

Prognostic Impact of PPP2R5C Gene Expression in Adult Acute Myeloid Leukemia Patients with Normal Cytogenetics

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Abstract

Protein Phosphatase 2A (PP2A) is a crucial regulator of the cellular signalling pathways, proliferation, cell cycle checkpoints and apoptosis. The PPP2R5C gene encodes PP2A regulatory B56c subunit. Malignant transformation may occur, if mRNA of PPP2R5C is functionally deregulated, structurally altered, decreased or overexpressed. Therefore, the purpose of the study was to examine PPP2R5C mRNA expression, evaluate its association with the different clinical and haematological parameters and determine its prognostic impact in Egyptian adult acute myeloid leukaemia patients with normal cytogenetics (CN-AML). Peripheral blood samples of 50 de novo CN-AML patients and 20 age- and gender-matched healthy controls were examined for PPP2R5C expression by Quantitative Real Time-Polymerase Chain Reaction. The expression levels of PPP2R5C mRNA were significantly higher in the CN-AML samples than in the control samples ($P \leq 0.001$). There was a statistically significant difference between the low and high expression levels of PPP2R5C with regard to age ($P = 0.005$, $r = -0.447$, $P = 0.001$). The patients with an unfavourable response to induction chemotherapy had significant higher PPP2R5C expression levels than those with a favourable response ($P = 0.002$). There was a significant influence of high PPP2R5C expression levels on the overall survival and progression free survival ($P = 0.03$, 0.026), respectively. PPP2R5C overexpression is an adverse prognostic factor which affects leukaemogenesis in the CN-AML, it may predict the disease progression and overall survival during the follow-up of the patients.

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Speaker's Biography:

Dr Maha El Taweel has completed her MD PhD from National Cancer Institute, Cairo University, Egypt, 2002. She finished her diploma from France in Cytogenetics (DIU), 2008 and research studies (CRA) in McMaster University, Canada, 2017. She has published many papers in different international journals in the field of Hematological malignancies.

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