SOHO ANNUAL MEETING 2024

POSTER TITLE

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INTRODUCTION

The MTHFR (C677T) polymorphism has been associated with various diseases, including cancer and childhood leukemia, which are characterized by blood clotting disorders.

AIM

To analyze the association between the rs1801133 polymorphism of the MTHFR gene and hemostatic system disorders in ALL in children. Material and Methods The study included 82 children with ALL who were examined and treated in the children's department of the Center for Pediatric Hematology, Oncology and Clinical Immunology. The rs1801133 polymorphism was tested using a programmable thermal cycler and test systems from Litech (Russia). Statistical analysis was performed using the statistical software package OpenEpi, Version 9.3.

METHOD

Tips for making a successful poster…

- Re-write your paper into poster format i.e.. simplify everything, avoid data overkill.
- Headings of more than 6 words should be in upper and lower case, not all capitals. Simplify the titles.
- Try not to write whole sentences in capitals or underline to stress your point, use **bold** characters instead.
- When laying out your poster, leave white space around your text. Don't overcrowd your poster.
- Spell check and get someone else to proof-read.

RESULTS

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The mutant T allele did not significantly differ between the control group and patients with ALL (p=0.62). Similarly, the frequency of the heterozygous genotype C/T was not significant between the groups (p=0.1701).
Analysis of the mutant T allele in patients with and without hemorrhagic syndrome (HS) showed no significant difference (p=0.5753). Therefore, there is no association between the mutant allele "T" and disruption of the coagulation link of the hemostasis system, leading to thrombotic complications in ALL. The frequency of the homozygous genotype C/C was higher in patients with HS (p=0.5753), while the frequency of the heterozygous genotype C/T was higher in patients without HS (p=0.5753). However, this difference was not significant. The homozygous genotype for the mutant allele T/T was not found in the study sample, possibly due to its low population frequency and insufficient observations.

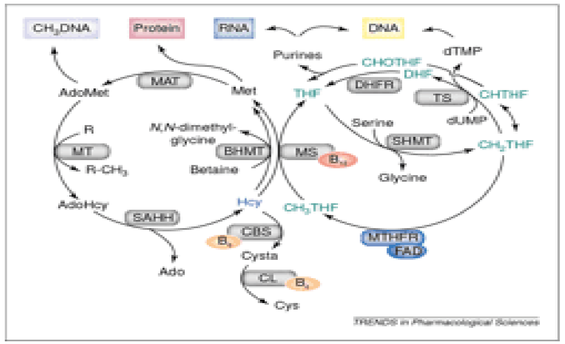


Fig. 1. Homocysteine (Hcy) formation, remethylation and trans-sulfuration, and the enzymes and B-vitamins involved. Hcy is formed from S-adenosylhomocysteine (AdoHcy). Remethylation to methionine (Met) is in most tissues catalyzed by the ubiquitous methionine synthase (MS), which requires cobalamin (B12) as a cofactor and 5-methyltetrahydrofolate (CH3THF) as a substrate. CH3THF is formed by the action of the flavine adenine dinucleotide (FAD)-dependent enzyme 5,10-methylenetetrahydrofolate reductase (MTHFR), which resides at a crucial metabolic locus directing the folate pool (green) to Hcy remethylation at the expense of folate used for DNA and RNA biosynthesis. Abbreviations: Ado, adenosine; AdoMet, S-adenosylmethionine; BHMT, betainehomocysteine S-methyltransferase; CBS, cystathionine β-synthase; CH2THF, 5,10- methylenetetrahydrofolate; CH3DNA, methylated DNA; CHOTHF, formyltetrahydrofolate; CHTHF, methenyltetrahydrofolate; CL, cystathionine lyase; Cys, cysteine; Cysta, cystathionine; DHF, dihydrofolate; DHFR, dihydrofolate reductase; dTMP, deoxythymdine 5′-monophosphate; dUMP, deoxyuridine 5′-monophosphate; MAT, methionine adenosyltransferase; MT, methyltransferase; SAHH, S-adenosylhomocysteine hydrolase; SHMT, serine hydroxymethyltransferase; THF, tetrahydrofolate; TS, thymidylate synthase.

CONCLUSIONS

The obtained data suggest that the rs1801133 (C677T) polymorphism of the MTGFR gene may not be associated with the activity of the leukemic process or the development of hemorrhagic syndrome as a complication in childhood leukemia.

REFERENCES

Can be Vancouver style i.e. 1 **Meyer J-P et al**. The treatment of high grade superficial bladder cancer and carcinoma in situ with BCG – a questionnaire survey of Consultant practice in England and Wales. *Urol Oncol 2002; 2;: 77-80*

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