

Outcome, quality of life and patient expectations of the first 55 CAR-T patients at our hospital

Clinical hemato-oncology

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Introduction

Chimeric Antigen Receptor T-cell (CART) therapy is a major breakthrough for treating relapsed or refractory blood cancers, particularly for refractory lymphoma, multiple myeloma (MM), and B-cell acute lymphoblastic leukemia (B-ALL), offering durable remissions and improved survival. While evidence supports its efficacy and safety, less is known about its impact on patient-reported outcomes, quality of life, and how patients’ expectations compare to their real experiences after treatment. This single-center cohort study presents real-world outcomes, quality of life, and patient-reported experience in a consecutive series of CART-treated patients.

Methods

The study was a retrospective observational analysis including all patients who received CAR-T cell therapy at our hospital between 2021 and end of September 2025 for lymphoma, multiple myeloma, or B-cell acute lymphoblastic leukemia (B-ALL). Quality of life was assessed using the EORTC QLQ-C30 instrument, supplemented by a structured questionnaire evaluating patient expectations. Data were analyzed using descriptive statistics. Only patients with general consent are included; a declaration of consent was obtained for current quality of life surveys.

Results

Of the 52 patients, 24 were female and 31 male; mean age was 66.6 ± 11.6 years (median 69.5). Underlying diseases included MM (n=15), lymphoma (n=36), and B-ALL (n=1). Among lymphoma cases, 30 were diffuse large B-cell lymphoma (DLBCL, including five CNS cases) and six mantle cell lymphoma. CART products used: Yescarta (n=24), Tecartus (n=8), Carvykti (n=11), Breyanzi (n=5), and Abecma (n=4). Median follow-up was 245 days (mean 466 ± 444). At data cut-off, 41/52 patients (78.8%) were alive. Eleven deaths occurred (8 lymphoma-7 DLBCL [all Yescarta] and 2 mantle cell [both Tecartus]; 2 MM [Abecma 1, Carvykti 1]).

Patient-reported outcomes:

Of the 41 patients still alive, we received 27 completed questionnaires, which corresponds to a response rate of 66%. The following comparison highlights functional and symptom scores between the EORTC general population reference group and the CART-treated cohort (SG). Higher functional scores indicate better perceived functioning, while higher symptom scores reflect greater symptom burden.

Function Domains			
Dimension	General Population (Mean ± SD)	CART Cohort SG (Mean ± SD)	Interpretation
Global Health	71 (22)	70 (22)	Comparable general well-being between both groups.
Physical Function	90 (16)	84 (16)	Slightly reduced physical capacity in CART patients.
Role Function	85 (25)	72 (29)	Marked limitation in daily role activities among CART patients.
Emotional Function	76 (23)	79 (17)	Marginally better emotional stability in CART cohort.
Cognitive Function	86 (20)	87 (14)	Equivalent cognitive performance in both groups.
Social Function	88 (23)	66 (31)	Substantial decline in social engagement post-CART therapy.

Symptom Domains			
Symptom	General Population (Mean ± SD)	CART Cohort SG (Mean ± SD)	Interpretation
Fatigue	24 (24)	36 (26)	Increased fatigue reported among CART patients.
Pain	21 (28)	20 (26)	Comparable pain levels to the general population.
Insomnia	22 (30)	21 (26)	Sleep disturbances at a similar level to baseline population data.
Financial Difficulties	10 (23)	20 (28)	Higher financial burden observed in CART recipients.

Preparation phase for CAR-T therapy

The entire preparatory phase, including information about the planned therapy, risks, benefits, and alternatives, support from the treatment team, psychological preparation, and whether they were sure that CAR-T was the right therapy for them, received a very positive response, with a score of 9 on a scale of 1-10. The question of how well they felt psychologically prepared for the therapy was answered with striking heterogeneity; 4 out of 27 patients gave a score of <7. All patients were certain that CAR-T was the right therapy for them (see figure 1).

CAR-T treatment phase

During their hospital stay, patients felt very well cared for (9.3 points +/-1.3). Side effects occurred only to a limited extent, as expected in advance (7.1 +/-2.8), and were reported as moderately bothersome (6.7 +/- 2.4) (see figure 2).

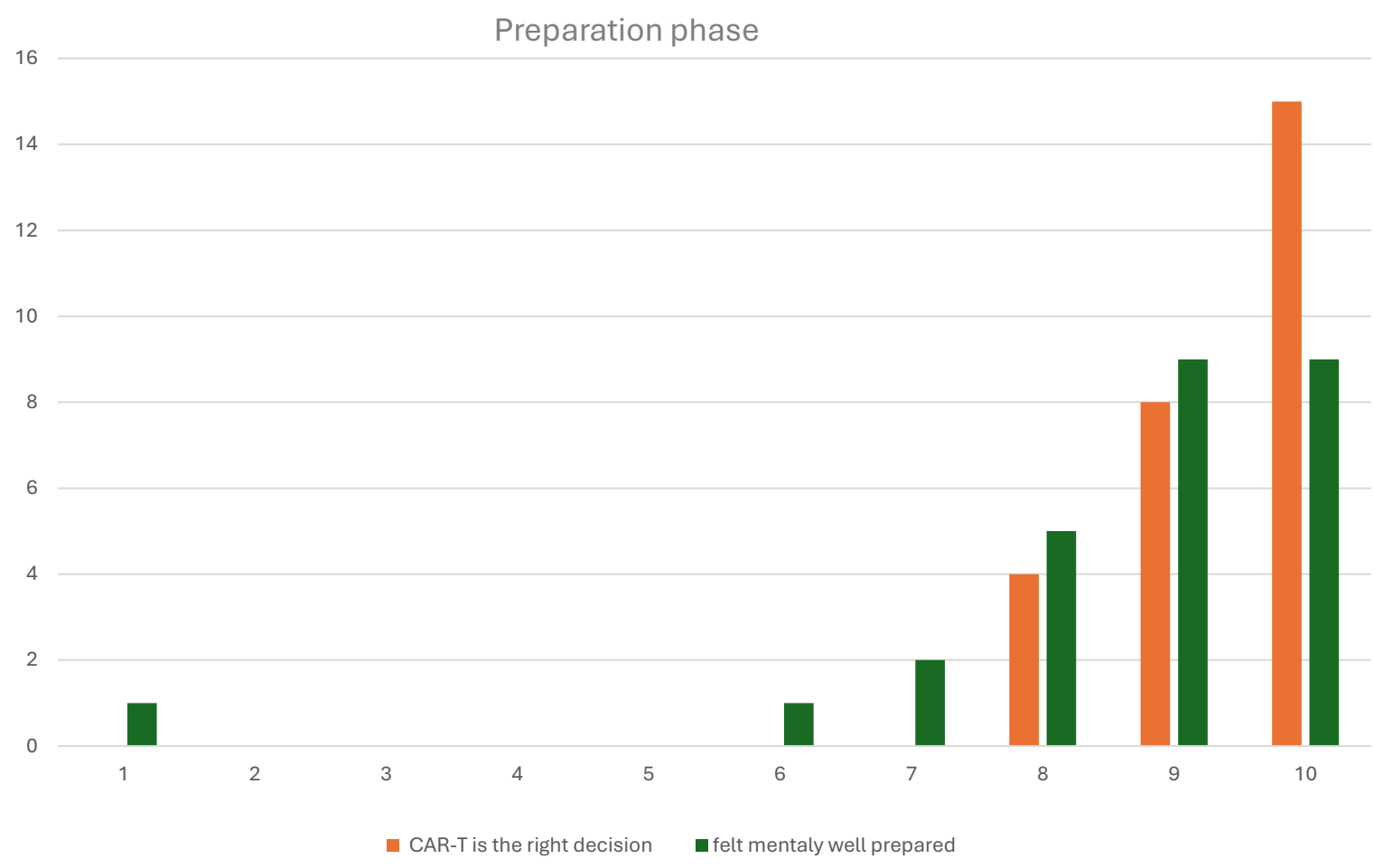


Figure 1: Patients rated on a scale of 1-10 if CAR-T therapy is the right decision (orange) and if they felt mentally well prepared (green).

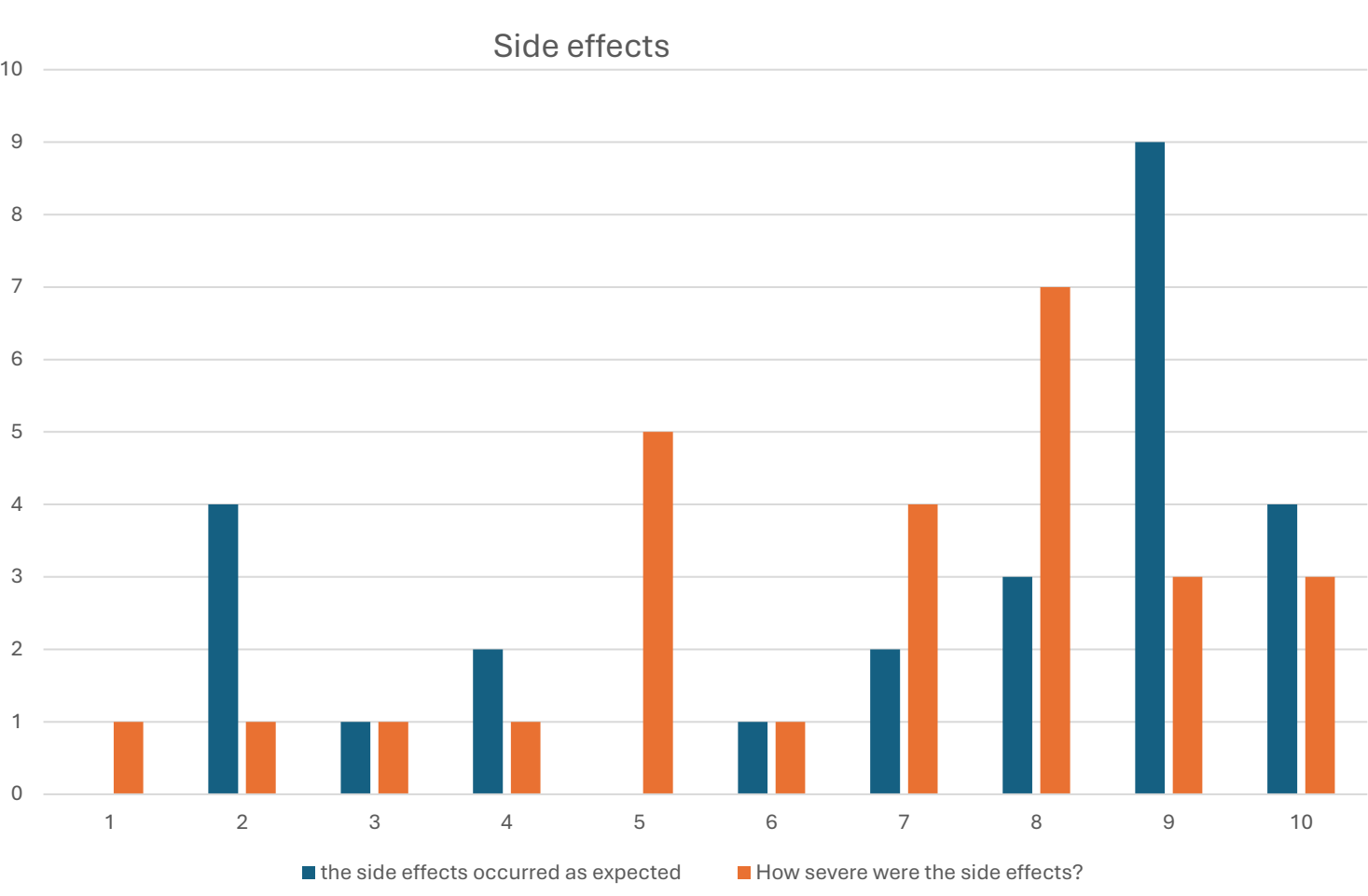


Figure 2: Patients rated on a scale of 1-10 whether the side effects occurred as expected (blue) and how severe the side effects were (orange)

Post-CAR-T treatment phase

In the period following hospitalization, patients felt that they had received good care (8.8 +/-1.6). However, three were only moderately satisfied and rated the follow-up care with only 4 points. In the evaluation of the overall result of CAR-T therapy, the majority expressed a very high level of satisfaction (8.7 +/- 2.5), with 3 outliers who rated this question with only 4, 3 and 1 point (see figure 3). Twenty-four out of 27 would definitely (8-10 out of 10 points) choose CAR-T therapy again (see figure 4).

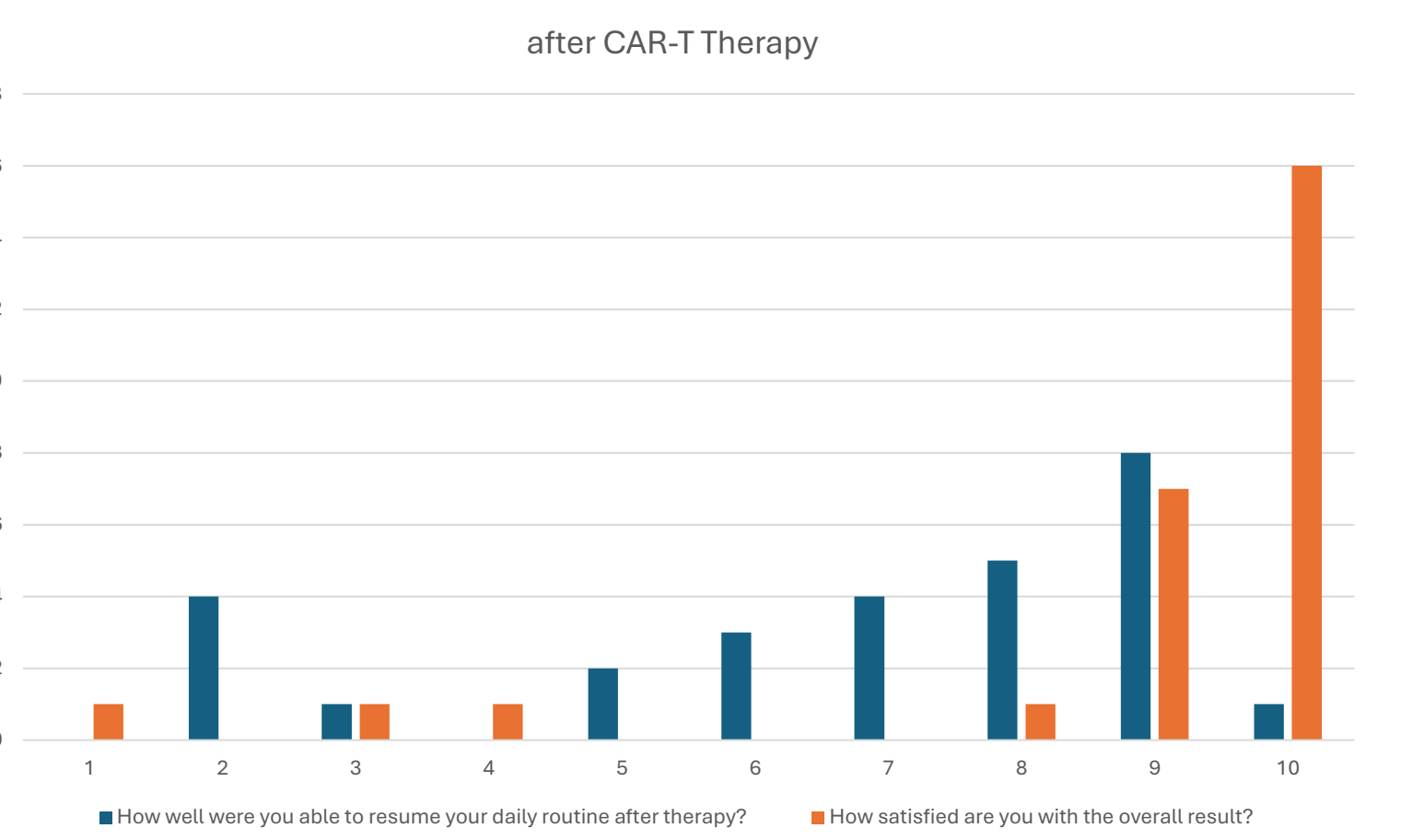


Figure 3: Patients rated on a scale of 1-10 how well they were able to resume their daily activities after being discharged (blue) and how satisfied they were with the overall result (orange)

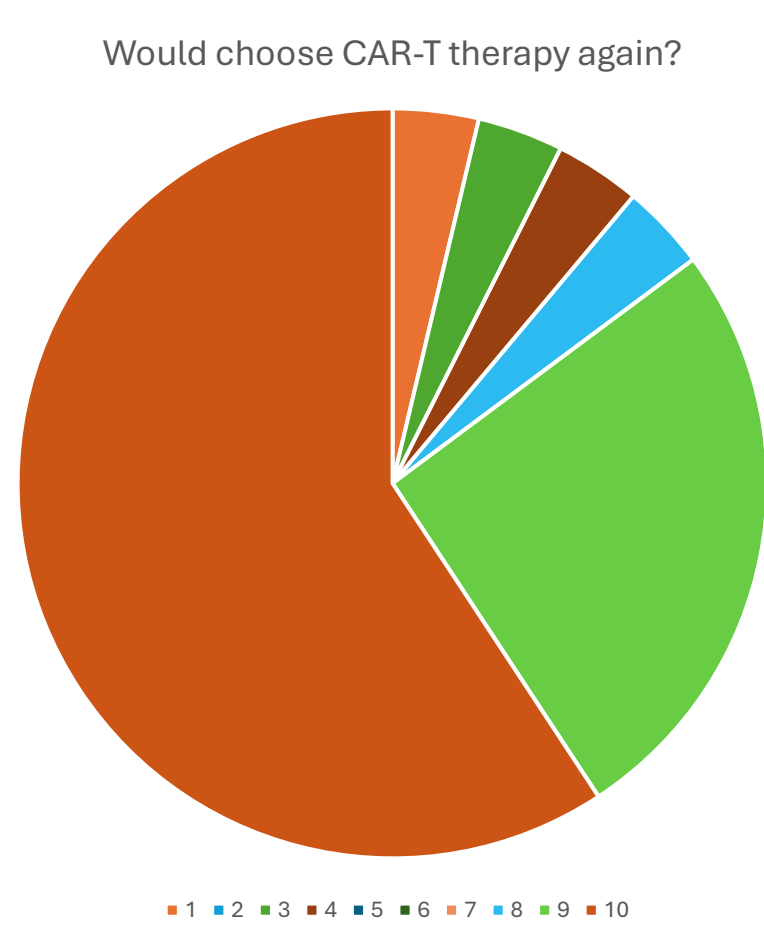


Figure 4: Patients rated on a scale of 1-10 if they would choose CAR-T therapy again

Conclusions

This retrospective observational study analyzed all patients who received CAR-T cell therapy for lymphoma, multiple myeloma, or B-ALL at our hospital before end of September 2025. Patients reported high satisfaction and confidence in their treatment decision, felt well informed, and most would choose CAR-T therapy again. Compared with the general population, the CART cohort shows preserved global health and emotional resilience despite reduced physical, role, and social functioning. Fatigue and financial concerns are more pronounced, while pain and insomnia remain similar to normative data. This suggests that although CART patients regain satisfactory life quality, certain domains- particularly social integration and energy levels- remain affected during recovery.