Cardiopulmonary Ultrasound at Discharge

Ecografía cardiopulmonar al alta

MARÍA ALEJANDRA ALVARADO[1]

A constant challenge in patients with heart failure (HF) is the "vulnerable period" following discharge. Hospital discharge marks the period of greatest vulnerability, during which persistent residual congestion—often undetectable on clinical examination—set patients on a path toward early readmission or even death. Traditionally, we have relied on clinical evaluation. However, it is not always sufficient and often proves misleading, as subjective decongestion does not always reflect true tissue decongestion.

This is where congestion assessment using complementary imaging tools, such as cardiopulmonary ultrasound, is no longer merely a technological option but has become a clinical necessity. While echocardiography provides information on left ventricular filling pressures, right ventricular function, and inferior vena cava dynamics, pulmonary ultrasound offers a direct view of the pulmonary parenchyma. By quantifying B-lines, it is possible to objectively determine the extent of interstitial edema long before it becomes clinically apparent.

In this regard, some authors highlight the importance of real-time imaging assessment. Platz et al. demonstrated that residual congestion detected by pulmonary ultrasound is associated with worse short- and long-term outcomes in patients hospitalized for heart failure, underscoring the importance of pulmonary ultrasound. (1) Similarly, the PROFUND-IC registry reported by Pérez-Herrero et al. highlighted the prognostic value of pulmonary ultrasound and inferior vena cava assessment in elderly patients with acute heart failure (AHF). (2)

The recent study by Iroulart et al. is an ambitious study involving elderly, typically frail population hospitalized for "pure" AHF, after excluding secondary causes of HF. The authors evaluated the prognostic value of a cardiopulmonary ultrasound protocol before hospital discharge. Notably, the B-line count at discharge was the only variable that independently predicted readmission or death at 180 days. A threshold of seven B-lines doubled the risk of adverse events, with a specificity of 86%. Other echocardiographic findings, including the septal and lateral E/e' ratios, inferior vena cava dilation, and pulmonary systolic pressure, were associated with the endpoint in the univariate analysis, whereas ejection fraction and left atrial volume were not. (3)

The study focuses on the time of hospital discharge, a critical stage in clinical decision-making, when risk stratification becomes particularly valuable. These findings compel us to reconsider our discharge criteria and what constitutes therapeutic "success" in patients with AHF. Relying solely on clinical criteria while ignoring persistently elevated ultrasound markers of congestion is equivalent to sending patients home with subclinical decompensation. Cardiopulmonary ultrasound should not be regarded as an isolated test, but rather as a cornerstone for guiding real-time diuretic titration, allowing therapy to be individualized to achieve truly safe decongestion.

Ethical considerations

Not applicable.

Conflicts of interest

None declared.

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

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Correspondence: María Alejandra Alvarado. E-mail: ac.cardioec@gmail.com .

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[1] Heart Failure, Heart Transplantation, and Pulmonary Hypertension Service, Hospital Alfredo Paulson, Guayaquil, Ecuador

AUTHORS' REPLY

We thank the authors of the letter for their interest in our work and their insightful comments.

We agree that the post-discharge period represents a particularly vulnerable stage for patients with acute heart failure, during which persistent residual congestion plays a central role in the risk of rehospitalization and mortality. We also share the view that imaging tools, particularly pulmonary ultrasound, complement traditional clinical assessment by providing objective information on the degree of decongestion.

As the authors highlight, our results showed that the number of B-lines at discharge was the parameter with the highest independent prognostic value for death or rehospitalization at 180 days, whereas other echocardiographic markers of congestion were associated with the endpoint only in the univariate analysis. These findings are consistent with previous evidence and reinforce the concept that residual pulmonary congestion is an important target in pre-discharge assessment.

We believe that integrating cardiopulmonary ultrasound into the assessment of patients hospitalized with acute heart failure offers an opportunity to optimize risk stratification and guide future therapeutic strategies. However, prospective studies specifically designed to determine whether an ultrasound-guided strategy can improve clinical outcomes will be needed.

We once again thank you for your comments, which help emphasize the importance of objectively assessing congestion in this high-risk population.

Juan María Iroulart

A Look at the Reality of Cardiovascular Rehabilitation in Argentina

Una mirada a la realidad de la rehabilitación cardiovascular en Argentina

NICOLÁS MATIAS D'AMELIO[1, 2]

Cardiovascular rehabilitation (CVR) is a proven practice within the continuum of secondary cardiovascular prevention, with a proven impact on reducing mortality and readmissions.(1) Patients who adhere to rehabilitation programs experience improvements in their functional capacity and quality of life, as well as an increased ability to work and/or remain active, achieve greater autonomy, and, consequently, reduce the need for special care, disability, and loss of social productivity, all of which translate into lower workplace absenteeism, lower social costs, and greater economic participation. (2–4)

The study published in the Argentine Journal of Cardiology titled "RENACER-CV: National Registry of Cardiovascular Rehabilitation Centers in Argentina" by Ignacio Davolos et al. (5) sought to provide accurate information on the organizational characteristics, geographic coverage, human resources, care modalities, and equipment of CVR centers throughout the country. This is a clear example of how SAC's councils—in this case, the Exercise Cardiology Council—as well as its research and health policy divisions, can help identify opportunities for improvement and regional development at the national level.

The results obtained from the registry show an uneven distribution of CVR centers across Argentina, with a strong concentration in the Province of Buenos Aires and the Autonomous City of Buenos Aires, highlighting a regional inequity that limits effective access to this intervention and demonstrating a significant structural barrier for large segments of the population.

In addition to the afore mentioned geographic limitations, the registry revealed serious economic and health coverage shortcomings that emerge as an additional factor contributing to inequity, demonstrating that the lack of health insurance is one of the main factors limiting participation in CVR programs.

As a result, it is imperative to highlight the research group's efforts to gather accurate, high-quality information on the current state of CVR programs in Argentina. It is a call for the political spectrum to

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Correspondence: Nicolas D'Amelio. Email: nicolasdamelio@hotmail.com

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[1] Physician of the Pulmonary Hypertension Program at Hospital Gral. de Agudos Dr. JM Ramos Mejía, Autonomous City of Buenos Aires.
[2] Technical Secretary of the SAC Heart Failure and Pulmonary Hypertension Council.

act from the perspective of health planning, using the available information to guide public policy decisions and management of the Argentine health system.

Ethical considerations

Not applicable.

Conflicts of interest

None declared.

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

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AUTHORS' REPLY

We thank Dr. D'Amelio for reviewing our paper and for his comments.

We agree that cardiovascular rehabilitation is a fundamental strategy for secondary prevention and that the regional disparities and access barriers identified by RENACER-CV represent significant challenges for cardiovascular care in Argentina.

One of the registry's main objectives was precisely to describe the current state of cardiovascular rehabilitation programs in our country, providing evidence to highlight gaps in care and guide future actions aimed at improving access to and coverage of this intervention.

We appreciate the interest shown in our work and agree on the importance of continuing to generate local data that contributes to the development of health policies and organizational strategies aimed at more equitable cardiovascular care.

Ignacio Dávolos, Ivana Paz, Facundo Balsano, et al