EDITORIAL

2015 Dr. Pedro Cossio Foundation Award

Premio Fundación Dr. Pedro Cossio 2015

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During the 41st Argentine Congress of Cardiology, the Scientific Committee selected five works to contend for the twenty-ninth edition of the 2015, Dr. Pedro Cossio Foundation Award,

The award-winning work was:

"*Cystatin C as a predictor of cardiorenal syndrome and poor prognosis in patients hospitalized for acute heart failure and normal renal function*" by Iván Constantin, Santiago Luis Del Castillo, Francisco José Romeo, Federico Carlos Varela, Gustavo Greloni, Guillermo Javier Rosa Diez, Rodolfo Pizarro, César Antonio Belziti. (1)

Kidney dysfunction complicating acute heart failure corresponds to type-1 cardio renal syndrome; present in 21-45% of cases and significantly worsening the prognosis. Cystatin C is an endogenous low molecular weight protein steadily produced by all nucleated cells, freely filtered in the renal glomeruli, and almost completely reabsorbed and catabolized by the proximal tubular cells. It is now recognized as an early, sensitive and specific marker of glomerular filtration, with less error factors than creatinine. (2) The purpose of this study was to analyze the predictive value of Cystatin C in a population of elderly patients (mean age 85 years) hospitalized for acute heart failure. For this, 186 consecutive patients without renal failure and Cystatin C measured on admission were prospectively studied, and followed-up for an average of 193 days. The overall incidence of worsening renal function (WRF) during hospitalization was 29.7%, hospital mortality 3.1% and overall mortality (OM) 24.4%. Those with elevated Cystatin C had more often WRF (OR: 2.38; $p < 0.04$) and OM (OR: 3.02; $p < 0.01$) than those with average Cystatin C. The cut-off point of 1.6 mg/dL showed a reasonable sensitivity and specificity (about 60% in both cases) to predict WRF and OM. These results provide an improvement in the assessment of this frequent association for the early detection of renal dysfunction and allow for the administration of contrast, nephrotoxic medications and volume management. It would be useful to confirm these findings in younger populations.

The other works were:

"*Validation of the 2014 European guidelines risk prediction model of sudden cardiac death in hypertrophic cardiomyopathy, in a reference center of Argentina*" by Adrián Fernández, Alejandro Quiroga, Mauricio Mysuta, Horacio Casabé, Marcelo Biagetti, Eduardo Guevara, Liliana Favaloro, Juan Pablo Ochoa, Agostina Fava, Néstor Galizio.

The aim of this study was to validate a new quantitative score prediction of sudden death (SD) in patients with hypertrophic cardiomyopathy, (3) perfecting the guidelines of the European Society of Cardiology/ACC, 2003 (4) and ACC/AHA, 2011 in a local population. (5) The new score includes maximum left ventricular wall thickness, left atrial diameter, gradient in the left ventricular outflow tract at rest and with Valsalva maneuver, family history of SD, nonsustained ventricular tachycardia, unexplained syncope and age. The authors added abnormal blood pressure response to exercise. Five hundred and two consecutive patients with hypertrophic cardiomyopathy were examined between March 1993 and December 2014. Study end-point was SD or therapy with implantable cardioverter defibrillator (ICD) after a median follow-up of 5 years. Three risk categories were considered: low risk (LR):<4% (77% of the population), intermediate risk (IR):≥4 to <6% (8% of the population) and high risk (HR):≥6% (15% of the population). No patient with LR had SD/ICD, but it occurred in 5% and 16% of patients with IR and HR, respectively. This study conclusion was that the proposed score proved to be an excellent predictor of SD/ICD, with an area under the ROC curve of 0.925 ($p < 0.0001$) which could be applied with certainty in our population. Hypertrophic cardiomyopathy often poses a clinical management dilemma, since it is a potentially lethal condition that frequently affects young people. It is therefore important to improve prognostic criteria. This model does not include genetic factors or delayed enhancement magnetic resonance imaging, which are modern risk markers that could be included in the future.

"*Readmission score at 30 days after cardiac surgery*" by Juan Carlos Espinoza, Mariano Camporrotondo, Fernando Piccinini, Mariano Vrancic, Juan Camou, Julián Benazidez, Mariano Benzadon, Daniel Navia.

About 15% of patients undergoing cardiac surgery are readmitted within 30 days after discharge. (6) Although there are readmission prediction scores in these patients, the authors designed this study to develop and validate a local score. For this, 5148 consecutive patients intervened during 10 years were retrospec-

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tively analyzed. Within this population a "test" group comprising 50% of cases, and a "validation" group comprising the other 50% were randomly selected. Initially, numerous pre-, intra- and post operative variables related to postoperative readmission were studied by univariate analysis. Those that resulted significant in the multivariate analysis were used to generate the final score. They were: time of extra corporeal circulation, diabetes mellitus, postoperative anemia, postoperative hyperglycemia and postoperative atrial fibrillation, which contributed to the final score. The ROC curves of the "test" and "validation" groups showed an almost exact overlap, demonstrating the utility of the score. This could be used for preventive purposes, paying greater attention to the cases with the highest values.

"*Prognostic value of the MELD-XI score in patients with acute decompensated heart failure*" by Elián Facundo Giordanino, Pablo Alejandro Klin, Carola Zambrano, Federico Zeppa, Luis Varela Falcon, Andrés Bilbao, Francisco Klein.

The "*Model of End-stage Liver Disease*" (MELD) was initially developed to predict mortality in patients undergoing transjugular intrahepatic portosystemic shunts (7) and subsequently used to stratify patients on the waiting list for liver transplantation. Its components are plasma concentration of creatinine and bilirubin and the International Normalized Ratio (INR) as markers of kidney and liver function. Excluding the INR (MELD-XI) it may be applied in anticoagulated patients, a frequent fact in cardiovascular patients. Since the deterioration of renal or hepatic function strongly affects the prognosis of patients hospitalized with acute decompensated heart failure, the authors of this study analyzed the role of MELD-XI in this group of patients. They analyzed 652 cases where MELD-XI was estimated and followed-up for 6 months. Patients with MELD-XI score≥12 had a higher proportion of poor prognostic predictors: older age, hypotension, systemic hypoperfusion, lower ejection fraction, hyponatremia and longer hospitalizations. However, in multivariate analysis, MELD-XI≥12 was a readmission independent predictor (44% vs. 27.5%; p <0.001) and a mortality predictor (39% vs. 26%: p <0.001). MELD-XI is an expression of the systemic impact of advanced heart failure that produces hypoperfusion (antegrade failure) and passive congestion (retrograde failure) with the consequent worsening and deterioration in the general clinical condition.

"*Preventable deaths by stroke and coronary heart disease in Argentina: Comparative risk assessment for different levels of physical activity*" by Rosana Poggio, Ariel Bardach, Adolfo Rubinstein, Vilma Irazola, Goodarz Danaei. Numerous studies and meta-analyses have effectively demonstrated the substantial role played by physical activity (PA) in cardiovascular prevention. (8) It is also known that there is a dose-response relationship between the intensity of PA and the reduction of cardiovascular events. (9) In Argentina, the last National Risk Factor Survey showed that 55%% of the adult population is sedentary, and this proportion is constantly increasing. The authors of this study collected survey data from 24,427 subjects older than 30 years of age and through the weekly frequency, duration and intensity of the PA sessions, the total energy expenditure was estimated in METs-minutes/week. In turn they analyzed the number of deaths from stroke and coronary heart disease (CHD) of the Department of Health Statistics and Information of the National Ministry of Health. The conclusion was that the level of PA <1600 MET-minutes/week was responsible for 29% of CHD deaths and 13% of deaths caused by stroke. From these results, the authors estimate that if the 12,434 subjects who reported an unsatisfactory level of PA began to walk half an hour, five times a week, 7,278 cardiovascular deaths would be avoided. The jury of the 2015Foundation Dr. Pedro Cossio Foundation Award was formed by Drs. Hugo Grancelli and Carlos Barrero, to whom I am grateful for their skilled and responsible participation. The Dr. Pedro Cossio Foundation is pleased to announce that it plans to grant the thirtieth edition of the Award during the next Argentine Congress of Cardiology.

Conflicts of interest

None declared.

(See authors' conflicts of interest forms in the website/Supplementary material).

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