

## 2013 Pedro Cossio Foundation Award

JORGE LERMAN<sup>MTSAC, 1, 2</sup>

The Scientific Committee of the XXIV Interamerican Congress of Cardiology and the XXXIX Argentine Congress of Cardiology 2013 selected five candidate works to qualify for the 27th edition of the Fundación Dr. Pedro Cossio Award.

- The award-winning work was:

*“Prospective and Multicentric Validation of the ArgenSCORE in Aortic Valve Replacement. Comparison with the EuroSCORE I and the EuroSCORE II”*, by Victorio C. Carosella, Christian G. Mastantuono, Valeria Golovonevsky, Valeria Cohen, Hugo Grancelli, Walter Rodríguez, Cesar Cárdenas y Carlos Nojek.

The remarkable change in aortic stenosis epidemiology during the last decades has resulted in a growing number of patients with this valve disease at significantly increased surgical risk due to advanced age and presence of associated comorbidities, therefore, a substantial number of surgery cases is rejected. Although it is true that surgical treatment is still the “gold standard”, percutaneous implant of valve prosthesis offers a reasonable alternative for these unacceptable high risk patients. The correct selection of these patients towards one procedure or another requires an adequate risk stratification system. Since the questionable Parsonnet score, developed in the 80’s, which predicts hospital mortality after cardiac surgery, other scores have been postulated in the United States and Europe. External validation, regular updating, periodic recalibration and adaptation to different specific populations are essential for risk scores. The authors of this work developed in 1999 the “ArgenSCORE”, calibrated and updated in 2007 and plotted in a grid for its practical use. (1) In the present study they used this risk quantification tool in 250 patients who underwent aortic valve replacement in four centers of the city of Buenos Aires. The score not only had discrimination power, comparing predicted with observed hospital mortality, and good accuracy (area under the ROC curve: 0.82), but it was also clearly superior to the EuroSCORE I and the EuroSCORE II - in this population. Therefore, the recalibrated ArgenSCORE is a useful, accurate and simple strati-

fication tool that can be applied to our specific population of patients with severe aortic stenosis.

- The remaining works were:

*“Prognostic Utility of Vitamin D, brain natriuretic peptide and C-reactive protein in women with suspected acute coronary syndrome. Five years follow-up”*, by Ricardo León de la Fuente, Natalia A. Case, Patricia Naesgaard, Augusto Torino and Dennis Nilsen.

In this interesting study, researchers from a Salta cardiovascular center and two Norwegian universities analyzed 982 patients admitted to nine hospitals in Salta with suspected acute coronary syndrome. In 39.6% of patients a significant increase in troponin T levels was observed. The purpose of this study was to investigate the predictive value of long-term cardiovascular events according to gender, of 25-hydroxyvitamin D (25OHD), brain natriuretic peptide (BNP) and high sensitivity C-reactive protein (hs CRP). Although there were significant differences in age, risk factors and initial concentration of 25OHD in both genders, after 5 years follow-up and the loss of only 2 patients, it was observed that BNP and CRP hs were predictive in both sexes, but 25OHD deficit occurred only in women. In addition to the known effects of vitamin D on phosphocalcium metabolism, it has recently been suggested that a deficiency in 25OHD is a risk factor for cardiovascular disease and certain types of cancer. (2) However, the true clinical significance of this observation is currently in active debate and the recommendation of systematic research is still not listed in any guidebook. This observational record reveals an important collaborative effort and provides valuable information in a controversial field, as is the actual role of 25OHD in cardiovascular diseases.

*“Etiologic diagnosis of cardiomyopathy in patients receiving a heart transplant. Concordance between clinical diagnosis and pathology”*, by Santiago del Castillo, Iván Costentín Tomas Vita, Mercedes del Pilar Iacino, Hernán García Rivello, Rodolfo Pizarro, Ricardo Marenchino and César Belziti.

The aim of this important study of one of the centers with more extensive experience in heart trans-

plantation was to analyze the accuracy of the etiologic diagnosis of heart failure in 84 transplanted patients' hearts. In almost terminal patients with advanced disease there is in many cases great difficulty in establishing the etiology. (3) The correlation of preoperative information with data provided by explanted hearts pathology was analyzed. Half of the patients had coronary angiography, a quarter had MRI and 10% had preoperative endomyocardial biopsy. Ischemic - necrotic cardiomyopathy appeared in one third of cases and was the most common etiology in this population with more than three-quarters comprised by men with a mean age of  $49 \pm 12$  years. The correlation was reasonably good, but among the most frequent etiologies idiopathic dilated cardiomyopathy was over-diagnosed and hypertrophic cardiomyopathy and myocarditis were under-diagnosed. Chagas cardiomyopathy was correctly identified in 100% of cases. The most frequent use of diagnostic methods could increase diagnostic accuracy, whose practical consequence is the possibility of implementing more accurate preventive and therapeutic measures in possible cases and in the tracing of relatives with genetic heart disease.

*"Persistent Hyperglycemia and acute coronary syndromes with or without known history of diabetes: Clinical and prognostic implications. Argentine multicenter registry results SCAR"*, by Juliana N. Marin, Claudio Higa, Pablo Comignani, Mary P. Catalano, Rocío A. Piccinini, Jimena Gambarte, Graciana Ciambone and Mariano Benzádon.

This is another work developed from the SCAR database (Acute Coronary Syndromes in ARgentina), a multicenter registry that included 1330 patients hospitalized for acute coronary syndrome in 87 centers around the country during 3 months in 2011. The selection comprised 966 patients with acute myocardial infarction, of whom 23% were diabetic. The analysis focused on the study of hyperglycemia at admission, fasting hyperglycemia and persistent hyperglycemia (PH), which is the combination of the first two. PH patients (11 % of the population) reached much more frequently the primary endpoint of death / myocardial infarction / cardiogenic shock (21.8%) compared to the other forms of hyperglycemia or normal glucose levels (8, 4%) ( $p < 0.0001$ ). The same occurred with other infarction complications. However, an important fact was that this association was highly significant in non-diabetic patients, but only showed a tendency in diabetics. In multivariate analysis, PH was an independent predictor together with age, systolic blood pressure and necrosis biomarkers. Although it is known that hyperglycemia occurs in about 40 % of patients with acute myocardial infarction (even higher in diabetic patients), (4) these observations relate to the discovery of "new diabetics" or "hidden diabetics" which have a lower tolerance to carbohydrate metabo-

lism alterations triggered by an acute event. These patients will probably require special care in medium and long-term follow-up. As pathophysiological mechanism PH has been suggested as a possible marker of the massive increase of catecholamine, cortisol and glucagon secretion triggered during the acute event and may be related to unfavorable outcomes.

*"Cardiorenal syndrome in acute decompensated heart failure: a new approach"*, by Pablo A. Klin, Carola Zambrano, Andrés Bilbao, Luis Varela, Federico Zeppa y Francisco Klein.

The most widely accepted classification of cardiorenal syndrome considers five groups based on the fact that acute or chronic dysfunction of either one of these organs, damages the other. A fifth group includes systemic conditions leading to simultaneous injury of the heart and kidney. (5) The authors of this paper propose a reclassification of cardiorenal syndrome. The analysis presents 357 patients hospitalized for acute decompensated heart failure, of whom 38.9 % developed kidney damage, representing the Group 1 classification. (5) These patients were classified into three groups: 1) antegrade heart failure with acute tubular necrosis by systemic hypoperfusion, 2) right ventricular failure with increased venous pressure and passive congestion and 3) renal damage secondary to hypovolemia for diuretics or inhibitors of the renin-angiotensin- aldosterone system, or iodinated contrast use. These three categories showed a distinct prognosis, as in-hospital mortality was 48% in group 1, 18% in group 2 and 1.4% in group 3. This novel approach is a proposal that requires internal and external prospective validation to confirm its true practice value.

The Fundación Dr. Pedro Cossio 2013 Award Jury was composed by Alvaro Sosa Liprandi and Sergio Varini, to whom I am grateful for his skilled and responsible participation. Dr. Pedro Cossio Foundation is pleased to announce that it plans to award the Prize in its twenty- eighth edition during the upcoming Argentine Congress of Cardiology.

## REFERENCES

1. Carosella VC, Grancelli H, Rodríguez W, Sellanes M, Cáceres M, Cohen Arazí H et al. External and Temporal Validation 10 Years after the Development of the First Latin-American Risk Stratification Score for Cardiac Surgery (ArgenSCORE) *Rev Argent Cardiol* 2011;79:500-7.
2. Brandenburg VM, Vervloet MG, Marx N. The role of vitamin D in cardiovascular disease: from present evidence to future perspectives. *Atherosclerosis* 2012; 225:253-63.
3. Bortman G, Sellanes M, Odell DS, Ring WS, Olivari MT. Discrepancy between pre and post-transplant diagnosis of end-stage dilated cardiomyopathy. *Am J Cardiol* 1994; 74:921-24.
4. Consenso de Prevención Cardiovascular. Sociedad Argentina de Cardiología. Área de Normatizaciones y Consensos. Diabetes, Coordinador: Mele E. *Rev Argent Cardiol* 2012; 80(Supl 2):64.
5. Ronco C, McCullough P, Anker SD, Anand I, Aspromonte N, Bagshaw SM, et al. Cardio-renal syndromes: report from the consensus conference of the Acute Dialysis Quality Initiative. *Eur Heart J* 2010; 31:703-11.