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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Abstract:
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 SBP≥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.

Keywords: MTHFR C677T gene polymorphism; hypertension; Algerian population; case-control study.

1. Conflict of interest statement
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2. Authors’ biography
No biography

3. References
No references