EBMT 2015 - Physicians Abstract (including Data and Quality Management)

Topic area: Transplant-specific topics

Topic: 10. Stem cell donor

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HLA-A ALLELE MISMATCH (7/8 OR 9/10)IS THE SECOND BEST OPTION AFTER 8/8 OR 10/10 MATCHED UNRELATED DONORS: AN ANALYSIS ON RESULTS FROM TURKISH CENTERS

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Introduction: Hematopoietic stem cell transplantation (HSCT) from an unrelated donor has been established as an effective treatment option for patients with hematological diseases who lack a human leukocyte antigen (HLA)-matched related donor. However, HLA mismatch at the genetic level (allele mismatch) may be observed among serologically HLA-matched (antigen match) donor-recipient pairs, which adversely affects the incidence of severe graft-versus-host disease (GVHD) and survival. The aim of this retrospective multicenter study was to evaluate the impact of HLA mismatch on unrelated transplantation outcomes in Turkey.

Materials (or patients) and methods: The data set consisted of follow-up records of 444 (of which 436 with HLA matching data available) unrelated-donor stem cell transplantations performed at 14 centers between July 2002-September 2014 and facilitated by TRAN orTRIS .215 patients underwent single antigen and/or allele-mismatched (mm) HSCT. The distribution of the mismatches according to the HLA-A, HLA-B, HLA-C, and HLA-DR and HLA-DQ loci are:82, 58, 32, 35 and 9 patients, respectively.Twelve patients were transplanted with 8/10 HLA matching. The patients' characteristics are summarized in Table 1.

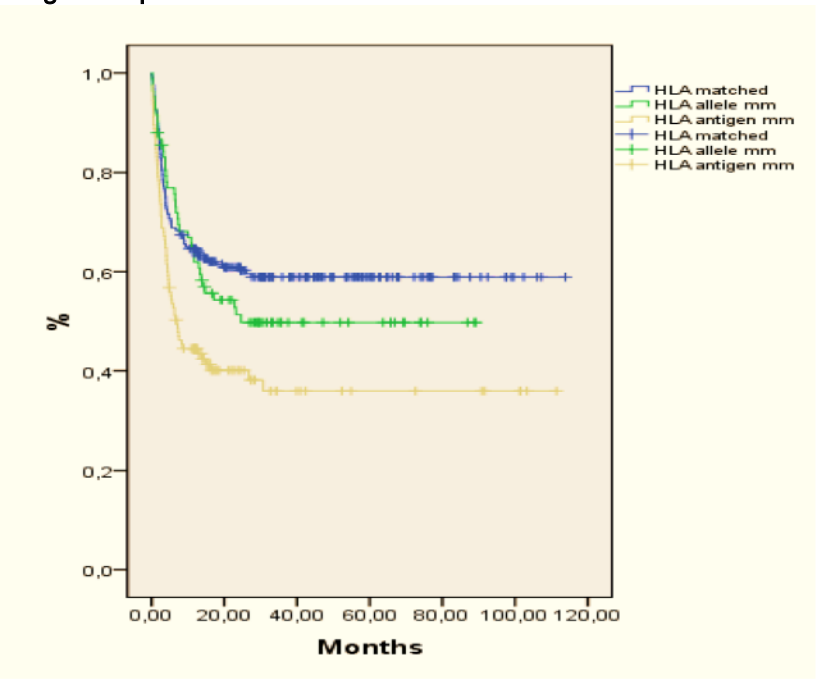
Results: The neutrophil engraftment was achieved in 82.2% of the patients. HLA mm has a negative impact on engraftment (HLA mm: median 17days vs HLA-matched: median 16 days, p=0.03). Acute GVHD wasobserved at a rate of 42.1%. HLA matching did not have an impact on the incidence of acute GvHD (p=0.35) but chronic GvHD was more frequent among HLA allele /antigen mismatched patients than HLA-matched (p=0.008). The possibility of 5-year overall survival (OS) was 50.2%±2.5%. The presence of HLA mismatch significantly shortened the OS (58.9±3.4% vs Allele mm: 49.8±5.7% vs Antigen mm 36.0±4.9%, p<0.0001).Among the allele level mm HLA-A mm was associated with better OS compared to other loci (55.9±11.7%vs. 17.2±8.2%). When analysis was performed regardless of HLA match or only among HLA matched donor-recipient-pairsgender and stem cell source (PB vs BM) did not have an impact on OS. The OS of patients transplanted between 2002-2007 were shorter than those transplanted later (2008-2014)(37.9±6.4% vs. 52.9±2.7; p= 0.02).

Table 1: The Patient characteristics

	HLA-identical	1Antigen mismatch	1 Allele-mismatch
Median age (years)	21 (1-62)	24 (3-65)	30 (2-62)
Recipient gender (F/M)	83/138	50/78	34/53
Donor gender (F/M)	66/152	58/70	33/54

Diagnosis			
Acute leukemia	87	67	39
Lymphoma	12	9	8
BM failure	51	11	12
CMPN	18	0	9
MDS/MPN	13	9	9
Immune Deficiency	21	0	3
Inherited disorders	17	11	6
Others	1	1	1
Missing data	7	0	0

Image / Graph:



Conclusion: Matching for HLA was possible approximately in half (211/436) of the unrelated transplants performed since 2000.Mismatches were associated with later engraftment, more chronic GVHD and shorter OS. HLA-A provided the most acceptable mismatch at allelic level.Donor gender was not found to be as powerful as HLA. Experience of transplant centers have improved the survival outcomes through the last decade.

Disclosure of Interest: None Declared

Keywords: HLA mismatch, survival, unrelated donor