(PB2644) ALLOGENEIC STEM CELL TRANSPLANTATION FOR PHILADELPHIA CHROMOSOME POSITIVE ACUTE LYMPHOBLASTIC LEUKEMIA

Topic: 02. Acute lymphoblastic leukemia - Clinical

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Background

Philadelphia chromosome positive (Ph+) acute lymphoblastic leukemia (ALL) constitutes approximately 25% of adult and 3% of children B precursor ALL patients (pts). The prognosis was considered poor until the administration of tyrosine kinase inhibitors (TKIs) in association with intensive chemotherapy followed by allogenic hematopoietic stem cell transplantation (allo-HSCT). We report the results of this procedure over a long period of 13 years.

Methods

From January 2012 to December 2023, 76 pts with Ph+ ALL underwent allo-HSCT from an HLA matched sibling donor (55 pts) and haplo-identical donor (20 pts). At the time of transplant, 64 pts were in first complete remission (CR1), 11 pts in second CR and one pt in active disease. Median age was 32 years (4-61) and sex-ratio (M/F): 1,37. The average time from diagnosis to transplant was 7 months (3-14). Three types of Busulfan-based conditioning regimen were used: Busulfan-Aracytine-Melphalan for 12 pts, Busulfan-cyclophosphamide-Etoposide for 15 pts, and Busulfan-Cyclophosphamide for 6 pts. For haplo-identical transplant, Busulfan-Aracytine-Cyclophosphamide and Thymoglobuline (Beijing Protocol) in 5 pts, Busulfan-Fludarabine-Thiotepa (TBF) in 15 pts. All pts received peripheral blood stem cells with an average CD34+ cell count: 8,18x10*6/Kg (3,89-41,08) with addition of bonre marrow G-CSF primed in Beijing Protocol. GVHD prophylaxis consisted on association of ciclosporine-methotrexate (HLA-identical sibling), ciclosporine-methotrexate-MMF (Beijing Protocol), and ciclosporine-MMF-PTCy (TBF). Relapse prevention with ITKs after transplantation was used in 44 pts (57,9%).

Results

Aplasia was observed in all pts. Median day of neutrophils engraftment was 13 days (6-28). Fifty pts (64,1%) required red blood cells transfusions (2,5 unit/pt), and all pts needed platelets transfusion (2,1 unit/pt). One pt presented a moderate veino-occlusive disease. Acute GVHD occurred in 30 pts (40,5%) including 17 pts grade III-IV. Chronic GVHD was seen in 24 pts (42,85%) with extensive form in 09 pts. CMV reactivation is noted in 21 pts (27,6%); and hemorrhagic cystitis in 6 pts. Twenty-two pts (28,9%) relapsed within 16 pts received TKIs. At 30 June 2024, after a median follow-up of 50 months (7 128), 49 pts (64,4%) died of whom 32 pts (42%) from transplant-related complications (aGVHD 16 pts, cGVHD 3 pts, infection 09 pts, acute pancreatitis 1 pt, PRES 1 pt, liver toxicity 02 pts) and relapse (17 pts). The overall survival (0S) and disease-free survival (DFS) at 149 months are 27,7% et 22,5%.

Summary/Conclusion

Allo-HSCT after a chemotherapy-alone conditioning regimen with TKIs have improved outcomes for pts with Ph+ ALL. Despite the use TKIs, we note à high rate of relapse. The advent of immunotherapy improves the results of transplantation due to better control of minimal residual disease

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