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Content

PROGNOSTIC SIGNIFICANCE OF THE LONG NON-CODING RNA MALAT1 EXPRESSION IN CHRONIC LYMPHOCYTIC LEUKEMIA

Nataša Tošić,[1] Milena Ugrin,[1] Vojin Vuković,[2] Irena Marjanović,[1] Tatjana Kostić,[1] Darko Antić,[2,3] Sanja Stanković,[4,5] Vladimir Otašević,[2] Kristina Tomić,[2] Sofija Šarac,[2] Biljana Mihaljević,[2,3] Sonja Pavlović,[1] Teodora Karan-Đurašević[1]

[1]Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Serbia; [2]Clinic for Hematology, Clinical Center of Serbia, Belgrade, Serbia; [3]School of Medicine, University of Belgrade, Belgrade, Serbia; [4]Center for Medical Biochemistry, Clinical Center of Serbia, Belgrade, Serbia; [5]Department of Biochemistry,Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia

Introduction: The long non-coding RNA (lncRNA) MALAT1 (metastasis-associated lung adenocarcinoma transcript 1) dysregulated expression has been reported in a variety of cancers, but has been poorly investigated in chronic lymphocytic leukemia (CLL). The aim of this study was to investigate the expression pattern of lncRNA MALAT1 in CLL, and evaluate its prognostic significance.

Methods: MALAT1 expression was analyzed in peripheral blood mononuclear cells of 114 newly-diagnosed CLL patients and 20 healthy controls by qRT-PCR, and association with clinical and biological features at diagnosis was assessed.

Results: MALAT1 was overexpressed in CLL compared to control samples ($p<0.001$). MALAT1 expression was higher in male patients ($p=0.003$). It showed no correlation with age, leukocyte, lymphocyte and platelet count, and serum β2-microglobulin, but exerted a positive correlation with hemoglobin level ($r=0.315$, $p=0.003$) and a negative correlation with lactate dehydrogenase level ($r=-0.303$, $p=0.004$). MALAT1 expression was higher in Binet A and B patients vs. Binet C patients ($p=0.037$). There was also a trend toward higher MALAT1 expression in patients with favorable (del13q) and intermediate (normal karyotype, trisomy12) cytogenetics in comparison to patients with unfavorable (del11q and del17p) cytogenetics ($p=0.059$). In addition, high MALAT1 levels were associated with CD38-negative status ($p=0.017$), but not with *IGHV* mutational status. While there was no association with the time to first treatment, longer median overall survival in MALAT1 high- vs. MALAT1 low-expressing cases was observed (142 vs. 82 months, log rank $p=0.032$).

Conclusion: LncRNA MALAT1 is up-regulated in CLL. High MALAT1 expression at diagnosis may be associated with better prognosis.

Key words: MALAT1; long non-coding RNA; expression; chronic lymphocytic leukemia; prognosis

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