CT-871: FRAILTY AS A PREDICTOR OF 30-DAY READMISSION IN CAR-T THERAPY RECIPIENTS

Danielle C. Thor, DO, MAUB[1]; Sachin Prasad, DO[2]; Ben Brik, DO[2]; Vineet Polineni, DO[2]; Sindhupavani Avuthu, DO[2]; Isabella Caputi, OMS-IV[3]

1. Fox Chase Cancer Center – Temple Health, Philadelphia, PA
2. Jefferson Health – New Jersey
3. Rowan-Virtua School of Osteopathic Medicine

INTRODUCTION

Chimeric antigen receptor T-cell (CAR-T) therapy has transformed outcomes for hematological malignancies, yet post-discharge readmissions remain common and costly.[1] We sought to evaluate the role of frailty in predicting readmission risk following administration of CAR-T therapy.

METHODS

We utilized the 2022 datasets from the National Inpatient Sample and the National Readmissions Database to identify 3,826 patients who received all-type CAR-T therapy and were admitted within 30 days following their treatment. Propensity score matching was applied to adjust for confounders, and statistical significance was determined by $p < 0.05$. Our primary outcome was frailty as a predictor of 30-day readmission, as determined by the Hospital Frailty Risk Score (HFRS)[2], which classifies patients into low (0-4), intermediate (5-15), and high (> 15) frailty categories. Several secondary outcomes were also assessed and reported when statistically significant, as noted below.

CONCLUSION

The HFRS is a valuable prognostic tool which may have specific utility in the longitudinal management of CAR-T recipients when faced with 30-day readmission following therapy administration. Further research remains necessary for clinical application within the 30-day window and beyond.

RESULTS

3,964 CAR-T recipients were identified, of which 3,826 were alive at the time of index discharge. Of the total CAR-T recipients, 52.6% were found to have low HFRS, 45.5% were found to have intermediate HFRS, and 1.87% were found to have high HFRS.

Intermediate frailty was independently associated with higher adjusted odds (aOR) of readmission (aOR 1.41, CI 1.09-1.90, p = 0.040), whereas low frailty was associated with lower adjusted odds of readmission (aOR 0.725, CI 0.57-0.94, p = 0.016). When compared to low frailty patients, intermediate frailty patients again demonstrated higher adjusted odds of readmission (aOR 1.44, CI 1.07-1.90, p=0.028).

On secondary analysis, readmitted CAR-T recipients were found to have higher overall mortality (3.45% versus 5.90%, aOR 1.762, CI 1.12-2.78, p = 0.015), and mortality increased significantly across frailty stratifications (low 0.18%, intermediate 7.42%, high 11.25%; p < 0.0005).

Analysis	aOR	95% CI	p value
Intermediate frailty and 30-day readmission	1.41	1.09-1.90	0.040
Low frailty and 30-day readmission	0.725	0.57-0.94	0.016
Intermediate vs. low frailty, readmission	1.44	1.07-1.90	0.028
Readmission and overall mortality (3.45% vs. 5.90%)	1.762	1.12-2.78	0.015
Mortality across frailty strata (0.18% / 7.42% / 11.25%)	N/A	N/A	< 0.0005

CONTACT INFORMATION

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