Outcome of Non-cryopreserved DMSO-free peripheral blood stem cells in autologous SCT in Multiple Myeloma, An attempt to overcome financial toxicity of cryopreservation

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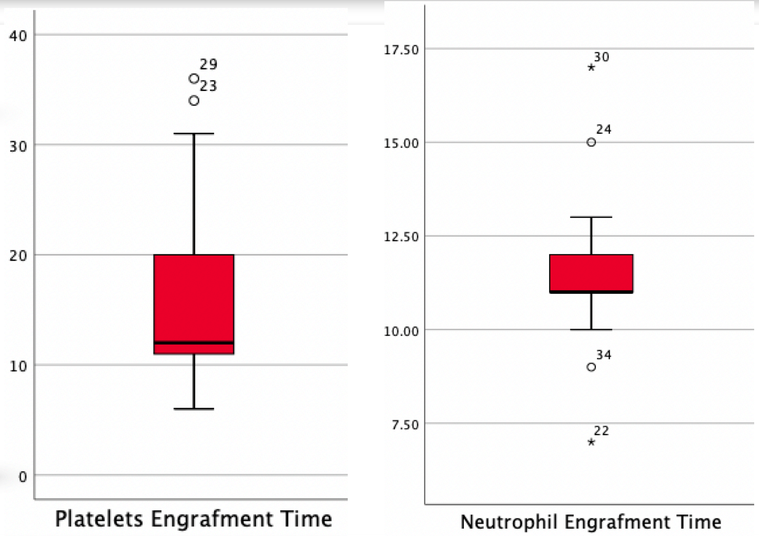
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INTRODUCTION

In autologous stem cell transplantation(SCT), stem cells are typically cryopreserved with 5% dimethyl sulfoxide (DMSO) to maintain cell viability and structural integrity [1]. Previous studies have reported similar outcomes for the use of fresh peripheral blood stem cells (PBSC) in autotransplantation compared to cryopreserved grafts.[2]

METHOD

A single-arm study involving 39 cases of multiple myeloma (MM) who underwent Auto-SCT from 2022 to 2024. All patients included were in either complete remission (CR) or very good partial remission (VGPR). Each patient received conditioning with Melphalan at a dose of 200 mg/m². The stem cells were maintained at 4°C for 48 to 72 hours.



RESULTS

All 39 cases achieved engraftment. The mean storage time was 79.3 hours. The mean time to neutrophil engraftment was 11.3 days (range, 7–17 days). The mean time to platelet engraftment for non-cryopreserved PBSCs was 10 days (range, 6–30 days).

AIM

Evaluating the time to neutrophilic recovery above 500 cells per microliter and time to platelet recovery above 20,000/µL in non-cryopreserved, DMSO-free PBSC.

CONCLUSION

The infusion of fresh PBSC refrigerated for up to three days is effective and safe for Auto-SCT in patients with multiple myeloma with accepted engraftment timing, making it a useful alternative to cryopreserved PBSC. A larger study with a head-to-head comparison with the cryopreservation technique is needed for better results .

REFERENCES

1 - Meriç N et al.,2023
2-Guo M et al.,2023

CONTACT INFORMATION

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