

Apolipoprotein e2 allele – a genetic risk factor for nocturnal blood pressure elevations in Type 1 diabetes.

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Introduction

We aimed to look for an association of the apoE genotype with blood pressure in adolescent patients with type 1 diabetes from Germany. Arterial hypertension, a precursor of cardiovascular disease in type 1 diabetes, is known to start as early as in childhood. Modified by gender and environmental factors, genetic variants of the apolipoprotein E (apoE) have been shown to influence the susceptibility to hypertension.

Methods

A total of 219 patients were recruited from the diabetes outpatient clinic. ApoE genotypes were determined by PCR and mass spectrometry analysis. Ambulatory blood pressure values were compared with the genotype.

Results

Patients with the e2/3 genotype compared to patients with the e3/4 genotype had higher nocturnal systolic blood pressure (mean sds 1.07 vs. 0.12, $p = 0.022$). Moreover, patients with this genotype showed a higher percentage of elevated measurements of nocturnal systolic (7.26% vs. 1.07%, $p=0.0045$) and diastolic (4.74% vs. 1.54%, $p=0.017$) blood pressure. This association was confined to male and to non-obese patients.

Conclusion

The apoE e2/3 genotype is associated with elevated nocturnal blood pressure in a German male and non-obese population with type 1 diabetes. Apart from environmental factors this genetic variant may increase susceptibility for cardiovascular morbidity and mortality.

