Abstract

The Wilms' tumor gene is highly expressed in a large proportion of human acute leukemias and other hematological malignancies. It is thought to play an important role in human hematpoiesis and leukemogenesis. Despite the large number of studies, *WT1* expression patterns and its clinical significance in acute myeloid leukemia remain still controversial. To investigate the prognostic relevance of initial *WT1* expression and its usefulness as a marker for minimal residual disease, we have analysed 66 bone marrow samples from newly diagnosed AML patients. RQ-RT-PCR for absolute quantification of total *WT1* was designed according to Europe Against Cancer Program. In 82 % of samples we detected a higher expression of *WT1* compared to normal healthy donors or patients with acute lymphoblastic leukemia ($p<0.0001$). We did not find any correlation between initial *WT1* expression level and age or sex. Patients with FAB M3 subtype showed significantly higher *WT1* levels than other subtypes, especially M5 ($p<0.001$). We found a strikingly high *WT1* expression in standard risk group patients compared to high risk group ($p<0.0007$). Children with FAB/cytogenetical favorable prognostic factors have high *WT1* expression, while there was no relation between *WT1* levels at diagnosis and day 15 BM response. We did not find any differences between patients remaining in complete remission and those suffering relapse. Thus, we did not prove any prognostic significance of initial *WT1* expression level in childhood AML patients. However, *WT1* expression pattern seems to be determined by the biologic and genetic origin of the cases.

Wilms' tumor 1 gene, paediatric acute myeloid leukemia, minimal residual disease, RQ-PCR, prognostic significance

Gen WT1, dětské akutní myeloidní leukémie, minimální residuální nemoc, RQ-PCR, prognostický význam