

(PB4244) THE APPLICATION OF LETERMOVIR FOR POST - HAPLOIDENTICAL TRANSPLANTATION PREVENTION IN CHILDREN WITH ACUTE LEUKEMIA DID NOT ELEVATE THE INCIDENCE OF LATE - ONSET CYTOMEGALOVIRUS INFECTION

Topic: 31. Infections in hematology (incl. supportive care/therapy)

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Background

Letermovir prophylaxis was initiated on day +1 after haploidentical transplantation in children with acute leukemia. Literature reports that the incidence of CMV infection within 100 days after transplantation was reduced to 26.09%. However, other studies have shown that letermovir prophylaxis may delay CMV-specific immune reconstitution, leading to an increased incidence of late-onset CMV infection from 100 days to 360 days after transplantation, reaching up to 63.00%.

Aims

This study aimed to analyze the incidence of late-onset CMV infection and non-relapse mortality from 100 days to 360 days after transplantation in children with acute leukemia who received letermovir prophylaxis for 100 days.

Methods

Thirty children with acute leukemia who underwent haploidentical transplantation at Hebei Yanda Lu Daopei Hospital from October 1, 2022 to October 1, 2025 were included. All patients received myeloablative conditioning regimens, including 21 cases based on busulfan (Bu) and 9 cases based on total body irradiation (TBI). The sources of stem cells were G-CSF-mobilized bone marrow + peripheral blood stem cells in 27 cases, G-CSF-mobilized peripheral blood stem cells in 3 cases. On Day 3, the reinfusion of unrelated cord blood was carried out. The median time to initiate letermovir prophylaxis was +1 day, and the median duration of letermovir prophylaxis was 100 days. The median follow-up time was 20.98 months.

Results

Among the 30 patients with acute leukemia, the median age at diagnosis was 14.86 years, including 12 cases of acute lymphoblastic leukemia, 16 cases of acute myeloid leukemia, and 2 cases of acute mixed-lineage leukemia. The median number of MNCs reinfused was $18.29 \times 10^8/\text{kg}$, and the median number of CD34+ cells was $14.15 \times 10^6/\text{kg}$. Letermovir prophylaxis was initiated on day +1 after transplantation, and the median duration of letermovir prophylaxis was 100 days. All patients achieved engraftment of white blood cells, and all achieved engraftment of platelets. The incidence of CMV infection within 100 days after transplantation was 23.30%, the incidence within 1 year was 36.7%, and the incidence from 100 days to 360 days after transplantation was 13.30% (lower than the 63.00% reported in previous literature). The incidence of EBV infection within 100 days after transplantation was 18.10%, and there was no EBV infection from 100 days to 360 days after transplantation. During the follow-up period, one patient died of intracranial fungal infection. Four patients relapsed, including one with hematological relapse + extramedullary relapse (orbit) at +106 days, one with molecular relapse at +127 days after transplantation, one with hematological relapse at +312 days after transplantation, and one with hematological relapse at +80 days after transplantation. The first two patients achieved complete remission after treatment, and the other two are currently under treatment. The estimated 4-year overall survival was 85.70%, and the estimated 4-year disease-free survival (DFS) was 79.54%, with an estimated 4-year non-relapse mortality of 13.70%.

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Summary/Conclusion

Letermovir prophylaxis for 100 days initiated on day +1 after haploidentical transplantation in children with acute leukemia ,led to a reduction in the incidence of CMV within 100 days after transplantation. Moreover, it did not increase the incidence of late - onset CMV from 100 days to 360 days after transplantation, nor did it reduce the disease - free survival rate after transplantation.

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