P4157

Coronary flow reserve but not ischemia is a strong predictor of mortality in 551 outpatients referred for stress myocardial perfusion by Rubidium-82 PET imaging

N. Tavares Poppi, J. Soares Junior, J.C. Meneghetti, B. Mahler Mioto, M.C.P. Giorgi, M. Izaki, L.A. Machado Cesar

Heart Institute (InCor) - University of Sao Paulo Faculty of Medicine Clinics Hospital (HC-FMUSP), Sao Paulo, Brazil

Background: The assessment of myocardial ischemia in patients with suspected coronary artery disease (CAD) is encouraged by current guidelines. The ischemic burden is associated with impaired prognosis. Coronary flow reserve (CFR) is also an independent predictor of cardiovascular mortality but it is unclear which one of these two variables would be stronger to predict mortality.

Purpose: To evaluate the predictors of death in symptomatic stable patients with suspected CAD referred for stress myocardial perfusion (MP) Rubidium-82 PET imaging.

Methods: 551 consecutive patients (52% men, mean age 63 years) were enrolled in this study from February to October 2013. The primary endpoint was all-cause death. The event-free survival curves for the primary endpoint were obtained using the Kaplan-Meier method in four groups of patients based on whether ischemia was present and whether CRF was impaired (<2) (Figure). Univariate analysis was performed using Cox regression to identify the variables that were associated with mortality, and the Cox proportional-hazards regression model for the multivariate analysis adjustment.

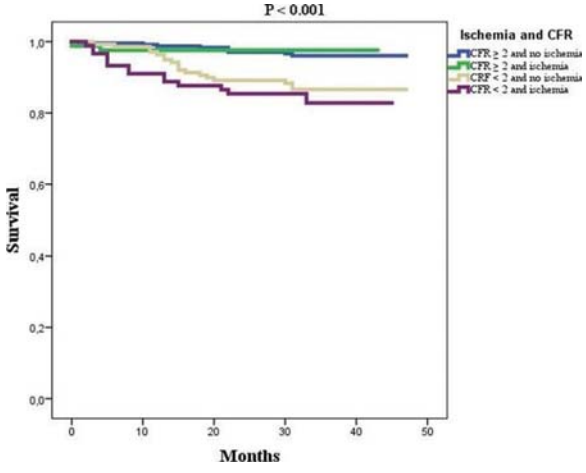
Results: During a median follow-up period of 32 months there were 43 deaths giving an estimated cumulative event rate of 7.8%. Univariate predictors of death were: age, higher prevalence of DM and CKD, lower LVEF and BMI. Following a multivariate analysis, only CFR was independently associated with mortality (Table).

Conclusions: In symptomatic outpatients with suspected CAD referred for stress MP Rubidium-82 PET imaging, CFR is the strongest predictor of mortality. Notably, neither the presence of ischemia nor the ischemic burden was associated with the outcome in question.

Predictors of death

Variable	Univariate model		Multivariate model	
	HR (95% CI)	P value	HR (95% CI)	P value
Age	1.03 (1.00–1.06)	0.036	1.01 (0.99–1.04)	0.324
Male sex	1.41 (0.76–2.56)	0.277	0.96 (0.70–1.32)	0.809
History of DM	2.12 (1,13–3,97)	0.019	–	–
History of CKD	4.95 (2,66–9,20)	<0.001	–	–
BMI <30	1.14 (1.05–1.22)	<0.001	2.22 (0.93–5.26)	0.071
Rest LVEF, %	0.98 (0.96–0.99)	0.029	0.99 (0.98–1.01)	0.477
Ischemia, %	1.02 (0.97–1.06)	0.436	0.99 (0.91–1.10)	0.990
Ischemia ≥10%	1.33 (0.59–2.99)	0.488	0.90 (0.40–2.05)	0.806
CFR	0.26 (0.15–0.43)	<0.001	0.27 (0.16–0.46)	<0.001

LVEF = left ventricular ejection fraction.



Survival curves for all-cause death.