Objective: The aim of this study is to evaluate the allogeneic hematopoietic stem cell transplantation data performed in our transplant center for patients diagnosed with Acute Myeloid Leukemia (AML). **Materials and methods:** Between 2016 and 2024, a retrospective evaluation was conducted on 176 patients who underwent allogeneic hematopoietic stem cell transplantation at the Adult Stem Cell Transplant Unit of Private Emsey Hospital due to AML diagnosis. **Results:** The retrospective analysis of AML patients who underwent allogeneic transplantation revealed an average age of 43.2 years. A total of 130 patients received a related donor transplant, while 46 underwent unrelated donor transplantation. The Turkish National Bone Marrow Donor Bank (TÜRKÖK) was the only source for unrelated donors. HLA allele mismatch (1 allele) was present in 29 donors, and 80 transplants were performed between different genders. The average time for neutrophil engraftment was 17.7 days, and for platelet engraftment, it was 19.5 days. The 100-day mortality rate was determined to be 20%. **Conclusion:** AML is a hematologic malignancy that can be treated with allogeneic stem cell transplantation. Unrelated donor transplantation is a critical option for patients without a suitable family donor who require allogeneic transplantation. Our center's AML transplant patient demographic data aligns with the findings in the literature. **Case report:** Acute Myeloid Leukemia (AML) is the most common clonal hematopoietic stem cell disorder in adults. Prognosis is assessed based on age, gender, performance status, and cytogenetic mutations. Hematopoietic Stem Cell Transplantation (HSCT) is a widely used treatment method, particularly for hematological malignancies. Allogeneic HSCT offers curative potential for many hematologic malignancies. Transplantation is performed in AML patients to reduce the risk of relapse. A fully HLA-matched related donor is the preferred choice for allogeneic HSCT. However, only about 25% of patients have a fully HLA-matched related donor. In such cases, an allogeneic transplant from an unrelated HLA-matched donor may be performed. This study presents data on allogeneic HSCT procedures performed in our transplant center for AML patients. **Methodology:** A retrospective analysis was conducted on allogeneic hematopoietic stem cell transplantations performed between 2016 and 2024 in the Adult Stem Cell Transplant Unit of Private Emsey Hospital for AML patients. **Results:** A total of 176 AML patients who underwent allogeneic transplantation were retrospectively analyzed. The median patient age was 43.2 years (range: 16–72), with 53% (n = 94) being male and 47% (n = 82) female. Two patients (1%) had previously undergone autologous stem cell transplantation, and seven patients (4%) had a history of prior allogeneic transplantation. Among the patients, 130 (74%) underwent HLA-Matched Sibling Donor (MSD) transplantation, while 46 (26%) received an unrelated donor transplant. All unrelated donors were obtained from the Turkish National Bone Marrow Donor Bank (TÜRKÖK). Among the 176 stem cell donors, 29 (16%) had a one-allele HLA mismatch (9/10), while 147 (86%) were fully HLA-matched (6/6 and 10/10). A total of 80 transplants (37%) were performed between different genders. The median age of donors was 39.5 years (range: 14–82). As a conditioning regimen, 107 patients (61%) received myeloablative conditioning, 57 patients (32%) received a non-myeloablative regimen, and 12 patients (7%) received a Reduced-Intensity Conditioning (RIC) regimen. Peripheral blood stem cells were used for all patients, with an average of 6.59×10^6/kg (range: 2.86 -15.5×10^6/kg) stem cells infused. Eighteen patients (10%) experienced graft failure, while the remaining 158 patients achieved engraftment, with neutrophil engraftment occurring at a median of 17.7 days (range: 10–32) and platelet engraftment at a median of 19.5 days (range: 10–34). Among the 158 patients who achieved engraftment, chimerism analysis could not be performed in 18 cases. In the remaining 140 patients, chimerism levels ranged from 10% to 100%, with an average of 94%. Full donor chimerism (100%) was observed in 46 patients (33%). Within the first 100 days, 35 patients (20%) died. Among patients who achieved engraftment, 17 (11%) died. The median time to death was 48.2 days (range: 8–94). **Conclusion:** Despite intensive chemotherapy, 10%–40% of AML patients fail to achieve remission. Even among young adult patients who reach remission, relapse occurs in approximately 50% of cases. In this high-risk group, allogeneic HSCT represents a curative treatment option. Unrelated donor transplantation is particularly valuable for patients requiring allogeneic HSCT who lack a suitable related donor. Our center's AML allogeneic HSCT patient and donor characteristics, conditioning regimens, engraftment times, and 100-day mortality rates are consistent with findings in the literature.

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PP 10_ Case report

EXPERIENCE WITH TOTALLY IMPLANTABLE VENOUS ACCESS PORTS IN PATIENTS WITH HEMATOLOGICAL MALIGNANCIES

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Objective: Totally Implantable Venous Access Ports (TIVAP) are widely preferred for oncology patients requiring chemotherapy.[1] The most common cause of port removal in hematological malignancy patients is infection, followed by dysfunction.[2,3] The aim of this study is to evaluate single center experience of TIVAP in patients with hematologic oncology. **Methodology:** 126 patients who were followed up in the hematology-oncology department of the tertiary oncology hospital and who had port catheters inserted in the interventional radiology unit between January 2019 – January 2022 was evaluated retrospectively. Post-procedure control radiographs of the patients were evaluated for early complications and localization suitability. Additionally, patients' port catheter follow-ups were evaluated for infection and dysfunction. **Results:** 68 (54%) of the patients were male and 58 (46%) were female. The age range of the patients was 18–65, and the average age was calculated as 41.3. 60 (48%) patients were

followed up with a diagnosis of acute myeloid leukemia, 30 (24%) with acute lymphocytic leukemia, 24 (19%) with non-Hodgkin lymphoma, 10 (8%) with Hodgkin lymphoma, and 2 (1%) with multiple myeloma. In the control radiograph examination taken after the procedure, the port location was appropriate in 124 patients and the port catheter ended in the right ventricle in 2 patients. No early complications were observed in any of the patients. Port catheter dysfunction was observed in 8 patients (6%) during follow-up. The average duration of dysfunction development was calculated as 17.25 weeks. Port infection developed in 14 patients (11%) and the average time to develop port infection was calculated as 3.4 weeks. Port infection rates are higher in hematological malignancy patients compared to other malignancy patient groups. **Conclusion:** Although the use of port catheters is common in patients with hematological malignancy, caution should be exercised in terms of possible port infection.

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Adult Hematology Abstract Categories

Cellular Therapy

PP 11_Case report

VALIDATION OF LONG-TERM HANDLING AND STORAGE CONDITIONS FOR HEMATOPOIETIC STEM CELL PRODUCTS FOR AUTOLOGOUS TRANSPLANTS

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Objective: Hematopoietic Stem Cells (HPSCs) are multipotent stem cells that can differentiate into lymphoid and myeloid progenitors, giving rise to White Blood Cells (WBCs), Red Blood Cells (RBCs), and platelets. HPSCs are a widely used treatment for many hematological non-malignant and malignant disorders. HPSCs can be used in the fresh or cryopreserved state for future use. Fresh HPSCs are typically stored at 2–6°C for up to 72 hours and are primarily used for allogeneic transplants or autologous transplants in myeloma and lymphoma patients. However, in some cases of autologous donations, HPSC transplantation is delayed more than three days after collection. In such situations, the cells are thawed after short-term preservation, resulting in a 35% cell viability loss. This study aimed to investigate the quality of HPSCs products after long-term storage exceeding 72 hours. **Methodology:** Between July 11, 2021, and February12, 2022, the bone marrow and stem cell transplant center at King Fahad Specialist Hospital (KFSH-D) collected 12 autologous mobilized PBHSCs according to established procedures. All participants provided written informed consent to participate in this study. The study design protocol was approved by the Institutional Review Boards. This study was conducted under the principles of the Declaration of Helsinki. Following PBHSC collection, samples for quality testing were obtained from the PBHSC bags as a control. Under sterile conditions and using a class II A2 biosafety cabinet, 5–15 mL of the PBHSCs product bag was transferred to a sterile transfer bag using a bag spike or a sterile connecting device. All products were stored in a continuously monitored refrigerator set at a temperature between 2–6° C. Viability, CD34+ enumeration, and Total Nucleated Cells (TNC) count were subsequently determined at 0, 72, and 120 hours. Product sterility was also evaluated at 0 and 120 hours. **Results:** Twelve PBHSCs products were prepared in the transfer bags. All products contained a minimum of 287.9 cells/μL based on the CD34+ counts. Of the 12 products collected, 66.7% were from male autologous donors, and the remaining 33.3% were female donors. During hypothermal storage at 2–6°C, a gradual loss of total cell viability, CD34+ cell recovery, and TNC recovery were observed, but these losses were not significant. Total cell viability cells decreased by 2.18%±1.84% after 72 hours and by 7.40% ± 4.12% after 120 hours. The mean recovery of CD34+ reached 83.83% ± 5.35% after 120 hours. The mean TNC recovery was 89.93% ± 8.39% after 72 hours and 76.18% ± 14.09% after 120 hours. The stability characteristics of the PBHSC products stored for different intervals (72 hours and 120 hours). No significant differences were observed between the fresh PBHSCs and those stored for 120 hours of hypothermal storage. Blood culture was used to evaluate the sterility of the PBHSCs on the collection day and 120 hours after hypothermic storage. All products tested negative for bacterial contamination. **Conclusion:** Extended hypothermal storage for up to 120 hours has little to no impact on the quality of PBHSCs. Future research should focus on investigating the extended storage of hematopoietic stem cells from other sources, such as bone marrow and cord blood, and use a larger sample size, given that cellular components may vary from different sources. Quality assessment should also include TNC counts and sterility testing, in addition to CD34+ count and viability. The inclusion of in-vitro assays as part of functionality testing could further enhance the quality assessment of stored PBHSCs products.

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