PARAOXONASE 1 ACTIVITY AS A PREDICTOR OF CARDIOVASCULAR DISEASE IN TYPE 2 DIABETES

Rozaida Poh and Sekaran Muniandy

Department of Molecular Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Abstract. The role of paraoxonase 1 in cardiovascular disease complications in type 2 diabetes mellitus is not fully understood. We studied paraoxonase activity towards paraoxon in 188 non-diabetic and 140 diabetic subjects using general linear models and univariate analysis. Adjusting for age revealed a reduction in activity towards paraoxon was associated with a significant increase in risk \((p=0.023)\) for cardiovascular disease complications in diabetic patients. Multivariate analysis of two plasma measures of paraoxonase activity using paraoxon and diazoxon also showed reduced paraoxonase activity towards paraoxon was associated with a significant increase in risk \((p=0.045)\) for cardiovascular disease complications in diabetic patients. These analyses showed that a reduced paraoxonase activity towards paraoxon was associated with ethnicity. Based on multivariate analysis, subjects of Malay ethnic origin have significantly higher than expected activity \((p=0.008, \text{ compared to Indians})\), towards paraoxon than subjects of Chinese origin who in turn had higher than expected paraoxonase activity \((p=0.028, \text{ compared to Indians})\) Indian subjects.

Key words: paraoxonase 1, cardiovascular disease, type 2 diabetes