

Regardless of treatment, prognosis is clearly worse in these patients and depends on the type of MC. In a series published by French et al.,⁴ in-hospital survival and 90-day survival were 97% and 96% in patients without MC, respectively. However, in-hospital survival and 90-day survival were 43% and 27% in patients with FWR, 73% and 73% in those with PMR, and 60% and 20% in those with IVSR, respectively. Overall 30-day survival was 63.2%, which varied according to the type of MC: 64.3% in FWR, 66.6% in PMR, and 50% in IVSR.

In conclusion, the incidence of MC has decreased in the era of PA, but remains associated with high mortality; however, the mortality rate could decrease in a group selected for surgery. Early diagnosis and treatment would be improved by remaining alert to the specific characteristics of each patient. The incidence of MC could be reduced by the widespread use of PA protocols with shorter ischemia times. Multicenter registries with more patients are needed to better understand the predictors of MC and to determine which subgroups would derive the most benefit from surgical treatment.

Javier Navarro-Cuartero, Juan Gabriel Córdoba-Soriano,*
 Jesús Jiménez-Mazuecos, Antonio Gutiérrez-Díez,
 Arsenio Gallardo-López, and Driss Melehi

Servicio de Cardiología, Complejo Hospitalario Universitario de
 Albacete, Albacete, Spain

*Corresponding author:

E-mail address: jgcordobas@hotmail.com (J.G. Córdoba-Soriano).

Available online 18 July 2016

REFERENCES

1. Goldberg RJ, Gore JM, Alpert JS, Osganian V, de Groot J, Bade J, et al. Cardiogenic shock after acute myocardial infarction: incidence and mortality from a community wide perspective 1975–1988. *N Engl J Med*. 1991;325:1117–22.
2. Goldberg RJ, Samad NA, Yarzebski J, Gurwitz J, Bigelow C, Gore JM. Temporal trends in cardiogenic shock complicating acute myocardial infarction. *N Engl J Med*. 1999;340:1162–8.
3. Kutty RS, Jones N, Moorjani N. Mechanical complications of acute myocardial infarction. *Cardiol Clin*. 2013;31:519–31.
4. French JK, Hellkamp AS, Armstrong PW, Cohen E, Kleiman NS, O'Connor CM, et al. Mechanical complications after percutaneous coronary intervention in ST-elevation myocardial infarction (from APEX-AMI). *Am J Cardiol*. 2010;105:59–63.
5. Steg G, James SK, Atar D, Badano LP, Blomstrom-Lundqvist C, Borger MA, et al. Guía de práctica clínica de la ESC para el manejo del infarto agudo de miocardio en pacientes con elevación del segmento ST. *Rev Esp Cardiol*. 2013;66: 53. e1–e46.
6. Figueras J, Alcalde O, Barrabés J, Serra V, Alguersuari J, Cortadellas J, et al. Changes in hospital mortality rates in 425 patients with acute ST-elevation myocardial infarction and cardiac rupture over a 30-year period. *Circulation*. 2008;118:2783–9.

<http://dx.doi.org/10.1016/j.rec.2016.04.032>

Quality of Methods and Results Reporting in Cost-effectiveness Analyses of Cardiovascular Interventions



La calidad en la presentación de métodos y resultados de los análisis de coste-efectividad de intervenciones cardiovasculares

To the Editor,

Cardiovascular diseases are the principal cause of death in most economically developed countries, including Spain, and cause significant loss of health.¹ Cost-effectiveness analysis is an important tool that can help clinicians, researchers, and policy makers to determine the efficiency of health care interventions, establish financing priorities for health services, and evaluate the effectiveness of these services in terms of health benefits and costs.² The information provided by cost-effectiveness analysis thus has the potential to impact public health. Therefore rigor in clinical practice and health care policy requires careful evaluation of methods and results reporting in cost-effectiveness analyses to establish their validity. Previous studies systematically evaluated the methodology and general results of cost-effectiveness analyses that express their results as the cost per quality-adjusted life year (QALY) gained.^{3,4} However, to date, there has been no sufficiently detailed cost-effectiveness analysis of cardiovascular interventions in Spain. Such an analysis could provide comprehensive information about the state of research at a national level; the completeness of information reporting at this level is generally less well understood, even though specific health care priorities and research requirements are often established nationally. Here, we examine the quality of methods and results reporting in cost-effectiveness analyses of cardiovascular interventions in Spain.

Source data for this analysis were obtained from a previous systematic literature review of cost-effectiveness analyses of health care interventions published in Spain between 1989 and 2014.⁴ This literature review was conducted in PubMed

and complementary databases (Scopus, ISI Web of Science, databases from the University of York Centre for Reviews and Dissemination, *Índice Médico Español*, *Índice Bibliográfico Español en Ciencias de la Salud*, and technology evaluation reports). From this review, we identified cost-effectiveness analyses of cardiovascular interventions that used QALYs as an outcome measure carried out in Spain up until December 2014. Based on existing documents and the review team's experience,⁴ we identified the basic elements of correct methods reporting in cost-effectiveness analyses. Data from each study were extracted by 2 reviewers. All data analysis was conducted with STATA v. 13 (StataCorp LP; College Station, Texas, United States).

In total, 47 cost-effectiveness analyses were included. The studies are grouped by publication year in the [Figure](#) of the [supplementary material](#), and the main study characteristics are summarized in the [Table](#) of the [supplementary material](#). Most studies (n = 45 [95.7%]) did not indicate the research protocol used or provide access to it; moreover, most studies (n = 43 [91.5%]) used mathematical simulations. Fewer than half the analyses (n = 21 [44.7%]) provided a suitable description of the population characteristics. The interventions examined in most analyses (n = 30 [63.8%]) were classified as pharmacological therapies, and half the analyses (n = 24 [51.1%]) included an active alternative as the comparator. Data on intervention efficacy came from a single study of 21 analyses (44.7%), and only 9 analyses (19.1%) used synthetic estimates derived from systematic reviews and meta-analyses,⁵ even though such evidence is considered to be of high quality and scientifically rigorous. The methods used to calculate QALYs gained are shown in the [Table](#). Few analyses (n = 5 [10.6%]) presented a complete description of the methods used to calculate QALYs. Most of the reports (n = 31 [66.0%]) stated that the evaluated intervention produced "more cost and more QALYs" than the comparator. Most of the analyses (n = 42 [89.4%]) reported favorable results. The main source of funding was the private sector, which supported 27 (57.4%) of the analyses. In 17 studies (36.2%) there was no declared conflict of interest.

Table

Descriptive and Reporting Characteristics of Methods Used in Calculating QALYs in Cost-effectiveness Analyses of Cardiovascular Interventions in Spain

Category	Characteristic	No. (%)
Health-state classification system	Euro-QoL 5D	18 (38.3)
	Other (eg, SF-36)	5 (10.6)
	Not reported	24 (51.1)
Source or informant	Patient or caregiver	22 (4.7)
	Community	2 (4.3)
	Not reported	23 (48.9)
Measurement technique used to evaluate health state	Time tradeoff	3 (6.4)
	Visual analog scale	1 (2.1)
	Standard gamble	2 (4.3)
	Tariffs for classification	1 (2.1)
	Not reported	41 (87.2)
Reference country/region for utility weighting	Local or national population (eg, Spain)	7 (14.9)
	Citation of the international literature	35 (74.5)
	Not reported	5 (10.6)

QALY, quality-adjusted life years.

The results presented here indicate room for improvement in the reporting of important features of cost-effectiveness analyses for cardiovascular interventions. Without complete and transparent information about how studies were performed, it is difficult to evaluate the validity of their results or the relevance of their conclusions. This concern has been addressed through the proposal of publication guidelines for cost-effectiveness analyses.⁶ These tools promote consistent reporting of a minimal information set that can serve as a benchmark for researchers carrying out these studies and for the reviewers and editors tasked with evaluating them for publication. The introduction of these guidelines into the peer review process could improve the quality of published cost-effectiveness analyses on cardiology. Authors, reviewers, and editors can promote complete reporting in cost-effectiveness analysis by using and promoting these guidelines as an important way to improve the transparency and completeness of published results.

FUNDING

F. Catalá-López is supported by the *Generalitat Valenciana* (PROMETEOII/2015/021). M. Ridao has received funding from the

Red de Investigación en Servicios de Salud en Enfermedades Crónicas (REDISSEC) of the *Instituto de Salud Carlos III*.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.rec.2016.04.038.

Manuel Ridao^{a,b} and Ferrán Catalá-López^{c,d,e,*}

^aInstituto Aragonés de Ciencias de la Salud (I+CS), Red de Investigación en Servicios de Salud en Enfermedades Crónicas (REDISSEC), Zaragoza, Spain

^bFundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana (FISABIO)-Salud Pública, Valencia, Spain

^cDepartamento de Medicina, Universidad de Valencia/Instituto de Investigación Sanitaria INCLIVA y CIBERSAM, Valencia, Spain

^dClinical Epidemiology Program, Ottawa Hospital Research Institute (OHRI), Ottawa, Ontario, Canada

^eFundación Instituto de Investigación en Servicios de Salud, Valencia, Spain

* Corresponding author:

E-mail address: ferran_catala@hotmail.com (F. Catalá-López).

Available online 19 July 2016

REFERENCES

1. GBD 2013 DALYs and HALE Collaborators, Murray CJ, Barber RM, Foreman KJ, Abbasoglu Ozgoren A, Abd-Allah F, et al. Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990-2013: quantifying the epidemiological transition. *Lancet*. 2015;386:2145–91.
2. Campillo-Artero C, Ortún V. El análisis de coste-efectividad: por qué y cómo. *Rev Esp Cardiol*. 2016;69:370–3.
3. Neumann PJ, Stone PW, Chapman RH, Sandberg EA, Bell CM. The quality of reporting in published cost-utility analyses, 1976-1997. *Ann Intern Med*. 2000;132:964–72.
4. Catalá-López F, Ridao M, Alonso-Arroyo A, García-Altés A, Cameron C, González-Bermejo D, et al. The quality of reporting methods and results of cost-effectiveness analyses in Spain: a methodological systematic review. *Syst Rev*. 2016;5:6.
5. Ferreira-González I, Urrútia G, Alonso-Coello P. Revisiones sistemáticas y metaanálisis: bases conceptuales e interpretación. *Rev Esp Cardiol*. 2011;64:688–96.
6. Husereau D, Drummond M, Petrou S, Carswell C, Moher D, Greenberg D, et al.; CHEERS Task Force. Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement. *BMJ*. 2013;346:f1049.

<http://dx.doi.org/10.1016/j.rec.2016.04.038>