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614.ACUTE LYMPHOBLASTIC LEUKEMIAS: THERAPIES, EXCLUDING TRANSPLANTATION AND CELLULAR IMMUNOTHERAPIES**Treatment of Acute Lymphoblastic Leukemia with PDT Regimen Improves the Prognosis of Newly Diagnosed Central Nervous System Leukemia**Haimei Liang, MD¹, Qifa Liu, MD^{2,2}, Hongsheng Zhou^{3,4}¹ Southern Medical University, Guangzhou, China² Department of Hematology, Nanfang Hospital, Southern medical university CN, Guangzhou, China³ Nanfang Hospital, Southern Medical University, Guangzhou, China⁴ Nanfang Hospital, Southern Medical University, Guangzhou, CHN**Objective**

To investigate whether pediatric-like regimen can improve the prognosis of newly diagnosed acute lymphoblastic leukemia (ALL) complicated with central nervous system leukemia (CNSL) and reduce the occurrence of CNSL during treatment compared with the adult regimen.

Methods

We collected the clinical data and survival data of 1023 patients with newly diagnosed ALL in the hematology department of Nanfang Hospital from January 2006 to December 2021. The adult regimen cohort included 612 patients (age ≥ 14 years) diagnosed between January 2006 and December 2015, all of whom were treated with the Hyper-CVAD regimen. The pediatric-like regimen cohort included 411 patients diagnosed between January 2016 and December 2021, all of whom were treated with the PDT-ALL-2016 regimen (a GRAALL2003 backbone, pediatric-inspired regimen therapy). Newly diagnosed central nervous system leukemia (Ndx CNSL) is defined as the presence of leukemia cells on cytological examination of the cerebrospinal fluid or significant neurological signs. Differences between OS and EFS in Kaplan-Meier curves were determined using the log-rank test in the R package "survival".

Results

Among 1023 patients, a total of 59 patients had Ndx CNSL, including 35 patients (5.72%) in the adult regimen cohort and 24 patients (5.84%) in the PDT-ALL-2016 cohort. There were no statistically significant differences in baseline characteristics between the two groups. In the cohort of Ndx CNSL, after a median follow-up of 42.48 months, overall survival (OS) and event-free survival (EFS) of the adult cohort were significantly inferior than the PDT-ALL-2016 cohort (3-year OS, 14.26% vs 38.2%, $P=0.044$; 3-year EFS, 12.42% vs 37.1%, $P=0.039$). During the chemotherapy treatment, CNSL occurred in 69 patients (11.27%) in the adult regimen cohort and 29 patients (7.06%) in the PDT-ALL-2016 cohort, with a significant difference ($P=0.032$).

Conclusion

Compared with the adult regimen, the pediatric-like regimen PDT-ALL-2016 improves the prognosis of ALL patients with newly diagnosed CNSL and reduces the occurrence of CNSL during the chemotherapy treatment.

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