Adhesion molecules as potential biomarkers for classification of cardiovascular risk

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INTRODUCTION: Cardiovascular diseases (CVD) are the major causes of mortality in the world. Adhesion molecules promote recruitment of inflammatory cells into the arterial wall where they interact with lipid particles leading subsequently to plaque formation. Therefore, these molecules are potential circulating biomarkers of CVD. **OBJECTIVES:** This study aimed to investigate the relationship between serum concentration of ICAM-1, VCAM-1 and E-selectin with both the risk of having cardiovascular event in 10 years and the coronary atherosclerotic burden. **MATERIAL AND METHODS:** Serum concentration of ICAM-1, VCAM-1 and E-selectin were evaluated in 74 patients underwent coronary angiography through Luminex technology. The *patients were stratified according* to their *Framingham Score* (Low, Intermediate and High Risk groups) and their coronary atherosclerotic burden - Friesinger Score (Without, Minor, Intermediate or Major Lesion groups). **RESULTS AND DISCUSSION:** VCAM-1 concentration was higher in patients with over 20% of chance of having cardiovascular events in ten years compared to those with up to 10% (p = 0.02). Logistic regression analyses showed that patients with VCAM-1 concentration higher than 876 ng/mL had increased risk to be classified as Intermediate and High Risk groups (OR: 8.250, 95% CI: 1.452-46.859, p = 0.017 and OR: 10.667, 95% CI: 2.295-49.583, p = 0.002, respectively). Moreover, the same patients with elevated levels of VCAM-1 showed an increased risk to be classified as Intermediate Lesion group (OR: 9.818, 95 % CI: 1.840-52.384, p = 0.007). All individuals in Major Lesion groups had VCAM-1 concentration higher than 876 ng/mL. The statistical analyses for ICAM-1 and E-selectin showed similar results among Framingham and Friesinger Score groups (p > 0.05). **CONCLUSION:** These results could indicate VCAM-1 as a potential new biomarker to improve the classification of patients' risk and coronary atherosclerotic burden.

Palavra chave: Biomarkers, Cardiovascular diseases, VCAM-1.
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