Similarly, a prospective study of almost 500 elderly patients with HF and a mean age of 85 years determined that 58% of patients were frail.[3] These patients had almost double the 1-year mortality rate, as well as increased risk of readmission and functional decline during follow-up. A systematic review and meta-analysis confirmed the elevated prevalence of this condition in patients with HF,[4] particularly in the elderly population, and its presence was not associated with functional class. The authors of that study also reported a relationship between frailty and HF syndrome and stressed its substantial prognostic implications. Accordingly, all patients with HF should be systematically assessed to detect potentially modifiable situations and thereby enable individualized treatments aimed at reversing these situations.

Regarding natriuretic peptides, the cutoff values for the diagnosis and prognostic stratification of HF in the elderly population are poorly established, and increases are sometimes seen with no apparent structural heart disease or changes in comorbidity-related concentrations. In recent work[5] that included 289 patients older than 75 years admitted due to acute HF (with in-hospital, 1-year, and 5-year mortality rates of 10%, 36%, and 77% and a median survival of 2.2 years), the presence of anemia, renal failure, diabetes, systolic hypertension at admission, moderate-to-severe tricuspid regurgitation, and high concentrations of N-terminal pro-B type natriuretic peptide (NT-proBNP) were independent predictors of mortality, indicating that the prognosis of elderly patients with HF is determined by cardiac causes and their comorbidities. The NT-proBNP level was the most powerful predictor of prognosis, with an optimal cutoff value of 8.275 pg/mL at 1 year. There was no relationship between peptide levels and age. The study limitations include its retrospective design and a lack of consideration of variables that could have affected prognosis during follow-up (cognitive decline, nutritional status, baseline quality of life, and frailty).

Finally, clarification is required of multiple aspects related to the management of cardiovascular diseases in elderly patients.[6] A recent document, in the section concerning HF, stressed the importance of new studies that specifically analyze the role of drugs, devices, and other therapies in this population, paying special attention to the main comorbidities. Strategies are also needed to improve the health care process, accelerate symptom recognition and diagnosis, and boost the application of palliative and end-of-life care.

Pablo Díez-Villanueva,[a,*] Albert Ariza-Solé,[b] Javier López,[c] Héctor García-Pardo,[d] F. Javier Martín-Sánchez,[e] and Manuel Martínez-Sellés[f]

[a]*Servicio de Cardiología, Hospital Universitario de La Princesa, Madrid, Spain*
[b]*Servicio de Cardiología, Hospital Universitario de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Spain*
[c]*Servicio de Cardiología, Instituto de Ciencias del Corazón (ICICOR), Hospital Clínico de Valladolid, Valladolid, Spain*
[d]*Servicio de Cardiología, Hospital Santos Reyes, Aranda de Duero, Burgos, Spain*
[e]*Servicio de Urgencias, Hospital Clínico San Carlos, Instituto de Investigación Sanitaria del Hospital Clínico San Carlos (IdISSC), Facultad de Medicina, Universidad Complutense, Madrid, Spain*
[f]*Servicio de Cardiología, Hospital General Universitario Gregorio Marañón, CIBERCV, Universidad Complutense, Universidad Europea, Madrid, Spain*

* Corresponding author:
E-mail address: pablo_diez_villanueva@hotmail.com
(P. Díez-Villanueva).

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Selection of the Best of 2017 in Geriatric Assessment of Elderly Patients With Aortic Stenosis

Selección de lo mejor del año 2017 sobre valoración geriátrica en la estenosis aórtica del paciente anciano

To the Editor,

Geriatric assessment of elderly individuals with significant aortic stenosis (SAS), also called "severe", has received growing attention in recent years. Additionally, the prognostic role of frailty has been consolidated in recent months in large-scale studies.

Shimura et al.[1] analyzed the prognostic impact of the Clinical Frailty Scale (CFS) in 1215 patients from the Optimized CathEter vAlvular iNtervention (OCEAN-TAVI) registry who underwent transcatheter aortic valve implantation (TAVI). The CFS is a semiquantitative tool that classifies individuals into 1 of 9 categories, from 1 (very fit) to 9 (terminally ill). In this study, 1-year mortality increased progressively with each CFS category.

Little comparative information is available on the different frailty scales. Afilalo et al.[2] compared the ability of 7 different frailty scales (Fried criteria, Fried+, CFS, Short Physical Performance Battery, Bern scale, Green test, and the Essential Frailty Toolset [EFT]) to predict 1-year mortality in 1020 patients with SAS who underwent either surgical aortic valve replacement or TAVI. The EFT, which includes

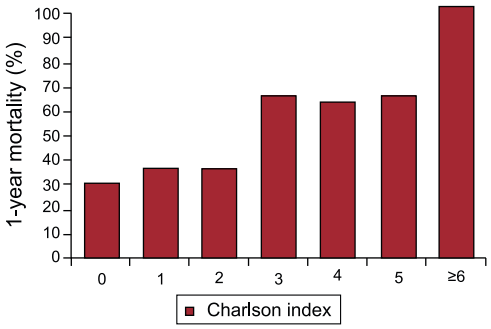

Figure 1. One-year mortality based on degree of comorbidity. Adapted with permission from Bernal et al.[3]

time to stand from a seated position, cognitive function (Mini-Mental State Examination), hemoglobin, and serum albumin, showed better predictive value than the other tools analyzed.

As in octogenarians, good short-term results have been found in nonagenarians who undergo TAVI, although there is controversy about the mid-term prognosis and impact of comorbidity, frailty, and other variables linked to aging on functional outcomes and quality of life. A substudy[3] of the PEGASO and IDEAS registries analyzed the impact of comorbidity on treatment and prognosis in nonagenarians with SAS (n = 177). Of the participants, 31.6% had a low degree of comorbidity (Charlson Comorbidity Index [CCI] < 3). The management was conservative in 84.7%. There was a strong association between the CCI and 1-year mortality, particularly at a CCI ≥ 3 (Figure 1). Nonetheless, the therapeutic strategy was not significantly affected by the degree of comorbidity.

In addition, Okoh et al.[4] analyzed the impact of frailty on prognosis and functional outcomes in 75 nonagenarians who underwent TAVI. Frailty was assessed using a score ("frailty score" [FS]) based on grip strength, gait speed, albumin, and activities of daily living. Health status was evaluated at baseline and at 30 days (Kansas City Cardiomyopathy Questionnaire). In total, 30 patients (40%) met the criteria for frailty (FS $\geq 3/4$). Frailty was associated with higher 30-day and 2-year mortality. Interestingly, functional status significantly improved only in patients without frailty criteria (Figure 2).

Bagiensky et al.[5] recently studied the incidence of delirium after a TAVI procedure and its prognostic impact. Of the 141 patients analyzed, 29 had delirium in the first 4 postprocedural days. Development of delirium was associated with transapical access and a higher amount of intraprocedural contrast agent, as well as the presence of frailty. Patients with delirium had higher rates of 30-day and 1-year mortality. This association remained after adjustment for baseline characteristics.

Finally, the role of cardiac rehabilitation in frail elderly patients with SAS has also been investigated. Tarro et al.[6] studied 135 patients older than 70 years undergoing surgery or TAVI. The 6-minute walk test was performed, as well as evaluation of functional status (Barthel index), risk of falls (Morse Fall Scale), and comorbidity (CIRS-CI). An intensive rehabilitation program was performed for 3 months. The patients who underwent TAVI had higher degrees of comorbidity, disability, and risk of falls than surgical patients and also tolerated a lower workload and were more likely to require a tailored training program. No complications were associated with the rehabilitation and there was greater functional improvement in both groups after the program, indicating that the rehabilitation program is feasible and safe and can contribute to postprocedural symptomatic improvements in these patients.

Thus, the most recent data clearly strengthen the role of geriatric assessment of elderly individuals with SAS by conclusively helping to identify patients with better postprocedural prognostic, symptomatic, and quality of life outcomes. Optimization of care to elderly patients with SAS and avoiding futile interventions are currently probably the aspects with the greatest room for improvement.

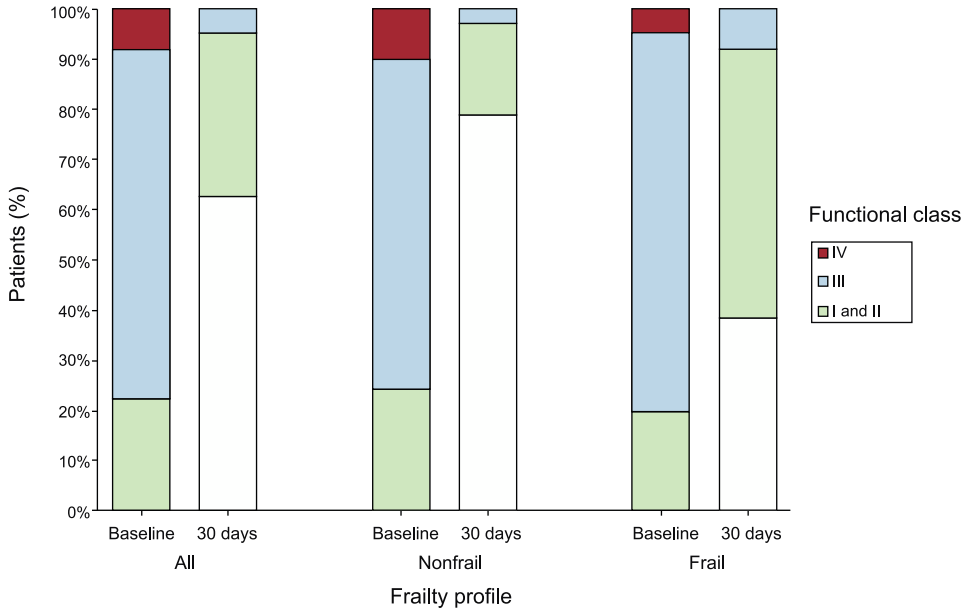

Figure 2. Changes in the functional class after TAVI in the total population and in frail and nonfrail patients. Percentage of patients with each degree of functional class before and after the procedure based on the frailty profile. TAVI, transcatheter aortic valve implantation. Adapted with permission from Okoh et al.[4]

Eva Bernal,[a] Albert Ariza-Solé,[b,*] Pablo Díez-Villanueva,[c] Antoni Carol,[d] Rafael Romaguera,[a] and Manuel Martínez-Sellés[e]

[a]*Servicio de Cardiología, Hospital Universitari Germans Trias i Pujol, Badalona, Barcelona, Spain*
[b]*Servicio de Cardiología, Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Spain*
[c]*Servicio de Cardiología, Hospital Universitario de La Princesa, Madrid, Spain*
[d]*Servicio de Cardiología, Hospital Moisès Broggi, Sant Joan Despí, Barcelona, Spain*
[e]*Servicio de Cardiología, Hospital General Universitario Gregorio Marañón, CIBERCV, Universidad Complutense, Universidad Europea, Madrid, Spain*

* Corresponding author:
E-mail address: aariza@bellvitgehospital.cat (A. Ariza-Solé).

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Selection of the Best of 2017 on Acute Cardiac Care

Selección de lo mejor del año 2017 en cuidados críticos cardiológicos

To the Editor,

Of the noteworthy studies published this year on the treatment of acute cardiac patients, we would to like to highlight 5 due to their practical impact.

A substudy of the IABP-SHOCK II trial[1] has developed a simple score to predict 30-day mortality in patients in cardiogenic shock, based on 480 patients and with external validation. The variables comprising the model were age, history of stroke, glucose at admission, creatinine at admission, lactate at admission, and TIMI flow grade <3 after PCI. According to the score results, patients were classified into 3 risk groups, with a good correlation (C statistic = 0.74) with short-term mortality (23.8%, 49.2%, and 76.6%, respectively).

Another notable study in patients in cardiogenic shock was performed by Ouweneel et al.[2] This randomized multicenter study in patients with ST-segment elevation acute myocardial infarction (STEMI), orotracheal intubation, and cardiogenic shock compared the Impella CP percutaneous circulatory support device with the intra-aortic balloon pump (IABP). The study included 48 consecutive patients (24 with the Impella CP and 24 with the IABP). There were no differences between the 2 groups in terms of 30-day mortality: 46% in the Impella CP group and 50% in the IABP group (P = .92). The patients in the Impella group showed higher rates of major bleeding. A limitation of the study is the high percentage of survivors of cardiac arrest (44 of 48), with brain damage as the primary cause of death, which complicates interpretation of the results.

The TTH48 trial concerned cardiac arrest survivors and hypothermia.[3] This multicenter and randomized study was performed in survivors of a cardiac arrest of presumed cardiologic origin, with a shockable initial rhythm in 88% of patients, and compared 2 therapeutic hypothermia regimens of different durations. Participants received therapeutic hypothermia at 33 °C for either 24 hours (n = 179) or 48 hours (n = 176). There were no differences between the 2 groups in the primary outcome, good neurological outcome (CPC 1-2 at 6 months): 69% in the 48-hour hypothermia group vs 64% in the 24-hour group (P = .33). The 48-hour hypothermia group had more adverse events and longer mechanical ventilation times. Accordingly, the effectiveness of therapeutic hypothermia vs normothermia remains unclear.

The "prophylactic" use of levosimendan in patients with significant ventricular dysfunction who undergo cardiac surgery is a recurring debate in clinical practice. The results of the multicenter LEVO-CTS study,[4] performed in patients with ventricular dysfunction (ejection fraction ≤ 35%) and scheduled for cardiac surgery (revascularization or valve surgery) provide valuable information on this subject. Levosimendan before the procedure (n = 442) was compared with placebo (n = 440). The primary outcome was a composite of 30-day mortality, need for renal replacement therapy at 30 days, perioperative acute myocardial infarction at 5 days, and use of mechanical ventilation at 5 days. There were no differences between the 2 groups (24.5% in the levosimendan group vs 24.5% in the placebo group; P = .98). The incidences of low cardiac output and the need for inotropic agents were significantly lower in the levosimendan group, without affecting the clinical results of the study. Other publications have explored the use of levosimendan during surgical interventions in these patients; the results were similar and there were no benefits on outcomes vs placebo.[5]

Finally, we would like to highlight the recent DETO2X-SWEDEHEART trial.[6] This randomized multicenter study explored the systematic use of oxygen in patients with acute coronary syndrome and baseline saturation > 90%. An oxygen therapy group (6-12 hours; n = 3311) was compared with an ambient air group (n = 3318). There were no differences in the primary end point of 1-year mortality (5.0% and 5.1%, respectively; P = .8) or in the other secondary end points. The power of the study was lower than calculated because the authors expected a higher incidence of mortality in both groups, which might be because 24.4% of the included patients had diseases other than heart disease.