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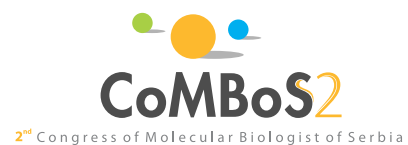
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EXPRESSION PROFILES OF LONG NON-CODING RNA GAS5 AND MICRORNA-222 IN YOUNGER AML PATIENTS

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Introduction: Acute myeloid leukemia (AML) is a heterogeneous malignant disease, that accounts for 80% of all acute leukemias in adults. Imprecise risk stratification and lack of personalized treatment creates a constant need to find new prognostic markers and targets for innovative therapeutics. Recently, this search has pointed towards non-coding RNAs (ncRNA). Numerous studies have shown dysregulation of lncRNA *GAS5* in cancers, but it was poorly investigated in AML. Since *GAS5* acts like a molecular sponge for miR-222, co-expression profiles of these non-coding RNAs could be novel prognostic markers in AML.

Methods: *GAS5* expression levels were analysed in 94 AML patients and 14 healthy controls using Real-Time PCR and miR-222 expression levels were analysed in a subgroup of 39 patients with normal karyotype (AML-NK). ROC curve analyses were used to find a cut-off value between *GAS5*^{high} and *GAS5*^{low}, while the median value was used for distinguishing between miR-222^{high} and miR-222^{low}.

Results: We showed that *GAS5* expression in AML patients was lower compared to healthy controls. Lower *GAS5* expression on diagnosis was related to an adverse prognosis. The disease-free survival and the overall survival were lower in the *GAS5*^{low} group but survival analysis failed to confirm this finding. In the AML-NK group patients had higher expression of miR-222 compared to healthy controls. A synergistic effect of *GAS5*^{low}/miR-222^{high} status on disease prognosis was not established.

Conclusion: Our findings indicate the potential prognostic significance of *GAS5* expression and the need for further investigation of these two non-coding RNAs and their potential roles in leukemogenesis.

Key words: AML; *GAS5*; miR-222

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