(PB4231) EFFICACY OF EARLY LOW DOSE OF RITUXIMAB IN PROPHYLAXIS OF EBV REACTIVATION AND EBV RELATED POST-TRANSPLANT LYMPHOPROLIFERATIVE DISORDER AFTER ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION

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

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Background

The incidence of Epstein-Barr virus (EBV) reactivation is reported to be increased after allogeneic hematopoietic cell transplantation(allo-HCT) in letermovir era in several studies, ranging from 20% to 58%. EBV related post-transplant lymphoproliferative disorder (EBV-PTLD) is a life-threatening complication and a major cause of non-relapse mortality. Prophylaxis of EBV reactivation is needed. The majority of EBV-PTLD are due to proliferation of B-cells after allo-HCT. Early clearance of B cells may eliminate the proliferation sites of EBV, reducing the incidence of EBV reactivation and mortality of EBV-PTLD.

Aims

To explore the efficacy of early low dose of Rituximab after allo-HCT on the incidence of EBV viremia and EBV-related PTLD.

Methods

From Feb 2024 to Dec 2025, a total of 124 patients with hematological disease underwent allo-HCT at Shanghai new dao-pei Hospital. All patients were EBV-specific IgG positive before HCT. All patients received ATG based conditioning, and letermovir for CMV prophylaxis. All patients were treated with Rituximab 200mg on the 5th day after stem cell reinfusion (the dose for children was adjusted according to their weight), a 2nd dose was used in 10 patients 3 weeks later due to prolonged severe immunosuppression.

EBV screening is performed once a week by q-PCR and more frequent if EBV DNA positive. Recurrent EBV viremia is diagnosed by detection of EBV-DNA in plasma. PTLD was screened in patients with EBV viremia by lymph node ultrasound and biopsy if needed. The incidence of EBV viremia and PTLD and treatment-related toxicity was retrospectively analyzed, and the incidence of GVHD, CMV reactivation, and the survival status was observed.

Results

The median age of the patients was 31 years (range, 2-67). 49 pts were females and 75 were males. Diagnosis was AML/MDS in 34 pts, ALL/LBL in 85 pts and severe aplastic anemia in 5 pts. The stem cell donors were from haploidentical donors in 69 pts, unrelated donors in 39 pts, matched sibling donors in 14 pts, and cord blood in 2 pts.

The median follow-up was 177 days (60⊠388 days). Of the 107 pts who follow up above 100days, only 3 (2.4%) developed early EBV viremia in 100 days, and 3 ⊠2.4%⊠developed late EBV viremia after 100 days. 4 pts was recovered after the treatment of rituximab.1 patient progressed to PTLD and died; one died of EBV related HLH. There were no severe adverse effect or aggravated infection events during the medication process. Cumulative incidences (CI) of grade II-IV and grade III-IV aGVHD day +100 were 12% and 5.6% respectively. Incidence of CMV reactivation was 14.5%. Till last follow up, most of the patients presented with B-cell deficiency and hypoimmunoglobulinemia, requiring IVIg replacement therapy. 117(94.3%) patients were still alive with disease free, 7 patients died, with the causes being one case of aGVHD, one case of PTLD, one case of recurrence of the original disease, three cases of TA-TMA, and one case of organ failure.

Summary/Conclusion

Our study shows that early low dose of rituximab after allo-HCT can significantly reduce incidence of EBV viremia and the risk of EBV-related PTLD, without severe adverse effect despite delayed humoral immune reestablishment. It will provide an effective prophylactic strategy for patients at high risk of EBV and reduce transplant-related mortality after allo-HCT.