ELSEVIER

Blood 142 (2023) 6932–6933

The 65th ASH Annual Meeting Abstracts

ONLINE PUBLICATION ONLY

705.CELLULAR IMMUNOTHERAPIES: LATE PHASE AND COMMERCIALLY AVAILABLE THERAPIES

Efficacy and Safety of CAR T-Cell Therapy in Patients ≥ 70 Years Old

Maria Silvina Odstrcil, MD[1], *Daniel R. Couriel, MD MS, MBA*[1]

[1] Huntsman Cancer Institute, University of Utah, Salt Lake City, UT

Introduction

Chimeric antigen receptor T-cell (CAR T-cell) therapy has revolutionized the treatment of multiple myeloma(MM) and No Hodgkin Lymphoma (NHL) in patients with relapsed or refractory disease without other treatment options. Both MM and NHL incidence increases with age. At the time of diagnosis, the average age of patients with multiple myeloma is 69 years old, and 65 years old for patients with large cell lymphomas .

Elderly patients tend to have more comorbidities and greater treatment-related toxicity, requiring stricter monitoring. However, data regarding efficacy and toxicity CAR T -cell therapy in the elderly, geriatric population are insufficient.

Objective : to describe the efficacy and safety of CAR T-cell therapy in the elderly.

Materials and methods

Single-center, retrospective, case series study.

Patients ≥70 years old with a diagnosis of MM or NHL who received commercial CAR T-cell therapy between September 2018 and June 2023 were included. Patients were followed up from the infusion date until death or loss to follow-up.

Outcomes

Efficacy: Global response (RG) and complete response (CR), 1-year overall survival (OS), 1-year progression-free survival (PFS)

Safety: Cytokine release syndrome (CRS) of any grade, ≥ grade 2 and ≥ grade 3. Immune Effector Cell Associated Neurotoxicity (ICANS) of any grade, ≥ grade 2 and ≥ grade 3. Cytopenias grade ≥3, Neutrophil recovery at day 90, Platelet recovery at day 90.

Result

A total of 28 patients were included, with a median of 76 years old (range 70 to 84 years), 71% were male (n=20). Ten patients (36%) were diagnosed with MM and 18 (65%) with NHL (16 Diffuse Large B-cell Lymphomas, and three Mantle Lymphomas). 21% (n=6) of patients had a comorbidity score (HCT-CI) ≥4 and 29% (n=7) had a Karnofsky Index ≤70%.

CAR T-cell therapy was Kymriah (n=8), Breyanzi (n=4), Tecartus (n=3), Yescarta (n=3), Abecma (n=7), and Carvykti (n=3). The median follow-up was 239 days (range 30 to 1468).

The most frequent complication was CRS, present in 75% of the patients (n=21). CRS was grade 2-3 in 11 patients (40%) and ≥3 in 1 patient (4%). The proportion of patients with ICANS was 42% (n=12); with a grade ≥ 2 in 7 patients (58%) and ≥3 in 3 patients (25%).

The median time for CRS was 3 days (range 1 to 14 days) and for ICANS 5 days (range 3 to 8 days). 58% (n=12) of patients with CRS developed ICANS, but all the patients with ICANS also developed CRS. CRS preceded ICANS in 66% of patients (n=8) and occurred simultaneously in 40% of cases (n=4). Half of the patients who presented grade 2-3 ICANS presented grade 2-3 CRS (n= 3). Tocilizumab was used in 16 patients and dexametasona in 16 patients. No patient died from complications.

22 patients (79%) developed grade ≥3 cytopenias. Neutropenia was the most frequent (n=22) followed by thrombocytopenia (n=15).

The GR was 89% (n=25), the CR 60% (n=25), and the PR 29% (n=25). During follow up, seven patients (25%) relapsed or progressed, with a median of 132 days. An identical relapse rate was observed between MM and NHL patients, 29% and 28% respectively. Eight patients died (29%), 3 due to relapse. Half of the dead patients had an HCT-CI ≥3 and a Karnofsky ≤70%. Only 1 patient died during admission.

The 1y-OS was 71% and the 1y-RFS was 62%.

Conclusion

The outcomes of CAR T-cell therapy in our population are comparable to the ones reported in literature for geriatric and younger patients, indicating that age per se should not automatically exclude older patients from consideration for CAR T-cell therapy.

The use of CAR T-cell therapy in patients older than 70 years without frailty, presented an adequate response and an acceptable safety profile, CAR T-cell therapy toxicity was manageable in most cases with early and timely treatment.
Keywords: A case-control study, CAR T-cell therapy, Multiple myeloma, Non-Hodgkin lymphoma.

Disclosures Couriel: *SeaGen:* Consultancy; *Incyte:* Consultancy.

https://doi.org/10.1182/blood-2023-191207