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.

https://doi.org/10.1016/j.htct.2020.09.115

PP 53

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.

https://doi.org/10.1016/j.htct.2020.09.116

TRANSFUSION MEDICINE AND APHERESIS

PP 54

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-

thoracic-full abdominal computed tomography (CT) scan was performed in order to detect malignancies. On abdominal CT, 1 to 2 lymphadenopathies of 15 × 12 mm in the peripancreatic and perigastric area and pathological wall thickening (2.5 cm) at the level of the gastric corpus were detected. Gastroduodenoscopy revealed an edematous, partly ulcerated lesion protruding from the mucosa that extended to the angularis from the gastric cardia. Gastric tissue biopsy report indicated poorly differentiated adenocarcinoma (signet-ring cell predominant). The case was accepted as MAHA secondary to gastric carcinoma (ADAMTS-13 activity tested earlier was within normal limits at 84%). While waiting for the results of the biopsy and the other tests, the patient underwent 14 sessions of TPE in total. Following TPE, platelet count increased from 25×10^9/L up to 162×10^9/L, fragmented erythrocyte rate in peripheral smear decreased more than 75% and other laboratory findings of hemolysis (LDH, bilirubin, etc.) significantly decreased. The patient was transferred to the medical oncology clinic for the chemotherapeutic treatment of the primary gastric carcinoma.

Conclusion: Malignancy-associated MAHA is generally linked to a poor prognosis and the optimal treatment is not known. However, there is evidence for the importance of promptly initiating an effective antineoplastic regimen and it is also noteworthy that administering therapeutic plasma exchange (TPE) therapy for the purpose of immunocomplex removal could be beneficial in patients with symptoms of bleeding and thrombosis.

https://doi.org/10.1016/j.htct.2020.09.117

PP 55

A signet ring cell carcinoma presented as refractory acquired thrombotic thrombocytopenic purpura

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Objective: Microangiopathic hemolytic anemia (MAHA) can be observed as a paraneoplastic syndrome (PS) in certain tumors. MAHA related signet ring cell carcinoma (SRCC) of an unknown origin is very infrequent. Herein we present a SRCC case presented with refractory acquired thrombotic thrombocytopenic purpura (TTP).

Case report: 35 years old men applied to emergency service with fatigue and headache on January 2020. In his anamnesis he had a history of alcoholic pancreatitis. His physical examination was normal except the neurological symptoms which are temporary loss of consciousness and disorientation. His laboratory tests resulted as white blood cell 9020/μL, hemoglobin 3.5 g/dL, platelet 18,000/μL, MCV 110.7 fl, urea 58 mg/dL, creatinine 0.84 mg/dL, AST 68 u/L, ALT 33 u/L, indirect bilirubin 1.88 mg/dL, LDH 2257 u/L, reticulocyte 0.1, haptoglobulin <8 mg/dL, INR 1.42, Prothrombin time 13.2, fibrinogen 184 mg/dL, coombs negative. He had consulted to our clinic with bicytopenia and hemolysis. Schistocytes, micro-spherocytes and thrombocytopenia were observed in his blood smear. Microangiopathic hemolytic anemia was present and he was considered as thrombotic thrombocytopenic purpura. Plasma exchange treatment was initiated however he was refractory to this treatment. He had epistaxis and blurred vision during the follow-up. Superficial hemorrhages on the edges of the optic disc and roth spots were detected. Pain had emerged in his right arm. Doppler ultrasonography revealed the occlusion of cephalic vein with non-recanalized thrombus in the subacute process from the antecubital level at the forearm level. Thorax and abdomen computerized tomography (CT) resulted as liver 220 cm, spleen 14 cm, minimal pleural effusion, thickening of minor curvature in stomach corpus with hepatogastric and paraceliac lymphadenopathy. As a result of CT endoscopic examination was planned. Bone marrow investigation by our clinic resulted as the metastasis of adenocarcinoma. Ulcerations and necrosis was observed by gastric endoscopy procedure. Biopsy was taken during endoscopic intervention which resulted as signet ring cell carcinoma. He was transferred to oncology clinic for his treatment. Unfortunately he died in one month after his transfer.

Conclusion: Only 40% of TTP cases have the complete pentad and in 75% of the cases there is a triad of microangiopathic hemolytic anemia, thrombocytopenia, and neurological findings. In our case there was no acute kidney failure, however all the other features favored TTP, and diagnosis was made without the kidney failure. MAHA may be seen as a PS in some tumors, especially gastric cancers. Tumor related MAHA is generally accompanied by bone marrow (BM) metastases. As a result, BM investigation may be used as the main diagnostic method to find the underlying cancer. Total plasma exchange is usually performed in the treatment of cancer-associated TTP, however fewer than 20% of the cases respond to plasma exchange. Likely, our case did not respond to plasma exchange treatment either. The clinical course of cases with tumor related MAHA is usually poor, and these cases are usually refractory to plasma exchange treatment. In conclusion, physicians should suspect a malignancy and BM involvement when faced with a case of refractory TTP.

https://doi.org/10.1016/j.htct.2020.09.118