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patients comparing the onset and resolution of HC. Neither HC nor grades III-IV HC was associated with overall survival.
Conclusion: Conditioning regimen is an important factor in the development of HC and its mechanism has been well described. In our study, we could not demonstrate the increased HC risk of conditioning regimens including cyclophosphamide. We also showed that cyclophosphamide in MAC had similar HC risk compared with RIC containing cyclophosphamide.In this retrospective analysis, BK virus was detected 45 patients out of 78 patients with HC and BK viruria was not associated with HC severity.

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Outcomes of Acute Myelogenous Leukemia Patients Undergoing Haploidentical Hematopoietic Cell Transplantation with Post-Transplant Cyclophosphamide: Impact of Total Body Irradiation Versus Chemotherapy-Based Myeloablative Conditioning

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Background: Optimal myeloablative conditioning (MAC) in the setting of haploidentical hematopoietic cell transplantation (haplo-HCT) with post-transplant cyclophosphamide (PTCy) is unknown. We studied the outcomes of total body irradiation (TBI) vs. chemotherapy (CT) based MAC regimens in acute myelogenous leukemia (AML) pts undergoing haplo-HCT and reported to EBMT.
Methods: The study included 1008 AML pts who underwent haplo-HCT during 2010-2018, following TBI (n=89, 9%) or CT (n=919, 91%) based MAC. Regimen intensity was defined by EBMT criteria and the cases with busulfan dose <9 mg/kg or TBI dose ≤6 gray were excluded. Fludarabine-TBI (78%) and Thiotepa-busulfan-fludarabine (56%) were the most common MAC regimens in TBI and CT-cohorts, respectively. Pts in TBI cohort were more likely to be younger (median age, 38 vs. 47 yrs, p<0.01) and receive BM graft (57% vs. 43%, p-0.01) Other pt, disease and transplant characteristics were similar in both groups. Median follow up for TBI and CT cohort were 25.4 and 20.7 months, respectively.
Results: In univariate analysis, day 100 incidence of acute GVHD (aGVHD) II-IV and III-VI was 22% vs. 27% (p-0.44) and 12% vs. 12% (p-0.92) in TBI and CT cohorts, respectively. Two-yr total and severe chronic GVHD (cGVHD) incidence were 42% vs. 27% (p<0.01) and 9% vs. 12% (p-0.33) in TBI and CT cohorts, respectively. Graft failure was reported in 2 (2%) and 65 (7%)(p-0.08) pts who received TBI and CT-based MAC, respectively. Three (1%) pts died due to graft failure in CT-group. Death from veno-occlusive disease was reported in 1(3%) TBI pt and 11(3%) CT pts. Death due interstitial pneumonitis was reported in 1 (3%) TBI and 8 (2%) CT pts. One pt died from a second malignancy in each group. In multivariate analysis, TBI was associated with higher incidence of overall cGVHD [HR=1.81, 95% CI:1.14-2.87, p-0.01] compared to CT. There was no difference in other outcomes such as extensive cGVHD[HR=0.34, p-0.07], relapse incidence(RI) [HR=1.32, p-0.22], nonrelapse mortality(NRM) [HR=0.82, p-0.52] and leukemia free survival(LFS) [HR=1.09, p-0.62], overall survival(OS) [HR=1.07, p-0.71] and GVHD free relapse free survival (GRFS) [HR=1.02, p-0.92]. 2-yr LFS and OS of TBI and CT cohort were 45% vs. 49%,p-0.98 and 50% vs. 55%,p-0.79, respectively (figure 1). Factors impacting OS were pt age (per 10yrs, HR=1.1, p-0.02), KPS≥90 (HR=0.55,p<0.01) and advanced disease status before haplo-HCT (HR=2.35, p<0.01).
In a subgroup analysis of pts <40 yrs old and pts with pre-HCT disease status CR2 or advance disease, no interaction was observed between type of MAC and RI, NRM, LFS, OS and GRFS.
Conclusions: In this large relatively homogenous cohort of AML patients who received haplo-HCT with PTCy, TBI based MAC was associated with higher incidence of overall cGVHD without impacting other transplant outcomes compared to CT based MAC. A prospective study is needed to validate these findings.