transfer of cryopreserved cell therapy units from nitrogen storage to a -80°C freezer, using in vitro assays. **Material and methods:** This experimental study included cellular therapy units from individuals referred for autologous stem cell transplantation. Cryopreservation was performed at a single processing facility between 2014 and 2024. Cryopreserved units authorized for discard and aliquoted into at least two bags were included. One bag was thawed immediately after removal from the vapor nitrogen tank, while the paired bag was stored at -80°C for three months before being thawed. The -80°C freezer was continuously monitored, with brief door openings, but temperatures never exceeded -76°C. Thawing was performed using a 37°C water-bath. A resuspension solution (3% human albumin, 2% hydroxyethyl starch 130/0.4, and 2.5% ACD) was added at double the final concentration in a 1:1 volume ratio. Samples were collected for total nucleated cell count, CD34+ immunophenotyping, and colony-forming assays. Data were described using medians with interquartile ranges or percentages, and continuous variables were compared using the non-parametric Wilcoxon paired test. **Results:** To date, seven paired bags have been analyzed. The median total nucleated cell count was 292.9 (272.4) $\times 10^8$ in the liquid nitrogen group and 270.4 (255.9) $\times 10^8$ in the -80°C group ($p = 0.109$). Viable CD34+ cell counts were comparable between groups, with medians of 50.4 (102.5) $\times 10^6$ and 62.5 (50.5) $\times 10^6$, respectively ($p = 0.469$). The number of GM colonies did not differ significantly, with 11 (31.5) colonies per 400 CD34+ cells/mL in the nitrogen group and 8 (39.5) colonies per 400 CD34+ cells/mL in the -80°C group ($p = 0.313$). **Discussion and conclusion:** The study suggests that -80°C freezers can be a viable short-term storage solution for cryopreserved cellular therapy products, offering a feasible contingency option. This method could significantly reduce costs by lowering operational expenses and infrastructure needs. Furthermore, it could improve access to cellular therapies, especially in under-resourced settings and transplant centers lacking nitrogen storage. This would facilitate the decentralization and broader distribution of transplants across the country, enhancing the availability and delivery of life-saving treatments and contributing to more sustainable healthcare practices. These preliminary results indicate that -80°C freezers may serve as a short-term contingency storage strategy for cell therapy products, provided they are maintained under strict conditions to prevent transient warming events. However, the limited number of thawed units and lack of in vivo validation highlight the need for further research before clinical guidelines can be established.

https://doi.org/10.1016/j.htct.2025.105516

ID - 2942

IMPACTO CLÍNICO DA TERAPIA COM CÉLULAS CAR T ANTI-CD19 EM NEOPLASIAS DE CÉLULAS B: UMA REVISÃO SISTEMÁTICA E METANÁLISE

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Introdução: As células T com receptores de antígeno quimérico (CAR) direcionados ao CD19 representam uma das terapias celulares mais notáveis para o manejo de neoplasias de células B. No entanto, a sobrevida livre de doença a longo prazo ainda é um desafio a ser superado. **Objetivos:** Avaliar a influência de diferentes domínios hinge, transmembrana (TM) e coestimulatórios do CAR, bem como das condições de produção, tipo de produto celular, doses, idade dos pacientes e tipos tumorais, nos desfechos clínicos de pacientes com cânceres de células B tratados com células CAR T anti-CD19. **Material e métodos:** Foi realizada uma revisão sistemática e metanálise de acordo com as diretrizes PRISMA, registrada no PROSPERO (CRD42022360268). Foram incluídos 56 estudos (3.493 pacientes) na revisão sistemática e 46 estudos (3.421 pacientes) na meta-análise. As covariáveis analisadas incluíram: tipo de domínio hinge, TM e coestimulatórios no CAR; condições de produção das células CAR T; população celular transduzida com o CAR; número de infusões; dose de células CAR T injetadas/kg; tipo de CAR T anti-CD19 (nome); tipo tumoral e idade. **Discussão e conclusão:** A taxa global de resposta completa (BCR) foi de 56%, com sobrevida global (OS) de 60% e taxa de melhor resposta objetiva (BOR) de 75%. Pacientes mais jovens apresentaram prevalência significativamente maior de BCR, sem diferenças na OS. A presença de CD28 nos domínios hinge, TM e coestimulatórios do CAR melhorou todos os desfechos avaliados. Doses entre 1 e 4,9 milhões de células/kg resultaram em melhores resultados clínicos. Os dados também sugerem que, independentemente de apresentarem altas respostas objetivas, os pacientes podem obter benefícios de sobrevida com a terapia CAR T anti-CD19. Esta meta-análise constitui um instrumento crítico para geração de hipóteses, captando efeitos presentes na literatura sobre CAR T anti-CD19, especialmente diante da escassez de ensaios clínicos randomizados e grandes estudos observacionais.

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https://doi.org/10.1016/j.htct.2025.105517