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POSTER ABSTRACTS

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

Efficacy and Safety of Avatrombopag in the Treatment of Chemotherapy-Induced Thrombocytopenia in Children with Acute Lymphoblastic Leukemia: A Retrospective Study

Libai Chen, MD[1], *Huiyan Yang*[1], *Lei Zhang*[1], *Yongsheng Ruan, MD*[1], *Jianyun Wen*[1], *Xuedong Wu, MD*[1]

[1] Department of Pediatrics, Nanfang Hospital, Southern Medical University, Guangzhou, China

Introduction: Chemotherapy-induced thrombocytopenia (CIT) is one of the most common complications during cancer treatment, increasing the risk of bleeding, medical costs, and potentially affecting treatment outcomes by necessitating chemotherapy dose reductions or delays. Avatrombopag, a thrombopoietin receptor agonist, has been approved as the first-line drug for the treatment of thrombocytopenia in chronic liver diseases. Its efficacy and safety was demonstrated in disorders like aplastic anemia and primary immune thrombocytopenia. However, the research regarding its use in children with CIT is lack.

Objective: This retrospective study aimed to analyze the efficacy and safety of avatrombopag in the treatment of chemotherapy-induced thrombocytopenia in children with acute lymphoblastic leukemia, providing a potential new therapeutic option for managing CIT in pediatric cancer patients.

Methods: The data of experimental group were collected from 30 pediatric patients with acute lymphoblastic leukemia and CIT who received avatrombopag treatment in the pediatric ward of Southern Hospital from August 2022 to July 2023. Additional data from 250 pediatric patients with acute lymphoblastic leukemia and CIT who did not receive avatrombopag treatment at Southern Hospital from January 2020 to July 2023 were collected as the control group. A propensity score matching method was employed to analyze the two patient groups, resulting in a successful matching of 30 pairs (CAT 21 pairs, CAT+9 pairs). The collected clinical data included age, gender, height, weight, risk stratification, infection status, platelet count changes during each chemotherapy cycle, platelet transfusion frequency, clinical manifestations of bleeding, avatrombopag usage, and complications. All patients were treated with the 2020-CCCG-ALL chemotherapy regimen,diagnosed with CIT,under 18 years of age, and excluded if they had concomitant hematological disorders, chronic liver disease, cardiovascular diseases, severe arterial or venous thrombosis, or splenomegaly. The initial avatrombopag dose was 10mg daily for patients weighing less than 30kg and 20mg daily for patients weighing 30kg or more. Avatrombopag was stopped when PLT$\geq 100\times10^9$/L or an increase in PLT by $\geq 50\times10^9$/L compared to pre-treatment levels.

Results: Comparison between the experimental and control groups revealed that the experimental group had a shorter duration of grade 3 or higher thrombocytopenia (3.36±1.77 days vs. 4.7±2.46 days, P=0.019) and a shorter time to platelet recovery (7.9±2.63 days vs. 9.76±2.77 days, P=0.01).

Subgroup analysis within the CAT and CAT+ chemotherapy phases indicated that significant platelet value differences (P<0.05) were observed between the two groups at the start of platelet decline (day 10±2) [PLT: (268.13±216.52) $\times10^9$/L vs. (152.13±89.58) $\times10^9$/L] and during platelet nadir (day 14±2) [PLT: (435.97±285.83) $\times10^9$/L vs. (285.07±148.67) $\times10^9$/L]. Additionally, a statistically significant difference (P<0.05) in PLT change from baseline to day 5 and day 7 was observed in the experimental group [46.5 (20.5, 93) $\times10^9$/L and 67 (15.5, 180) $\times10^9$/L, respectively]. During the chemotherapy cycles, only 4 patients (8.3%) experienced bleeding events, and after avatrombopag treatment, 11 patients (22.9%) did not require platelet transfusions. Four adverse events of secondary platelet increase were recorded, and no other adverse events were reported.

Conclusion: Avatrombopag, as an alternative treatment for chemotherapy-induced thrombocytopenia in children with acute lymphoblastic leukemia, demonstrated the potential to promote platelet recovery and exhibited good safety.

keywords:avatrombopag,Chemotherapy-induced thrombocytopenia,acute lymphoblastic leukemia

Disclosures No relevant conflicts of interest to declare.

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