Abstract No. **18**
Category: **Prevention**
Title: **Capacity of subclinical atherosclerosis detection between different risk scores by Vascular Biomechanics**
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Abstract:

Objective: To correlate the classification of Risk obtained by 3 different Cardiovascular Risk Scales (CRS) and their ability to predict subclinical atherosclerosis in an asymptomatic population and reclassification of the Risk.
Methods: Prospective study. We included 162 patients (Table 1) from the outpatient clinic of cardiology with no history of major outcomes and systemic inflammatory diseases. The cardiovascular risk (CVR) was calculated by the Framingham Scales, the World Health Organization and the EUROSCORE High Risk. Concomitantly, non-invasive vascular studies were performed in a Vascular Biomechanics Laboratory (BMCV) for AS detection during June 2016 to July 2018. Average age of 57.7 years (Standard deviation: 14.2), 53.7% men and 46.2% women. The analysis of variance of a single factor and p control charts were used, the latter to analyze the failures of the CRS in the presence or absence of AS and the CVR was reclassified.
Results: By means of BMCV, AS was detected in 72% of the population despite being a low risk and asymptomatic population. The analysis of variance between the different CRS did not show a significant difference in the levels of risk classification among themselves ($p = 0.971$).
The z-values obtained with the control graphs p (Graph 1) for the CRS are negative and less than 1.0, which indicates a low performance of the CRS and its classification of the CVR to predict AS. Patients with AS and who were not classified at high risk were detected AS in 60.4% for Framingham (23.4% in moderate risk, 37% in low risk), 62.3% for SCORE OMS (22.2% in moderate risk, 40.1% in low risk), 62% for EUROSCORE. High Risk (25.9% in moderate risk, 37% in low risk), finally, those classified as high risk in the same order are (12.3%, 10.4% and 9.8%) (Graph 2). Extrapolating data, for every million patients attended, 604938 would be misclassified for Framingham Score, 623457 for SCORE OMS and 629630 for EUROSCORE High Risk -not significant- but poor performance.
Conclusions: There is a poor correlation between the levels of risk obtained by means of the CRS and the detection of AS, which was detected and demonstrated by BMCV.
The BMCV can be a fundamental tool that allows to reclassify the CVR by detecting AS in patients of moderate as well as low CVR, detecting individuals with a true high CVR, allowing to intervene early on them and perform an approach before the clinical disease.