Oxygen therapy and palliative care in patients with heart failure. Response

Oxigenoterapia y cuidados paliativos en pacientes con insuficiencia cardiaca. Respuesta

To the Editor,

We are grateful to Carratalá et al.[1] for their response to our article. We fully agree with their comments on the palliative care of heart failure patients, although it is important to note that the studies they highlight essentially relate to patients with acute decompensated heart failure. The study by Rochwerg et al.[2] centers exclusively on noninvasive ventilation of patients with acute respiratory failure, while the study by Tinelli et al.[3] is a meta-analysis including 775 acute respiratory failure patients treated in the emergency department. The Tinelli et al. study compared noninvasive ventilation, high flow nasal cannula oxygen with conventional oxygen therapy and found no benefit of high flow nasal cannula oxygen over the other treatments in relation to the need for intubation, treatment failure, hospitalization, and mortality; moreover, the best-tolerated treatment was conventional oxygen therapy.

There are also other factors that should be considered. Our consensus document is the first to address palliative care in heart failure in Spain. Palliative care is considered an essential component of the treatment of heart failure patients,[1] yet it is not prioritized in Spain, where its use in this context is largely tokenistic, especially when contrasted with the extensive access to palliative care provided to cancer patients.[4] Our document has a general focus and does not go into the specific details of each treatment option for heart failure patients in palliative care. Instead, we establish general care guidelines and emphasize the need to consider and implement them early and progressively in the care of these patients. We are aware that the preparation of a more exhaustive document would probably require a dedicated supplement involving other scientific societies, in order to include input from all stakeholders with an interest in the development of consensus protocols for the treatment of heart failure patients.

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REFERENCES

1. García Pinilla JM, Díez-Villanueva P, Bover Freire R, et al. Documento de consenso y recomendaciones sobre cuidados paliativos en insuficiencia cardiaca de las Secciones de Insuficiencia Cardiaca y Cardiología Geriátrica de la Sociedad Española de Cardiología. *Rev Esp Cardiol.* 2020;73:69–77.
2. Rochwerg B, Brochard L, Elliott MW, et al. Official ERS/ATS clinical practice guidelines: noninvasive ventilation for acute respiratory failure. *Eur Respir J.* 2017;50. pii: 1602426.
3. Tinelli V, Cabrini L, Fominskiy E, Franchini S, Ferrante L, Ball L. High flow nasal cannula oxygen vs. conventional oxygen therapy and noninvasive ventilation in emergency department patients: a systematic review and meta-analysis. *J Emerg Med.* 2019;57:322–328.
4. Gastelurrutia P, Zamora E, Domingo M, Ruiz S, González-Costello J, Gomez-Batiste X. Necesidad de cuidados paliativos en insuficiencia cardiaca: estudio multicéntrico utilizando el cuestionario NECPAL. *Rev Esp Cardiol.* 2019;72:870–873.

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Administrative data and volume of surgical revascularization. A note of caution

Utilización de datos administrativos y el volumen de cirugía coronaria. Una nota de precaución

To the Editor,

The article by Goicolea Ruigómez et al.[1] evaluated the results of coronary artery bypass grafting (CABG) in Spain from 2013 to 2015. The study established a proportional relationship between the hospital procedure volume and the in-hospital mortality and rehospitalization rates. The authors' recommendations were to concentrate CABG procedures in high-volume centers in Spain and publish the risk-adjusted outcomes of these interventions.

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In both CABG and percutaneous coronary interventions (PCI), there is a clear link between a higher volume per center and better outcomes.[2] In the present article, the volume of CABG procedures was low (less than 200/y) in 87% of our centers. However, the total mortality rate reported in the Spanish Society of Thoracic and Cardiovascular Surgery registries of interventions for 2013 to 2015 was 2.8%, a value lower than the 3% reported in this article for CABG alone. In addition, the risk-adjusted mortality rate has been persistently < 0.6, excellent results that are comparable to those recorded by the American (The Society of Thoracic Surgeons) and European (European Association for Cardio-Thoracic Surgery) societies.

The risk-adjusted in-hospital mortality and rehospitalization rates reported indicate that the outcome depends on the hospital volume of surgeries. However, extrapolation of data from administrative databases to analyze clinical events is subject to considerable bias. Variability in the CABG volume and mortality when clinically and administratively contrasted is, in both cases, an unacceptable 20%.[3] It is telling that cardiogenic shock is listed among the comorbidities of patients "scheduled" for CABG treatment, and the

article mentions that data provided by the Spanish National Health System are not based on "robust and publicly available risk-adjusted outcome indicators supported by consensus between scientific societies and health care authorities."[1] Among the total number of patients who underwent CABG, 15.9% were excluded, mainly those with a principal diagnosis of acute myocardial infarction. Non-Q wave acute myocardial infarction is one of the most common indications for surgery in our centers, and specifically, for CABG alone. Only 64.3% of patients included exclusively underwent CABG, and the additional cardiac procedures were not specified in the remainder. One must be extremely rigorous in drawing conclusions regarding the outcome of CABG by including only patients treated with this procedure alone, to avoid committing serious selection bias with an alarming impact on the results. For these reasons, caution is required when interpreting the conclusions of this article.

Clustering CABG procedures is not the solution to the low volume of coronary surgeries per center in our country. In many Spanish centers[4] there has been a disproportionate indication for PCI in patients with left main coronary artery or multivessel disease. The mean number of coronary surgeries in Europe is 380/million population, whereas in Spain it is 108/million; the PCI:CABG ratio is 6:1 in Europe and 2:1 in the United Kingdom and the United States, whereas it is 14:1 in Spain.[5] Obviously, as PCI use has grown, the number of CABG performed has decreased. Although PCI provides good immediate outcomes in this context, the current scientific evidence suffices to ensure that it is associated with higher mortality and major adverse events than CABG, particularly at mid and long term.[6]

Lastly, we completely agree that there is a need to publish outcomes, not only of CABG, but also of PCI, and at both short- and long-term. This is especially important in the local setting of each center. Only when the outcomes of both these treatments are known will cardiology teams be able to select the most appropriate individualized treatment for each patient.

We congratulate the authors for carrying out a study that aims to optimize excellence in the treatment of multivessel disease.

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REFERENCES

1. Goicolea Ruigómez FJ, Elola FJ, Durante-López A, Fernández Pérez C, Bernal JL, Macaya C. Coronary artery bypass grafting in Spain Influence of procedural volume on outcomes. *Rev Esp Cardiol.* 2020;73:488–494.
2. McGrath PD, Wennberg DE, Dickens Jr JD et al. Relation between operator and hospital volume and outcomes following percutaneous coronary interventions in the era of the coronary stent. *JAMA.* 2000;284:3139–3144.
3. Mack MJ, Herbert M, Prince S, Dewey TM, Magee MJ, Edgerton JR. Does reporting of coronary artery bypass grafting from administrative databases accurately reflect actual clinical outcomes? *J Thorac Cardiovasc Surg.* 2005;129:1309–1317.
4. Lozano I, Vegas JM, Rondan J, Segovia E. Factors contributing to the low rate of surgical revascularization in Spain. *Rev Esp Cardiol.* 2015;68:911.
5. Cuerpo-Caballero G, Muñoz C, Carnero M, López-Menéndez J. En respuesta al Documento de Posicionamiento de la Sociedad Española de Cardiología titulado: "Intervencionismo percutáneo cardiológico y cirugía cardiaca: el paciente en el centro de los procesos". *Cir Cardiov.* 2019;26:179–182.
6. Neumann FJ, Sousa-Uva M, Ahlsson. et al. 2018 ESC/EACTS Guidelines on myocardial revascularization. *Eur Heart J.* 2019;40:87–165.

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Administrative data and volume of surgical revascularization volume. A note of caution. Response

Utilización de datos administrativos y el volumen de cirugía coronaria. Una nota de precaución. Respuesta

To the Editor,

We appreciate the interest shown in our article[1] by Gualis Cardona et al., and we agree that the outcomes of coronary intervention should be public and transparent. While we agree on this principle, we would also like to discuss some of the methodological points raised by Gualis Cardona et al.

1. Our study did not analyze the existence of a proportional a relationship between the volume of interventions and outcomes. We found a marked dispersion and an association between volume and outcomes (risk-adjusted in-hospital mortality and readmissions) when we compared hospitals by volume ("high-volume" vs "low-volume").
2. The differences in the crude mortality rate in isolated coronary artery bypass grafting (CABG) between our study and the administrative register (3% vs 2.8%) do not appear to be relevant, as there are differences in the patient selection and not all hospitals are included in the Spanish Society of Cardiothoracic Surgery register.
3. Unlike the reference cited by Gualis Cardona et al.,[2] more recent articles show the validity of administrative databases for predicting mortality risk in CABG.[3] However, the validity of using the National Minimum Dataset for predicting outcomes in CABG must be studied, as has been done for acute coronary syndrome.[4]
4. As described in our article, we excluded CABG procedures performed during an episode of acute myocardial infarction, to select, as far as possible, for elective surgery.
5. Our study listed the cardiac surgical procedures associated with non-isolated CABG: 35.*; 37.32-4;37.5*; 37.60; 37.63-68 and 37.90.

Concentrating CABG programs may help us reach the minimum volumes established by the international scientific societies (references 5 and 6 in our original article). The risk-adjusted outcomes should be a guide for both planning the health care resources required and choosing the most appropriate procedure in each patient. Analyzing the causes of apparently suboptimal outcome markers of health (for coronary intervention or any other healthcare activity) in different hospitals is an ethical obligation for all those involved in health care.

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