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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