardiovascular risk factors in the global population, generating high direct and indirect costs in health systems as a result of progressive hospitalizations due to decompensation of the disease. (1-3)

In this regard, it is essential to describe the main clinical, demographic, and socioeconomic characteristics of patients with HF, the available diagnostic tools, and the treatments used, in order to improve the management of this condition in our daily practice. Knowing our patients with HF is imperative from a healthcare perspective.

The registry SEPE-HF (*Santa Cruz epidemiology and research on heart failure*) has attempted to describe epidemiological aspects and the medical management of patients hospitalized for HF in different hospitals in the city of Santa Cruz de la Sierra (Bolivia), one of the most important cities in the country and therefore with a large volume of patients under follow-up. (4)

Firstly, it should be noted that most of the characteristics described in relation to risk factors, clinical management, and mortality are similar to other registries in the region, highlighting the increasing prevalence of HF with preserved ejection fraction and the high burden of diabetes mellitus and atrial fibrillation. (5)

In this cohort, Chagas cardiomyopathy is one of the main etiologies in patients with HF over 50 years of age, surpassing ischemic and valvular causes. This is clearly related to its geographical distribution, the chronicity of the disease, and the high rate of infestation in the population in previous years. These patients are frequently hospitalized for congestion or arrhythmic complications and have a poorer prognosis, highlighting the need for studies to evaluate the behavior of HF in patients with Chagas disease. (3)

It should also be noted that echocardiograms were performed on only 75% of hospitalized patients, which could be related to the unavailability of this resource in some centers. We must therefore continue to deepen our understanding of the difficulties faced by health systems in our region and how to create possible solutions.

With regard to the therapeutic approach, this registry highlights the opportunity that hospitalizations represent to optimize the entire spectrum of outpatient treatment, including specific drugs for HF, hygienic-dietary measures, and vaccination, in order to prevent further decompensations. (1-3)

Heart failure registries, such as ARGEN-IC and SEPE-HF, are a real stimulus for new population studies to understand how this disease behaves in our region. (4,5)

Ethical considerations

Not applicable.

Conflicts of interest

None declared.

(See authors' conflict of interests forms on the web).

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AUTHORS' REPLY

Dear Scatularo, Cristhian Emmanuel

We appreciate your interest in our work recently published in the journal of the Argentine Society of Cardiology. Your valuable comments on the clinical characterization of heart failure in our SEPE-HF registry representing the city of Santa Cruz de la Sierra, Bolivia, are greatly appreciated. The detailed description of epidemiological aspects, limitations in diagnostic access, and therapeutic opportunities provides a clear perspective on the challenges in managing HF in resource-limited settings. In this context, we are conducting a subanalysis of the SEPE-HF registry, which complements the study's overview by identifying associations between etiologies, comorbidities, and precipitating factors of decompensation. This detailed analysis allows us to identify mixed clinical patterns that could correspond to specific HF phenotypes with different prognostic and therapeutic implications. This approach favors the development of more personalized and effective strategies based on the local epidemiological reality.

It undoubtedly enriches the scientific discussion and encourages us to continue generating local evidence on HF.

Sincerely,

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Extreme Adaptation of the Cardiovascular System: A Look from Antarctica

Adaptación extrema del sistema cardiovascular: una mirada desde la Antártida

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The extreme living conditions in Antarctica represent a unique natural setting for studying human physiology. Recent work by Puigdomenech et al., carried out at the Belgrano II Antarctic Base, analyzes how prolonged confinement, photoperiod alteration, and extreme isolation affect cardiovascular function in a group of healthy military personnel over a 12-month period. (1)

The study shows a significant decrease in heart rate and blood pressure, both at rest and during exercise, accompanied by an increase in heart rate variability. This pattern, consistent with a predominance of vagal tone, suggests a positive neurovegetative adaptation, with no differences between the months of continuous light and darkness. The absence of atmospheric pollution may have favored this behavior.

These findings are consistent with previous studies conducted in similar contexts. Arendt et al. described how changes in light exposure at Antarctic bases affect circadian rhythms and autonomic functioning. (2) Mairesse et al. after a prolonged stay in Antarctica, also observed neurobehavioral and sleep adaptations reflecting a favorable physiological reorganization. (3)

Garrett-Bakelman et al., as part of the NASA Twins Study, reported a decrease in heart rate and blood pressure during prolonged space flights, findings that reinforce the analogy between Antarctic conditions and space missions. (4)

In addition, Rajagopalan et al. highlighted the direct link between exposure to environmental pollution and cardiovascular dysfunction, emphasizing the importance of the environment in regulating autonomic tone. (5) In this sense, Antarctica's clean air is positioned as a relevant modulating factor.

The article by Puigdomenech et al. not only provides original data, but also invites us to consider Antarctica as a valuable experimental model for research in extreme and space medicine. The implications of

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these results range from occupational medicine in remote conditions to the preparation of extra-planetary missions. Understanding how the cardiovascular system adapts in these contexts is key to addressing new challenges in science and global health.

Ethical considerations
Not applicable.

Conflicts of interest
None declared.

(See authors' conflict of interests forms on the web).

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AUTHORS' REPLY

Dear Dr. Brunella Bertazzo

We would like to thank you for your opinion about our work.

We agree with your opinions and the comparisons with other experiences in extreme living conditions.

We observed an increase in autonomic nervous system activity over cardiac function, which suggests an increased neurovegetative pattern, predominantly vagal.

This hibernation state resembles that of another mammal, the bear. In the boreal winter, it initiates a state of lethargy that allows it to conserve energy and survive the scarcity of food and the low temperatures typical of this season. Hibernation is not a constant deep sleep, but rather a significant reduction in metabolism, heart rate and body temperature.

Physiologically, its heart rate drops from 40-50 to about 10 beats per minute, respiratory rate drops by half, and temperature is reduced by 4 to 5 degrees Celsius.

Future research will provide us with additional information on biochemical parameters (acetylcholine, melatonin, cortisol, noradrenaline, etc.) that will explain more clearly the mechanisms involved in this physiological adaptability to these extreme conditions.

Ricardo Iglesias