Clinical features and prognosis of infant acute lymphoblastic leukemia in China: A single-center retrospective analysis

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Abstract

Background: In this retrospective analysis, we investigate the clinical features and prognosis of 23 infant patients (< 1 year of age) diagnosed with acute lymphoblastic leukemia (ALL). Methods: We used clinical data of 23 children diagnosed with infant ALL at the Department of Pediatric Hematology & Oncology, Wuhan Children's Hospital, between 1st January 2014 and 30th September 2019. EFS and OS rate curves were computed using the Kaplan-Meier estimator. The impact of prognostic factors on outcome was analyzed using the Cox model. Results: The median WBC was 46.14 (6.46–513) $\times$ 10^9/L at initial diagnosis. All 21 patients immunophenotyped by flow cytometry had B-lineage ALL. KMT2A-rearrangement was identified in 72.2% (13/18)patients. Mutation screening for 13 patients indicated 4 patients with KRAS mutations, 4 with TTN mutations, 2 with NOTCH1 mutations, 2 with PTPN11 mutations and 2 with NRAS mutations. Of 12 patients who received chemotherapy, complete remission was achieved for 83.3% patients after one course of remission induction. A total of 3 patients underwent related haploidentical allogeneic hematopoietic stem cell transplantation. The expected 2-year overall survival (OS) rate was 55.6 +- 15.2% and the expected event free survival rate (EFS) was 44.4 +- 15.7%. Univariate analysis revealed WBC > 100 x 10^9/L at initial diagnosis as a risk factor for poor OS and EFS. Conclusion: Treatment of infant ALL with the standard childhood ALL regimen achieved an OS rate similar to patients with high-risk ALL, and WBC at initial diagnosis may be an important prognostic indicator.

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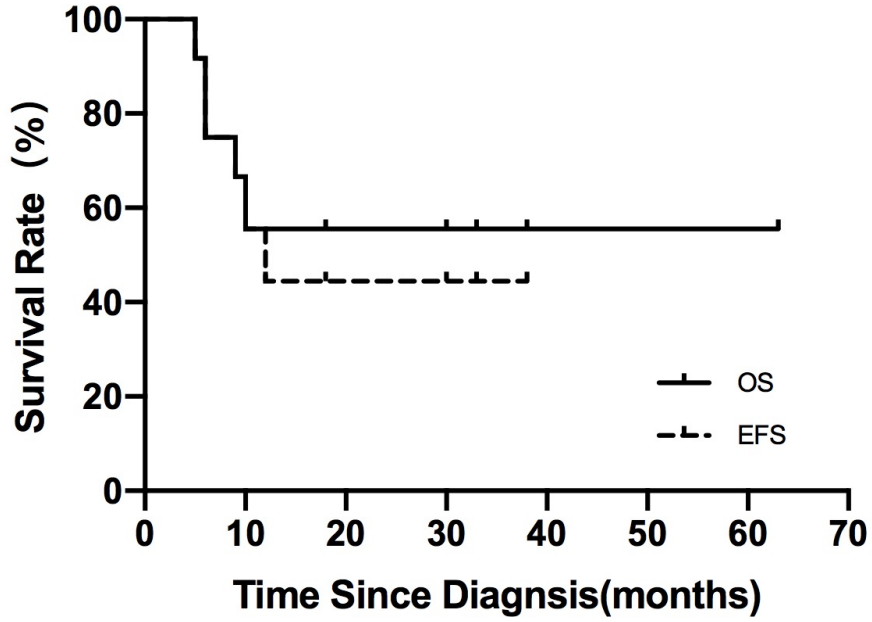

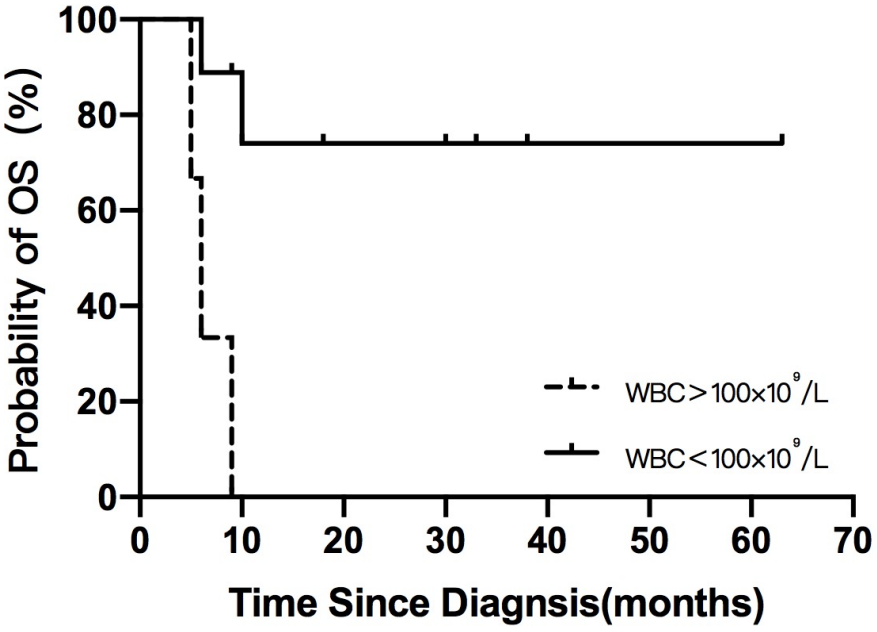

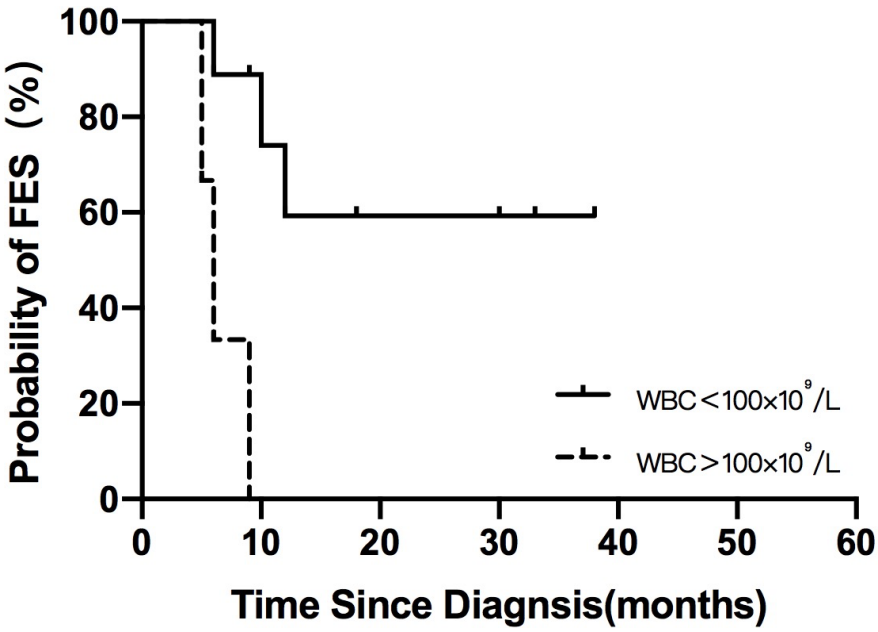

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Table 1. Clinical and molecular features of Patients with infant ALL .docx available at https://authorea.com/users/327659/articles/455258-clinical-features-and-prognosis-of-infant-acute-lymphoblastic-leukemia-in-china-a-single-center-retrospective-analysis

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Table 2.Summary of results for infant ALL in recent clinical trials.docx available at https://authorea.com/users/327659/articles/455258-clinical-features-and-prognosis-of-infant-acute-lymphoblastic-leukemia-in-china-a-single-center-retrospective-analysis