Incidence, risk factors and treatment response in patients with chronic graft versus-host disease after haploidentical transplantation with post-transplantation cyclophosphamide.

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Background

The use of HLA-haploidentical hematopoietic cell transplantation (Haplo-HCT) with post-transplantation cyclophosphamide (PT-Cy), has become a more frequent therapeutic approach, for patients without an available HLA-matched related or unrelated donor. According to several reports, the incidence of acute GVHD is similar or even inferior to what has been observed after HLA-matched allogeneic hematopoietic cell transplantation. Currently there is limited data regarding chronic GVHD (cGVHD) in this setting. The impact of the graft source along with the conditioning regimen remains unknown.

Objectives

To analyze the incidence, risk factors and treatment response of cGVHD in patients who received Haplo-HCT with post-transplantation cyclophosphamide

Materials & Methods

We conducted a multi-center retrospective study in 219 patients of four Spanish centers, who received Haplo-HCT between December 2007 and March 2018.

Conclusion

The low rate of cGVHD, with excellent responses to first line treatments, supports Haplo-HCT as a promising therapeutic alternative. Our data showed factors that might be related to the development of cGVHD.

Results

Table 1: Basal and transplant related characteristics		N= 219
Recipient age; median (range), years		46 (5-74)
Gender: male / Female; n(%)		143 (65) / 76 (35)
Diagnosis; n(%)		
• AML / MDS / ALL / HL		76 (35) / 19 (9) / 17 (8) / 62 (28)
• NHL / Others (MPN,MM,AA, CGD);		23 (10) / 19 (9)
Prior number of treatment lines; median (range)		2 (1-6)
Prior HSCT: Alo-SCT / ASCT; n(%)		19 (9) / 63 (29)
HCT-CI risk score / Disease risk index; median (range)		2 (0-7) / 1 (0-3)
Prior transplant disease status:		
• CR MRD- / CR MRD+ / Active disease / Progression; n(%)		101 (46) / 47 (22) / 71 (32)
Donor source: Peripheral blood/ Bone marrow; n(%)		167 (76) / 52 (24)
Number of CD34 x10 ⁶ /kg: CD34 in PB / CD34 in BM; median (range)		5 (2-13) / 3 (1-11)
Conditioning intensity:		
• Reduced / Myeloablative / Sequential; n(%)		108 (65) / 52 (31) / 5 (3)
Conditioning type; n(%)		
• Reduced intensity		
Flu(150 mg/m ²) +Bu(3,2 ó 6,4mg/Kg)+Cy(29mg/Kg)		128 (58)
Flu (150 mg/m ²) +TBI (2Gy)+Cy (29 mg/kg)		27 (13)
• Myeloablative		
Flu(160mg/m ²)+Bu(9,6 ó 12,8mg/Kg)+Cy(29 mg/kg)		38 (17)
Flu(150mg/m ²)+Bu(9,6mg/Kg)+Thio(10mg/Kg)		26 (12)
GVHD prophylaxis:		
• CSA + MMF + Cy 50 mg/kg x 2 / Tacro + MMF + Cy 50 mg/kg x 2; n(%)		87 (40) / 131 (60)

Table 2: Outcomes	
Follow-up; median (range), months	23 (3-115)
Incidence of chronic GVHD; n(%)	56 (28)
cGVHD onset after Haplo-HCT; median (range), days	218 (68-1017)
cGVHD NIH grade: Mild / Moderate / Severe; n(%)	32 (16) / 17 (9) / 7 (3)
cGVHD onset type; n(%)	
• Progressive/ Quiescent / De novo / Overlap	9 (16) / 34 (61) / 13 (23) / 13 (23)
Cumulative incidence of acute GVHD (first 180 days): Grades II-IV / Grades III-IV; (%)	49 / 10
GVHD-free and Relapse-free survival (GRFS) at 1 year / 2 years; (%)	52 / 46
Overall survival at 1 year / 2 years; (%)	67 / 61

Table 3: Chronic GVHD treatment response	N= 56 (28%)
Without treatment; n(%)	3 (5)
First line treatment: Topic; n(%)	30 (53)
• CR / PR / NR (R, SD, PD); n(%)	19 (63) / 9 (30) / 2 (7)
First line treatment: Systemic; n(%)	23 (43)
• CR / PR / NR (R, SD, PD); n(%)	13 (46) / 7 (30) / 3 (13)
Number of treatment lines, median (range)	2 (1-4)

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