

عنوان مقاله:

Effects of Reduced Mir-24 Expression on Plasma Methotrexate Levels, Therapy-Related Toxicities, and Patient Outcomes in Pediatric Acute Lymphoblastic Leukemia

محل انتشار:

مجله گزارش های بیوشیمی و زیست شناسی مولکولی، دوره 8، شماره 4 (سال: 1398)

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خلاصه مقاله:

Background: The current study aims to investigate the relationship of miR-24 expression with plasma methotrexate (MTX) levels, therapy-related toxicities, and event-free survival (EFS) in Iranian pediatric acute lymphoblastic leukemia (ALL) patients. **Methods:** The study included 74 ALL patients in consolidation phase and 41 healthy children. RNA was extracted from plasma, polyadenylated, and reverse transcribed. miR-24 expression was determined by quantitative polymerase chain reaction (qPCR). Plasma MTX concentrations were measured by high performance liquid chromatography (HPLC) 48 h after high-dose methotrexate (HD-MTX) injection. The diagnosis of ALL was further subclassified as B-ALL or T-ALL via flow cytometry. **Results:** miR-24 expression was less in pediatric ALL patients than in the control group ($p = 0.0038$). Furthermore, downregulation of miR-24 was correlated with intermediate-to high-grade HD-MTX therapy toxicities ($p = 0.025$). Nevertheless, no statistically significant associations were seen between miR-24 levels and plasma MTX levels 48 h after HD-MTX administration ($p > 0.05$) or EFS in pediatric ALL patients ($p > 0.05$). **Conclusions:** miR-24 expression may contribute to interindividual variability in response to intermediate-to high-grade HD-MTX therapy toxicities under Berlin Frankfurt Munster (BFM) treatment.

کلمات کلیدی:

Acute Lymphoblastic Leukemia, Event Free Survival, Methotrexate, Mir, Toxicity

