Prognostic Value of Absolute Lymphocytes Counts at the end of induction in Childhood Acute Lymphoblastic Leukemia

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Introduction

Several studies[1-6] have revealed that absolute lymphocyte counts (ALC) at the end of remission induction is a power prognostic factor in childhood acute lymphoblastic leukemia (ALL), while its impact factors were not identified. Previous studies focus on the protocol or ethnicity inference, and in the study, we mainly explore the influence of age on ALC.

Materials and Methods

A retrospective study was carried out on the 348 newly diagnosed childhood ALL treated in our department from April 1, 2002 to March 31, 2013. The outcome and ALC at the end of induction were reviewed. ALC correlated with different risk classification, 5-year event free survival (EFS), cumulative incidence of relapse (CIR), and treatment related mortality (TRM) were studied. EFS and survival curves were estimated according to Kaplan-Meier method and compared by two tailed log-rank test. Data were analyzed by SPSS 19.0 software.

Results

The 5-year EFS of patients in low ALC group (≤0.62×10^9/L , below the 25 percentile,) and high ALC group (> 0.62×10^9/L) was 62.0%±5.8% and 81.8%±1.5%, respectively. The 5-year CIR in low ALC group and high ALC group were 28.0%±5.6% and 15.3%±2.4% , and the TRM were 12.8%±3.8% and 2.9%±1.1%, respectively. Multivariate Cox regression analysis showed that low ALC was an independent risk factor influencing the, the risk ratio was 1.95, 95% CI (1.22 , 3.11)

However, only in the group no more than 6 years old, 5-year EFS of low ALC group (n= 41) were inferior compared to the high ALC group (n=154) (see Figure A) . the 5-year EFS of low ALC group (n= 47) and high ALC group (n= 106) in the group older than 6 years old was no statistical significance (see Figure B).

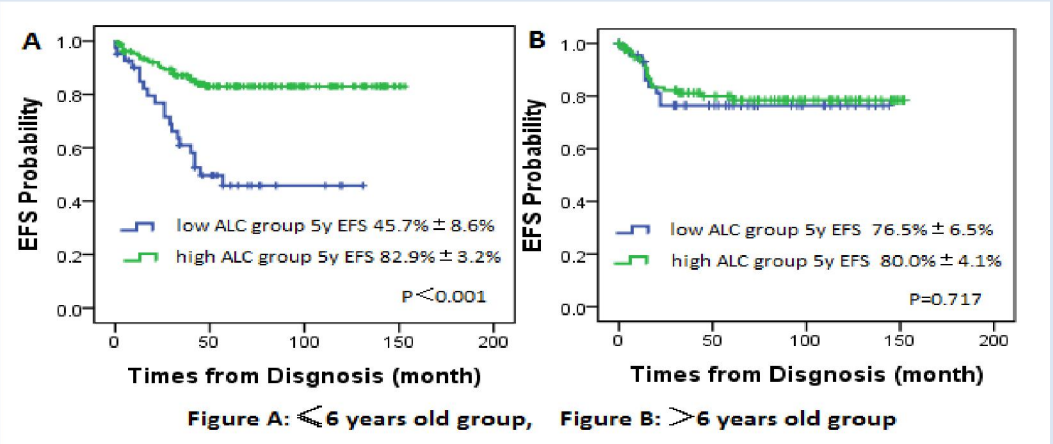

Figure A: ≤6 years old group, Figure B: >6 years old group

Conclusions

Age could be an important factor influence the prognostic value of ALC, and low ALC (≤0.62×10^9/L) at the end of induction was an independent factor for poor outcome in children with ALL, especially in those under 6 years old.

References

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