P4614

Predictor factors of microvascular obstruction in early presenters of ST-segment elevation myocardial infarction

A.L. Rivero Monteagudo, B. Arroyo Rivera, C. Garcia Talavera, M. Cortes Garcia, J.A. Franco Pelaez, F. Navarro Del Amo, J. Tunon Fernandez

Foundation Jimenez Diaz, Cardiology, Madrid, Spain

Background: Microvascular obstruction (MVO) is a phenomenon that occurs frequently even after primary coronary intervention with recanalization of the infarct-related artery (IRA) and it has been shown to increase the risk of adverse cardiovascular events in ST-segment elevation myocardial infarction (STEMI) patients. The most important clinical predictor of MVO is ischemia duration, but there is a lack of information regarding predictor factors in promptly revascularized patients.
Methods: From January 2007 to October 2017, 1022 patients with STEMI that underwent urgent coronary angiography were retrospectively enlisted. We included 760 patients that were revascularized in $\leq$6 hours from symptom onset. Clinical, echocardiographic and angiographic data were taken from hospital records. A multivariate Cox regression analysis was made to assess the relationship between MVO (defined as final TIMI $<$3 in IRA) and potential predictors.
Results: From the 760 patients included, 73.7% were male and the mean age was 64.8±14.2 years. LVEF at admission was 46.1±12% and Killip class at admission was III-IV in 12.8% of the cases. The mean time between symptom onset and wire crossing was 3.3±1.3 hours. MVO was found in 130 cases (17.2%). After the multivariate Cox regression analysis, Killip class III-IV at admission was associated with MVO (OR 2.87 [1.31–6.31]). No other clinical variables were independently associated with the occurrence of MVO. The angiographic and interventional variables with a significant association with MVO were: predilatation (OR 1.87 [1.003–3.49]), postdilatation (OR 0.49 [0.27–0.89]), stent length (OR 1.04 [1.001–1.08]), stent diameter (OR 1.89 [1.11–3.23]), thrombus burden of the culprit lesion (OR 2.69 [1.26–5.71]) and distal embolization (OR 5.52 [2.79–10.89]).
Conclusions: In early presenters of STEMI, angiographic and interventional variables were more important as predictors of MVO than clinical variables. Killip class III-IV at admission was a clinical predictor factor for MVO in this population. Prospective studies are needed to confirm these results.