

Noninvasive Remote Telemonitoring for Ambulatory Patients With Heart Failure and Emergency Department Services. Response

Telemonitorización no invasiva en pacientes con insuficiencia cardíaca y servicios de urgencias hospitalarios. Respuesta

To the Editor,

It was with great interest that we read the letter from Llorens et al.¹ about the risk profile and predisposing factors leading to hospitalization for heart failure (HF) in the 30 days following a visit to the emergency room for HF.

Our results in the CARME study² cannot be extrapolated to the population described by Llorens et al. Our study was not conducted in the emergency room context nor following admission in all cases; only a small percentage of patients had required hospitalization in the previous year and recruitment was not immediate. In fact, most participants were outpatients who regularly attended scheduled appointments in the HF unit. This contrasts with other published series that recruited patients immediately following discharge.

Llorens et al.¹ reveal the importance of being able to detect the subgroups of patients at greatest risk of readmission. We were unable to identify the patient profile that benefited most from telemonitoring, although our results may indicate that patients with HF who receive better treatment and health education are those who benefit most from telemonitoring—but this remains a speculation. As we recognized when describing the limitations of our study, to determine which patients would benefit more from any specific telemonitoring system we would have needed a broader-based sample that enabled us to conduct subgroup analyses. Although the CARME study² obtained highly positive results in terms of fewer admissions and fewer days' hospitalization for HF, the review of the literature on noninvasive telemonitoring showed that results vary; hence the great importance of selecting those patients at higher risk of readmission. For example, the discrepancies between recently published studies (eg, Chaudry et al.³) or conference presentations (eg, the Telemedical Interventional Monitoring in Heart Failure trial⁴) and the generally positive data described in the Cochrane review.⁵ The ability to detect the patients at greater risk of readmission does not necessarily imply they are really those who would benefit most from a telemonitoring program. However, subgroup analysis in some studies does suggest those who would benefit most might well be the patients who are most seriously affected. Consequently,

although Llorens et al's hypothesis that patients with a history of chronic HF decompensated by precipitating factors like anemia or high blood pressure could benefit more from a telemonitoring program is of interest, more studies are needed to establish precisely which patients should be selected for this type of intervention, and even which type of intervention would most benefit each patient.

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Mar Domingo, Josep Lupón,* and Antoni Bayes-Genis

Unitat d'Insuficiència Cardíaca, Hospital Universitari Germans Trias i Pujol, Badalona, Barcelona, Spain

*Corresponding author:

E-mail address: jlupon.germanstrias@gencat.cat (J. Lupón).

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REFERENCES

- Llorens P, Martín-Sánchez FJ, Herrero P, Perelló R. Telemonitorización no invasiva en pacientes con insuficiencia cardíaca y servicios de urgencias hospitalarios. *Rev Esp Cardiol.* 2011;64:948.
- Domingo M, Lupón J, González B, Crespo E, López R, Ramos A, et al. Telemonitorización no invasiva en pacientes ambulatorios con insuficiencia cardíaca: efecto en el número de hospitalizaciones, días de ingreso y calidad de vida. Estudio CARME (Catalan Remote Management Evaluation). *Rev Esp Cardiol.* 2011;64:277-85.
- Chaudhry S, Matterna J, Curtis J, Spertus J, Herrin J, Lin Z, et al. Telemonitoring in patients with heart failure. *N Engl J Med.* 2010;363:2301-9.
- Koehler F, Winkler S, Schieber M, Sechtem U, Stangl K, Böhm M, et al., TIM-HF Investigators. Telemedical Interventional Monitoring in Heart Failure (TIM-HF), a randomized, controlled intervention trial investigating the impact of telemedicine on mortality in ambulatory patients with heart failure: study design. *Eur J Heart Fail.* 2010;12:1354-62.
- Inglis SC, Clark RA, McAlister FA, Ball J, Lewinter C, Cullington D, et al. Structured telephone support or telemonitoring programmes for patients with chronic heart failure. *Cochrane Database Syst Rev.* 2010;8:CD007228.

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Malnutrition and Heart Failure

Desnutrición e insuficiencia cardíaca

To the Editor,

We would like to congratulate Bonilla et al.¹ on their study on malnutrition and mortality in hospitalized patients, which was recently published in *Revista Española de Cardiología*. We would also like to make some practical observations.

From a methodological point of view, we would like to point out that there may have been a sample selection bias. The study selection criteria excluded patients who were not able to stand up to be weighed or measured or who were not able to undergo the

Mini Nutritional Assessment® (MNA®) due to functional deterioration prior to admission or which developed during the hospital stay. The exclusion of patients with worse function probably resulted in a prevalence of malnutrition that was lower than the actual situation. Given that the demographic and comorbidity characteristics were not compared between the excluded and included patients, we cannot discount the possibility that there were differences, which constitutes a study limitation. We also think that it would be appropriate to clarify whether skinfold and circumference measurements were taken by one or several observers, as this could affect reproducibility and consistency.

The authors assessed the impact on survival of several isolated comorbidities. However, they did not measure the impact on survival of the comorbidities as a whole (Charlson index) or of the patients' functional situation, which have been reported in other

studies.^{2,3} There is a well-known relationship between nutritional state, functional deterioration, and comorbidity, and so we cannot discount the possibility that these factors acted as confounding variables that went unanalyzed.

Furthermore, the studies used to validate the nutritional screening tool (MNA[®]) were performed on patients over 65 years old. Although there are some studies in other age groups, this method is recommended and validated only for this one, as its creators have acknowledged^{4,5} and the European Society for Clinical Nutrition and Metabolism guidelines indicate.⁶ In this study, more than 16% of the patients were younger than 65 years. The MNA[®] consists of 18 items and can be completed in less than 15 min. To simplify and improve its use, the MNA[®] screening has been revalidated (Short Form MNA[®]), using data from 28 previously published studies.⁷ The new Short Form MNA[®] incorporates 3 nutritional situation cut-off points, which allows patients to be classified with only 6 questions. Furthermore, calf circumference can be used when the body mass index is not available.⁷ As such, the complete MNA[®] no longer needs to be used, and the new Short Form MNA[®] reduces the nutritional screening time to less than 5 min and is currently recommended for clinical use.⁷

As the authors note, it is important to detect malnutrition or risk of malnutrition early, because mortality quadruples.¹ The MNA[®] (and the new Short Form MNA[®]) is a simple, reproducible tool, validated for people over 65. It identifies risk of malnutrition before significant changes in weight or albumin levels occur, which allows direct nutritional intervention, monitoring of compliance, and assessment of the effectiveness of the nutritional intervention.⁵⁻⁷ We agree with the authors that nutritional support and/or monitoring can improve prognosis for these patients. There is evidence that the administration of nutritional supplements reduces mortality in older malnourished patients,⁸ meaning that it is important to detect malnutrition in these patients.

Luis Angel Sánchez-Muñoz,* Hector Aceves-Gamarra, Eduardo Mayor-Toranzo, and Cristina Rodríguez-Martín

Servicio de Medicina Interna, Hospital Clínico Universitario de Valladolid, Valladolid, Spain

*Corresponding author:

E-mail address: lsanchezmunoz@gmail.com (L.A. Sánchez-Muñoz).

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REFERENCES

1. Bonilla-Palomas JL, Gámez-López AL, Anguita-Sánchez MP, Castillo-Domínguez JC, García-Fuertes D, Crespin-Crespin M, et al. Influencia de la desnutrición en la mortalidad a largo plazo de pacientes hospitalizados por insuficiencia cardiaca. *Rev Esp Cardiol*. 2011. doi: 10.1016/j.recresp.2011.03.009.
2. García-Morillo JS, Bernabeu-Witte IM, Ollero-Baturone M, González de la Puente MA, Cuello-Contreras JA. Factores de riesgo asociados a la mortalidad y al deterioro funcional en la insuficiencia cardiaca del paciente pluripatológico. *Rev Clin Esp*. 2007;207:1-5.
3. Martínez-Sellés M, Vidán MT, López-Palop R, Rexach L, Sánchez E, Datino T, et al. El anciano con cardiopatía terminal. *Rev Esp Cardiol*. 2009;62:409-21.
4. Guigoz Y. The Mini Nutritional Assessment (MNA) review of the literature – What does it tell us? *J Nutr Health Aging*. 2006;10:466-85.
5. Anthony PS. Nutrition screening tools for hospitalized patients. *Nutr Clin Pract*. 2008;23:373-82.
6. Kondrup J, Allison NSP, Elia YM, Vellas ZB, Plauthy ZM. ESPEN Guidelines for Nutrition Screening 2002. *Clin Nutr*. 2003;22:415-21.
7. Kaiser MJ, Bauer JM, Rámsch C. The short-form Mini Nutritional Assessment[®] (MNA-SF): Can it be improved to facilitate clinical use? *J Nutr Health Aging*. 2009;13 Suppl 2:S16.
8. Milne AC, Potter J, Vivanti A, Avenell A. Protein and energy supplementation in elderly people at risk from malnutrition. *Cochrane Database System Rev*. 2009;CD003288.

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