Leucemia linfoblástica aguda na criança infectada com EBV ou CMV apresentam metilação do PTEB e do hTERT - epigenética

[Effects of Epstein-Barr virus and cytomegalovirus infection on childhood acute lymphoblastic leukemia gene methylation].

[Article in Chinese]
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Source

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Abstract

OBJECTIVE:

To investigate the associations between Epstein-Barr virus (EBV) and human cytomegalovirus (HCMV) infections and the methylation levels of PTEN and hTERT genes and explore their roles in children with acute lymphoblastic leukemia (ALL).

METHODS:

Blood samples from 100 children with newly diagnosed acute lymphoblastic leukemia were centrifuged for serological detection of EBV and HCMV, and the patients were divided accordingly into EBV-infected group (n=20), HCMV-infected group (n=14), EBV and HCMV co-infected group (n=41), and non-infected group (control group, n=15). DNA was extracted from peripheral blood mononuclear cells (PBMCs) and modified with bisulfite ammonia sodium. The methylation levels of the promoters of PTEN and hTERT genes were detected with methylation-specific polymerase chain reaction (MS-PCR).

RESULTS:

Compared with those in non-infected group and EBV- or HCMV-infected group, the methylation levels of PTEN gene in the co-infected group were significantly decreased (P<0.05) while the methylation levels of hTERT gene significantly increased (P<0.05).

CONCLUSION:

In children with acute lymphoblastic leukemia, EBV and HCMV co-infection cause changes in the methylation levels of PTEN and hTERT. These results may be associated with epigenetic changes caused by viral infections, and further studies are needed to further verify this hypothesis.

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