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Comparison of single and double autologous stem cell transplantation in multiple myeloma patients

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Objective: Multiple myeloma (MM) is the second most common hematological malignancy and autologous stem cell transplantation (ASCT) is one of the standard treatment of choice for eligible MM patients. The role of double ASCT as a treatment in patients with MM and its superiority over single ASCT are still a matter of discussion. Herein, we aimed to analyze MM patients at our center and compare the clinical outcomes of single and double ASCT patients.

Methodology: This study has been designed retrospectively. The patients who were diagnosed as multiple myeloma and had undergone ASCT in Hacettepe Hematology Department between the years 2003–2020 were evaluated.

Results: Disease assessment after ASCT stable or progressive disease, partial remission, very good partial or complete remission in single and double ASCT groups were 62/44/105 and 8/4/5, respectively, p: 0.22. Among the double transplanted patients, five of them were transplanted within 1 year after the first transplant. The median duration between the first and second transplant was 1322 (414–4242) days in double ASCT patients. OS duration of the single and double transplanted groups were 4011 ± 266 versus 3526 ± 326 days, respectively, p: 0.33. There was no statistically significant difference between OS durations of single and double ASCT patients. Only 4 patients had died from TRM in single ASCT group, whereas no patients had died from TRM in double ASCT group. Progression free survival durations of the single and double transplanted groups were 2344 ± 228 versus 685 ± 120 days, respectively, p: 0.22. There was no statistically significant difference between PFS durations of single and double ASCT patients. The factors that are related with the OS of double ASCT patients were analyzed. In univariate analysis, serum calcium levels and IgA type M protein were found to be related with OS of double ASCT patients (p: 0.09 and p: 0.06, respectively); however this relationship was not found in multivariate analysis. In univariate analysis, serum uric acid levels and beta-2 microglobulin were found to be related with PFS of double ASCT patients (p: 0.04 and p: 0.07, respectively); however this relationship was not found in multivariate analysis.

Conclusion: ASCT remains to be one of the main treatment options in MM. Many studies tried to find the best way of this procedure to maximize the benefit for the patients. Given the survival benefits observed with ASCT, trials have evaluated the use of additional intensive chemotherapy followed by a second ASCT. The recent general opinion among clinicians is that a second ASCT tends to be a feasible and rational treatment choice, particularly in patients with high risk MM. In the present study, it has been demonstrated that there seems to be no benefit with double ASCT in MM patients in terms of disease response rates and PFS and OS durations over single ASCT. Our study points out that the double ASCT treatment option in MM may not be effective as suggested, especially in the era of novel MM drugs. Further prospective larger studies are needed to clarify the role of double ASCT especially in high risk MM.

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Are the hemoglobin values different after sex-mismatched allogeneic stem cell transplantation?

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Objective: Allogenic hematopoietic stem cell transplant (HSCT) is used as a curative treatment approach in many hematological diseases. Allogenic HKHN made for nearly 30 years bone marrow microenvironment and stroma after transplantation are known to protect the recipient identity. It is well known that if sex mismatch allogeneic HSCT is performed from multipar women to men, graft-versus-host disease frequency and therefore transplant related mortality is increased. Inborn difference and its change after transplant in hemoglobin (Hb) levels between male and female did not draw attention on a scientific basis. The aim of this study to analyze Hb and red cell distribution width (RDW) changes after mismatch allogeneic HSCT.

Case report: 18–72 years old 62 cases with acute leukemia were included in this study, between 2016–2019. All of them underwent allogeneic HSCT with used conditioning regimens like myeloablative or non-myeloablative or RIC (reduced-intensity conditioning) and were in the first complete remission.

Methodology: The patients were divided into four groups according to the transmitter and gender compliance, as well as demographic features; MM (male to male), MF (male to female), FF (female to female) FM (female to male). Hemoglobin and red cell distribution (RDW) interval differences were evaluated before and after transplantation.

Results: There was no significant difference between groups in terms of age and performance status. The mean Hb level was significantly increased in all patients from 9.16 g/dL to 12.34 g/dL ($p < 0.0001$) after transplantation. The average RDW before transplantation was 16.60% after transplantation was 15.57%. When the mean Hb values at 12 months were compared with post-transplant, it was found to be 12.79 g/dL and 12.99 g/dL in male recipients and female recipients respectively. While mean values of male recipients were 15.78% and 15.02% in the MM group and FM group, it was observed that female recipients were 13.43% and 15.13% in the FF group and in the MF group, respectively. While the male recipient

therefore male stromal structure was terminated with >12 g/dL Hb values at 12 months, the mean value in female recipients was <12 g/dL. Male allogeneic HSCT recipients are more fortunate than women in this respect but in the study, no significant difference was found between women who have male donors and gender-matched sex in hemoglobin elevation.

Conclusion: In our study, no significant difference was found between women who have male donors and gender-matched sex in hemoglobin elevation. Finally, we think that in patients with both male and female donors, it can be concluded that the recipient's hemoglobin value may be higher by choosing a male donor.

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Experience of istanbul faculty of medicine bone marrow bank: periodical activity documentation

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Objective: Unrelated stem cell transplant (SCT) is an option for patients who have no available related donor, and a transplant is the best treatment modality for them. We aimed to document our bone marrow bank activity to define the proficiency and unmet requirement.

Methodology: We retrospectively screened the medical records from electronic files. The data from 2016 until 2019 were collected. The statistical analysis of the patients who presented for stem cell transplant, and of the healthy donors for demographic features, stem cell counts, stem cell sources, diagnosis, survival, GVHD, CMV, and HLA matches were performed using the SPSS 21.0.

Results: A total of 640 patient and donor pairs enrolled in the study. Most of the patients were adults ($n = 359$). Patients' mean age was 26.77 ± 21.06 years (range 0–74), and donor's 31.9 ± 9.6 years (range 24–75). The gender distribution was as male to female 377/263 for patients and 333/304 for the donors. The primary (43%) SCT indication was acute leukemia. Preference of stem cell sources was as follows; peripheral blood ($n = 450$; pediatric/adult: 137/313), bone marrow ($n = 161$; pediatric/adult: 130/31), and cord blood ($n = 8$; pediatric/adult: 8/0). In 21 cases, donor leukocytes were provided (pediatric/adult: 6/15). The total HLA tissue group compatibility between the patient and the donor was *10/10 in 47.8% of cases, *9/10 in 51.3% cases, and *8/10, *5/6, *6/8 in 9% of cases. The survival analysis showed no statistical difference between 10/10 and 9/10 HLA matched transplants. The sex match between patient and donor and the stem cell source has no significant effect on GVHD development ($p > 0.005$ and p: 0.226, respectively).

Conclusion: The outcome of SCT is effected mainly by HLA tissue compatibility, age, sex, and blood group match. Istanbul Bone Marrow Bank, with the HLA tissue typing laboratory, works internationally and provides stem cells since 1999 for SCT. With the collaboration of SCT centers, donor and stem cell source selection, and transfer is getting faster. The SCT outcome information is also a modulating factor to improve the quality of work. We, therefore, periodically document our activity and pursue to find a solution for getting better.

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TRANSFUSION MEDICINE AND APHERESIS

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Therapeutic plasma exchange in gastric signet ring cell carcinoma presenting as microangiopathic hemolytic anemia: a rare case report

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Objective: Cancer-associated microangiopathic hemolytic anemia (MAHA) is a rare but serious condition that is encountered in patients diagnosed with a malignancy. We describe a case of signet-ring cell carcinoma with a very rare presentation, namely a laboratory and clinical picture of MAHA, who demonstrated an effective thrombocyte level in response to therapeutic plasma exchange (TPE) therapy that was administered during the diagnostic period.

Case report: A 42-year-old male patient was referred to our hospital by an external center due to the complaint of recurrent epistaxis in the recent days, leukocytosis, anemia, and thrombocytopenia detected in his complete blood count. Hemogram data included the following; hemoglobin, 8.2 g/dL; white blood cells, 12.9×10^9/L; platelet count, 25×10^9/L; mean corpuscular volume (MCV), 82 fl. Laboratory data included the following: lactate dehydrogenase (LDH), 2826 IU/L; total bilirubin, 4.7 mg/dL; indirect bilirubin, 3.4 mg/dL; and a negative result on the direct antiglobulin test (Coombs). Vitamin-B12, folic acid, serum iron, and total iron-binding capacity levels, transferrin saturation, and thyroid function tests were normal. Peripheral blood smear showed fragmented erythrocytes (schistocyte), findings of erythrodysplasia, polychromasia, poikilocytosis, and in some areas, normoblasts and reticulocytosis. Reticulocyte percentage was nearly 14%. The patient was suspected of having MAHA based on these clinical, laboratory, and peripheral smear morphologic findings. Further tests were conducted in order to determine the etiology, primarily, TTP. A serum sample was collected to determine plasma ADAMTS-13 activity and therapeutic plasma exchange (TPE) was started as a treatment. Bone marrow aspiration (BMA) and biopsy (BMB) performed to examine bone marrow infiltration by hematologic and nonhematologic malignancies did not determine malignant cell infiltration. Serologies for viral infections autoantibodies were negative. A cervical-