

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 $SBD \geq 140$ mmHg and or sustained diastolic blood pressure $DBP \geq 90$ mmHg, 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