

## Mnemonic to avoid being late in advanced heart failure: REMEMBER ME

### *Mnemotecnia para no llegar tarde en insuficiencia cardíaca avanzada: RECUÉRDAME*

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To the Editor,

Many heart failure (HF) patients progress to advanced HF. Patients with advanced HF comprise an estimated 1% to 10% of the overall HF population, and the prevalence is increasing due to the growing number of patients with HF and their better treatment and survival. (2, 3) Advanced HF is characterized by a progressive worsening of symptoms that are disabling for daily life, refractory to all therapies, and with high mortality rate, ranging from 25% to 75% yearly. (4)

The clinical course of HF can challenge even the most experienced clinician to correctly identify the optimal timing of referral to a HF specialist. Whereas some HF cases are abrupt and obvious, others are related to progressive diseases that evolve subtly over time. The addition of objective measures of exercise performance, quality of life, cardiac structure and function, biomarkers and laboratory assessments, and arrhythmia burden are useful in the ongoing evaluation of patients with chronic HF and may serve as important adjuncts to obviate the sense of “clinical stability”. (1)

A key question for physicians attending HF patients is which patients should be referred to a HF specialist. In the context of optimal medical and electrical therapies, there are certain indicators that should lead to a referral for evaluation of advanced therapies. Late referral may entail several consequences associated with worse outcomes. (1, 5, 6)

1. It may cause irreversible target organ damage, such as progressive renal or hepatic failure.
2. It may also cause progressive cardiac cachexia and frailty.
3. There is also the risk of progressing to fulminant deterioration and overt cardiogenic shock requiring temporary mechanical support (e.g., extracorporeal membrane oxygenation), with its concomitant risk.

4. It may cause progressive right ventricular failure—for which a long-term ventricular assist device is no longer an option—, which could be fatal in a patient ineligible for transplantation.

5. Patients may progress to severe irreversible pulmonary hypertension, resulting in a contraindication to cardiac transplantation.

For all these reasons, a comprehensive definition of advanced HF is key to choose adequate treatment, such as cardiac transplantation or long-term mechanical circulatory support devices, or simply to identify those who may require palliative care. (7) The American Society of Heart Failure, the American College of Cardiology/American Heart Association, and the Heart Failure Association of the European Society of Cardiology propose different definitions of advanced HF. (3, 8, 9) The common denominators of the three associations are the presence of severe symptoms, recurrent hospitalizations, extracardiac organ dysfunction, intolerance to prognostic modifying drugs, impaired exercise capacity in 6-minute walk test and cardiopulmonary exercise test, ventricular arrhythmia, and involuntary weight loss. Furthermore, the European definition includes echocardiographic, hemodynamic and natriuretic peptide parameters.

Based on these contemporary definitions, we have designed a mnemonic that may be particularly useful in early detection of patients who need referral to an advanced HF specialist; it is called “*RECUÉRDAME*” (Remember Me). It comprises multiple clinical parameters, hospitalizations, use of inotropic agents, drug intolerance, structural alteration and extracardiac organ damage (Figure 1). It is similar to the mnemonic (in English) called “I need help”. (10)

This reminder is based on a simple word in Spanish that reviews the main points that suggest we are dealing with an advanced HF patient. “*RECUÉRDAME*” supports the concept of early referral to

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<b>R</b>	<b>R</b> ecurrent hospitalizations due to heart failure
<b>E</b>	<b>E</b> demas and persistent congestion, with diuretics in high doses or in combination
<b>C</b>	<b>F</b> unctional <b>C</b> lass III or IV
<b>U</b>	<b>U</b> se of inotropic agents over the past year
<b>E</b>	<b>E</b> xercise limited by clinics in 6MWT and/or CPET
<b>R</b>	<b>S</b> evere <b>R</b> eduction of left ventricular function (LVEF<30%) or right ventricular function
<b>D</b>	<b>E</b> xtracardiac organ <b>D</b> amage: cachexia, hepatic or renal dysfunction, or type 2 pulmonary hypertension
<b>A</b>	<b>M</b> alignant <b>A</b> rrhythmias
<b>M</b>	<b>D</b> iscontinued prognosis-modifying <b>M</b> edication due to intolerance
<b>E</b>	<b>E</b> levated natriuretic peptides

6MWT: Six-minute walk test. CPET: Cardiopulmonary exercise test. LVEF: Left ventricular ejection fraction

**Fig. 1.** Mnemonic to detect patients with advanced heart failure

avoid irreversible progressive stages resulting from prolonged advanced HF, and may preclude advanced therapies—or implement them when they are already considered high risk and result in increased morbidity and mortality.

#### Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/ Supplementary material)

#### Ethical considerations

Not applicable.

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