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614.ACUTE LYMPHOBLASTIC LEUKEMIAS: THERAPIES, EXCLUDING TRANSPLANTATION AND CELLULAR IMMUNOTHERAPIES

Short-Term Efficacy and Safety of Blinatumomab in Early Postinduction Intensification Therapy for Pediatric B-Cell Acute Lymphoblastic Leukemia

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Background: Multidrug chemotherapy is the main treatment for children with B-cell acute lymphoblastic leukemia (B-ALL), which has been associated with multiple long-term complications and high rates of treatment non-completion due to toxicities. Recently, blinatumomab has proven to be effective and well-tolerated in the treatment of relapsed or refractory pediatric B-ALL. However, there is still a lack of reports about the real-world application of blinatumomab in pediatric B-ALL who achieved first complete remission (CR).
O bjectives: To assess the short-term efficacy and safety of blinatumomab in early postinduction intensification therapy for children with B-ALL who had achieved first complete remission in a real-world setting.
M ethods: A single-center retrospective analysis was performed to collect data on pediatric B-ALL patients (pts) who received blinatumomab monotherapy during early postinduction intensification therapy. All pts had undergone China Children's Leukemia Group (CCLG)-2018 induction chemotherapy until achieving CR. Blinatumomab treatment was initiated after obtaining consent from patients and caregivers, following detailed counseling about the potential risks and benefits. Efficacy was assessed based on minimal residual disease (MRD) negativity (<0.01%) using multiparameter flow cytometry (MFC). Adverse events (AEs) were assessed by Common Terminology Criteria for Adverse Events (CTCAE) version 5.0.
R esult: From September 2022 to July 2023, A total of 11 pts were included in this study due to chemotherapy intolerance: median age was 3 years (range, 1 to 11 years) with 54.5% (n=6) being male. Before blinatumomab therapy, MRD was detected in four pts with values of 0.024%, 0.037%, 10%, and 0.09%, respectively.The remaining pts tested negative for MRD. After one cycle of blinatumomab therapy, all MRDpos pts showed a decline in MRD, and 75% achieved undetectable MRD. The median follow-up time was 3 months. A total of 28 AEs were reported, with 75% classified as grade 1-2 and the remaining 25% as grade 3-4. The most frequently reported AEs were grade 1-2 fever (90.9%), observed within 7 days of treatment. Grade 3-4 hematological AEs included decreased white blood cell count and decreased neutrophil count. Additionally, four cases of infection, two cases of transient rash and one case of grade 2 diarrhea were observed. No pts experienced immune effector cell-associated neurotoxicity syndrome (ICANS), grade 3-4 cytokine release syndrome (CRS) or unexpected serious adverse events (SAEs). Furthermore, none of the AEs resulted in treatment delay, dose reduction or discontinuation. All pts experiencing treatment-associated toxicities recovered and proceeded to consolidation therapy.
C onclusion: The use of blinatumomab in early intensification demonstrated promising short-term efficacy and a manageable safety profile in pediatric B-ALL pts. However, further confirmation of these results requires larger, randomized clinical trials.

Disclosures No relevant conflicts of interest to declare.

OffLabel Disclosure: Blinatumomab is a bispecific T cell engager antibody construct that selectively binds with high affinity to CD19 (expressed on cells of B-lineage origin) and CD3 (expressed on T cells). It is approved for the treatment of relapsed or refractory pediatric B-cell precursor acute lymphoblastic leukaemia in China.

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