

UK prospective diabetes study (UKPDS) 14: association of angiotensin-converting enzyme insertion/deletion polymorphism with myocardial infarction in NIDDM.

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The deletion allele of the insertion/deletion polymorphism of the angiotensin-converting enzyme gene has been suggested to be an independent risk factor for myocardial infarction, particularly in subjects judged to be "low-risk" by the criteria of lipid status and body mass index. In a prospective, matched case-control study, we have investigated the role of this polymorphism as a risk factor for myocardial infarction in 173 newly-diagnosed British Caucasian non-insulin-dependent diabetic subjects taken from the United Kingdom Prospective Diabetes Study who subsequently developed myocardial infarction and 297 control subjects from the same study population matched for known cardiovascular risk factors including age at diagnosis of diabetes, gender, blood pressure, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, triglyceride and smoking habit. A trend towards increased risk conferred by homozygosity for the deletion allele was observed in cases (odds ratio 1.63, $p = 0.09$). When the population was stratified according to the matched risk factors, the deletion allele was associated with myocardial infarction in those with low plasma low-density lipoprotein cholesterol (odds ratio 3.67, $p = 0.002$), or low triglyceride (odds ratio 3.14, $p = 0.005$). The strongest association of the deletion allele with myocardial infarction was observed in subjects with both low low-density lipoprotein cholesterol and low triglyceride levels (odds ratio 9.0, $p < 0.001$). These results show that the deletion allele is a risk factor for myocardial infarction in non-insulin-dependent diabetic patients who have a favourable lipid profile.