J Hypertens (Los Angel) 2018, Volume 7
DOI: 10.4172/2167-1095-C1-006

The relationship between MTHFR C677T gene polymorphism and essential hypertension in a sample of an Algerian population of the Oran city

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Background: Many studies have investigated the role of 5, 10-methylenetetrahydrofolate reductase(MTHFR) C677T gene polymorphism in essential hypertension (EH), but with conflicting results.

Aim: To determine the eventual association between 5,10-methylenetetrahydrofolate reductase(MTHFR) C677T gene polymorphism and hypertension in a sample of Algerian population from the Oran city.

Methods: A case-control study has been performed in 154 subjects including 82 hypertensives defined as subjects with elevated systolic blood pressure SBD≥140mmHg and or sustained diastolic blood pressure DBP≥90mmHg, and 72 normotensive subjects. Polymerase chain reaction (PCR) combined with restrictive fragment length polymorphism (RFLP) was used to detect the MTHFR C677T variant.

Results: We observe no significant differences between allelic and genotypic frequencies between cases and controls for C677T polymorphism (OR=1.51, 95% CI= 0.89-2.56, P=0.13). Analyses adjusted for age, sex and body mass index improved the association level, though the association was still not significant (30% vs. 22%, OR=1.75, 95% CI= 0.95-3.24, P=0.07).

Conclusion: This work showed that genetic polymorphism related to the MTHFR gene (C677T) is not associated with the risk of hypertension in this sample of Algerian population. Larger case- control samples are required to clearly assess the role of this genetic variant in EH.

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