Effect of LPA gene on CAD risk among diabetic patients

F. Sousa1, I. Mendonca1, D. Sa1, M. Temtem1, E. Henriques1, S. Freitas1, M. Rodrigues1, S. Borges1, C. Guerra1, I. Ornelas1, A. Drumond1, A.C. Sousa1, R.P. Dos Reis1

1Hospital Central do Funchal, Funchal, Portugal

Funding Acknowledgements: None.

Introduction: Previous research reported that the LPA gene is a strong and independent predictor of CAD in non-diabetic patients but not in patients with type 2 diabetes mellitus (T2DM). These results suggest that the LPA gene might contribute less to CAD risk in patients with T2DM than in the general population.

Objective: Investigate, in our population, the association between the LPA gene variant rs3798220 T>C and CAD risk among the total, diabetic and non-diabetic populations.

Methods: 3161 individuals (1724 coronary patients and 1437 controls) were genotyped for LPA rs3798220 T>C. This variant has a MAF <2%; hence the risk homozygous CC is a rare genotype, and we used the heterozygous CT in our analysis. Bivariate and multivariate logistic regression evaluated LPA heterozygous genotype (CT) and CAD risk in the whole population, in the group with T2DM (n=782) and without T2DM (n=2379). The multivariate model was adjusted to the main traditional risk factors for CAD.

Results: After multivariate analysis, LPA CT remained a strong and independent predictor of CAD risk in the whole and non-diabetic populations (OR=2.12; 95%CI: 1.43-3.14; p<0.0001 and OR=2.56; 95%CI: 1.64-4.00; p<0.0001, respectively). However, this association was less pronounced in the diabetic population (OR=1.12; 95%CI: 0.47-2.65; p=0.799).

Conclusions: Our results show that the effect of the homozygous LPA genotype on CAD risk among the diabetic population might differ from that in non-diabetics, with less impact on diabetic patients. Many aspects of the genetic regulation of Lp(a) in diabetics are not fully understood, and other genetic and environmental factors may be crucial to CAD risk in diabetes, such as those linked to insulin resistance and hyperglycemia.