Aim: Hematopoietic Stem Cell Transplantation (HSCT) stands as a cornerstone in the treatment of various disorders. The kinetics of hematopoietic recovery after Autologous Stem Cell Transplantation (ASCT) may be affected by clinical characteristics, including the coexistence of infectious diseases. In 2022, data from the World Health Organization estimated that approximately 39 million people were living with Human Immunodeficiency Virus (HIV) worldwide. The interplay between HIV infection and HSCT outcomes requires better understanding. In this study, we evaluated the association of HIV infection with ASCT outcomes in Minas Gerais, Brazil. **Methods:** This nested case-control study included individuals with hematological and non-hematological diseases who underwent ASCT. Cryopreservation was conducted at a single processing facility between 2014 and 2023, and patients received clinical care at six transplant centers. Covariates and outcome data were retrieved from participants' records. HIV-positive participants were compared to age, gender, center, and disease-matched HIV-negative participants (ratio 1:5). Infusion-related adverse effects were recorded using standard forms. Time of engraftment refers to the interval between cell infusion (Day 0) and the first day with a neutrophil count higher than 0.5×10^9 per L or a platelet count higher than 20×10^9 per L, respectively. Delayed engraftment was defined as unsuccessful recovery within 14-days after the infusion. **Results:** Fourteen HIV-positive participants were included. Most of the HIV-positive participants had multiple myeloma (35.7%; n = 5) followed by Hodgkin's lymphoma (28.6%; n = 4), and non-Hodgkin lymphoma (21.4%; n = 3); eleven (78.6%) were male, and the mean age was 47 ± 20 years. As expected, the HIV-positive and HIV-negative groups were similar with respect to the matching variables of age, gender, disease, and transplant center. The median time to platelet engraftment was 14 days for participants with HIV and 11 days for those without HIV (p = 0.017). HIV-positive participants had significantly five times higher odds of delayed platelet engraftment compared to the HIV-negative group (OR = 5.0; 95% CI 1.3–19.9; p = 0.028). The association between HIV infection and time to platelet engraftment, as well as delayed platelet engraftment, remained significant after adjusting for infused CD34+ cell dose (p = 0.008 and p = 0.024, respectively). There was no association between HIV infection and time to neutrophil engraftment or delayed neutrophil engraftment. The frequency of adverse effects during infusion was similar in HIV-positive and HIV-negative participants. **Discussion:** HIV infection may delay platelet engraftment after ASCT due to immunosuppression, direct effects of HIV on bone marrow cells, chronic inflammation, potential myelosuppressive effects of antiretroviral therapy, co-infections, and pre-existing bone marrow damage. Understanding the dynamics between HIV infection and HSCT outcomes is imperative for optimizing transplant strategies and post-transplant care, including transfusion support. **Conclusion:** In summary, HIV infection was associated with an increased risk of delayed platelet engraftment in patients undergoing ASCT.

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10-YEARS ANALYSIS OF CRYOBAG FRACTURE IN A LARGE INVENTORY OF CELLULAR THERAPY PRODUCTS: RATES AND RISK FACTORS

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Aim: Cryobags are crucial for the freezing, storage and transport of cellular therapy products. Despite their widespread use and importance, cryobags are vulnerable to damage, and fractures can significantly impact both patient outcomes and the operational efficiency of cellular therapy facilities. To date, there have been no reported studies on Peripheral Blood Stem Cell (PBSC) bag fractures. This study aimed to investigate the incidence and determinants of cryobag fractures within a large inventory of cellular therapy products in Brazil. **Methods:** This retrospective cohort study included cryobags from individuals referred for hematopoietic stem cell transplantation or immunotherapy. Cryopreservation was performed at a single processing facility between 2015–2024, with clinical care provided at nine transplant centers. The products were centrifuged, and plasma was removed to adjust the buffy coat to achieve the final Total Nucleated Cell (TNC) concentration of $\leq7.5\times10^8$ cells/mL after adding the cryopreservation solution. Cryobags (CryoStore CS500N, OriGen Biomedical, Austin, TX, USA) were frozen at an uncontrolled rate in a -80°C mechanical freezer and stored in a vapor phase storage tank. The frozen cryobags underwent macroscopic evaluation in the vapor phase through visual inspection to check for fractures and leaks. Records were reviewed to gather information on covariates and outcomes. **Results:** During the study period, 2,078 PBSC collections were performed for 1,637 patients (911 [55.7%] male) with ages ranging from 1- to 75-years. Multiple myeloma was the most common diagnosis (59.8%), followed by lymphoma (27.9%). Among the 2,078 products collected, 514 (24.7%) were processed from components collected in two consecutive apheresis procedures, and 1,564 (75.3%) were processed after a single apheresis procedure, resulting in 1,821 cryopreservation procedures. Each cryopreservation procedure resulted in one to seven cryobags being frozen, totaling 4,144 cryobags studied. Out of these, 15 (0.4%) experienced fractures. Of the 15 fractures, 13 (86.7%) were detected during macroscopic evaluation in the processing facility, and two (13.3%) occurred after the cryobags were released to the transplant center. The incidence rate of cryobag fractures was 0.41 (95% CI 0.23–0.66) per 100 bag-years. The cumulative incidence of fractures after 3.16-years of storage was 1% (95% CI 0.7%–1.3%). Multivariate analysis identified two independent predictors of cryobag fracture: the initial TNC count (OR = 1.002, 95% CI 1.001–1.003; p < 0.001) and hematocrit (OR = 0.55, 95% CI 0.34–0.90; p = 0.018). When compared to products with an initial TNC ≤ 10×10^8 cells/mL, those with TNC > 10×10^8 cells/mL had 10.8 times higher odds (95% CI 3.3–35.9; p < 0.001) of triggering a cryobag fracture. **Discussion:** This study provides critical insights into cryobag fractures incidence and determinants. Our findings highlight two key predictors of cryobag fractures.

Elevated TNC concentrations were associated with an increased risk of fractures due to heightened mechanical stress and potential ice crystal formation. Conversely, higher hematocrit levels were associated with a decreased risk of fractures, likely due to enhanced cryoprotectant effectiveness and increased stability within the cryobag. These insights underscore the importance of monitoring and optimizing both TNC and hematocrit levels during the preparation of cellular therapy products. **Conclusion:** This study revealed a low cryobag fracture rate of 0.4 per 100 bag-years. Higher total nucleated cell counts increased fracture risk, while higher hematocrit levels reduced it. Optimizing these factors in cryopreservation protocols could enhance the safety and reliability of cellular therapy products.

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AUTOLOGOUS STEM CELL TRANSPLANTATION FOR LIGHT CHAIN AMYLOIDOSIS: A SINGLE CENTER REPORT

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Context: High dose intravenous melphalan followed by Autologous Hematopoietic Stem Cell Transplant (ASCT) has been as essential part of light chain (AL) amyloidosis since 1990s. Patients who achieve complete hematologic response following ASCT have better Overall Survival (OS). However Transplant-Related Mortality (TRM) and clinical complications during ASCT continue to be a challenge and a major concern. **Objective/Methods:** We retrospectively reviewed AL patients who underwent ASCT between 2016 and 2024 at Beneficência Portuguesa de São Paulo (BP) to assess the procedure's safety and long-term outcomes. We analyzed patient baseline characteristics, Progression-Free Survival (PFS), ICU admission rates and Overall Survival (OS). **Results:** Twenty seven patients met criteria for this retrospective study. The median age was 60 y/o (95% CI 38–70), 17 (63%) had an ECOG score 0, 11 (40%) had a mayo score of 1, 11 of which had cardiac involment and 23 renal invovement. Amog them, 81% (95% CI 61%–92%) received ASCT as part of a first line therapy, five (18%) patients received no therapy prior to ASCT. Twelve (44%) received CyBorDex and nine (33%) Dara-based quadruplet regimens. The most commoly used conditioning regimen was Melphalan 200 mg/m^2 (55.6%) with the remainder of patients received 140 mg/m^2. During hospitalization, 11 patients experienced congestive heart failure de-compensation (4 profile 'B', 7 profile 'C'), no patients were on dialysis at baseline, but 4 required hemodialysis during hospital follow-up. There were no in-hospital deaths in this cohort, however 33% of patients were admitted to the ICU within 30 days of follow-up (95% CI 16–510). The OS and progression free survival rates, as estimated at 2 years by Kaplan Meier, were 88% (95% CI 73–100) and 89% (95% CI 76–100) respectively, without any mortality within 100 days from ASCT. **Conclusion:** In the present experience ASCT was safe and resulted in favorable outcomes, without TRM demonstrated.

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AÇÕES DE SENSIBILIZAÇÃO COMO INSTRUMENTO PARA AMPLIAÇÃO DA CAPTAÇÃO DE NOVOS CADASTROS DE DOADORES DE MEDULA ÓSSEA: UMA PROPOSTA PARA A HEMORREDE DO ESTADO DO MARANHÃO

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Objetivo: Sensibilizar a população jovem sobre a doação de medula óssea e analisar o impactado das ações de captação visando o aumento do interesse deste público. Utilizando a informação para desfazer os mitos existentes relacionados a este tipo de doação, assim como, avaliar o perfil de novos doadores levando em consideração algumas variáveis como cor, idade e gênero. **Materiais e métodos:** A pesquisa tem como base algumas fases, a princípio toda a equipe atuante será capacitada através de recursos digitais, os profissionais capacitados irão atuar em locais públicos como: Shoppings, igrejas, universidades, além de campanhas em mídias sociais e outros, para sensibilizar os candidatos ao cadastro de doação de medula óssea. A coleta de dados será realizada no Hemocentro Coordenador (HEMOMAR) e Hemonúcleos de várias cidades, por meio de um questionário oficial do Registro Brasileiro de Doadores Voluntários de Medula Óssea (REDOME), que possui dados demográficos e comportamentais dos candidatos à doação. A análise estatística será realizada por meio do teste de Qui-Quadrado para analisar as diferenças na distribuição de frequência das variáveis. **Resultados:** Os resultados esperados incluem a análise dos dados referente ao período de janeiro de 2023 a janeiro de 2024, sendo possível a identificação de um aumento significativo no número de cadastro de novos doadores de medula óssea, ressaltando uma maior compreensão da população sobre a importância da doação. Ao identificar o perfil de novos doadores é possível realizar uma análise detalhada no que diz respeito às características comportamentais e demográficas que podem ser pertinentes para as campanhas de sensibilização realizadas futuramente. **Discussão:** Discorre-se a respeito do aprimoramento com base na eficácia da implementação das estratégias que visam a sensibilização de doadores. A relevância de simplificar o processo de doação enfatizando o uso de informações compreensíveis, haja visto que, um dos grandes obstáculos para a doação é a falta de conhecimento. Além disso, a pesquisa argumentará a importância de abranger as instituições e as comunidades locais nas campanhas de doação, estabelecendo um ambiente estimulante para os doadores. **Conclusão:** Propõe-se a importância da sensibilização e educação da população, relacionando as abordagens inovadoras e implementações de