

NEUROTOXICITY FROM CAR-T: IMPACT ON PHYSICAL AND COGNITIVE FUNCTION

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BACKGROUND

Chimeric antigen receptor (CAR)-T cell therapy is an immunotherapy treatment for many advanced cancers. 20-60% of patients treated with CAR-T develop immune effector cell-associated neurotoxicity syndrome (ICANS) with symptoms including encephalopathy, aphasia, and motor impairment.¹ We intend to characterize the impact of ICANS on functional outcomes.

METHODS

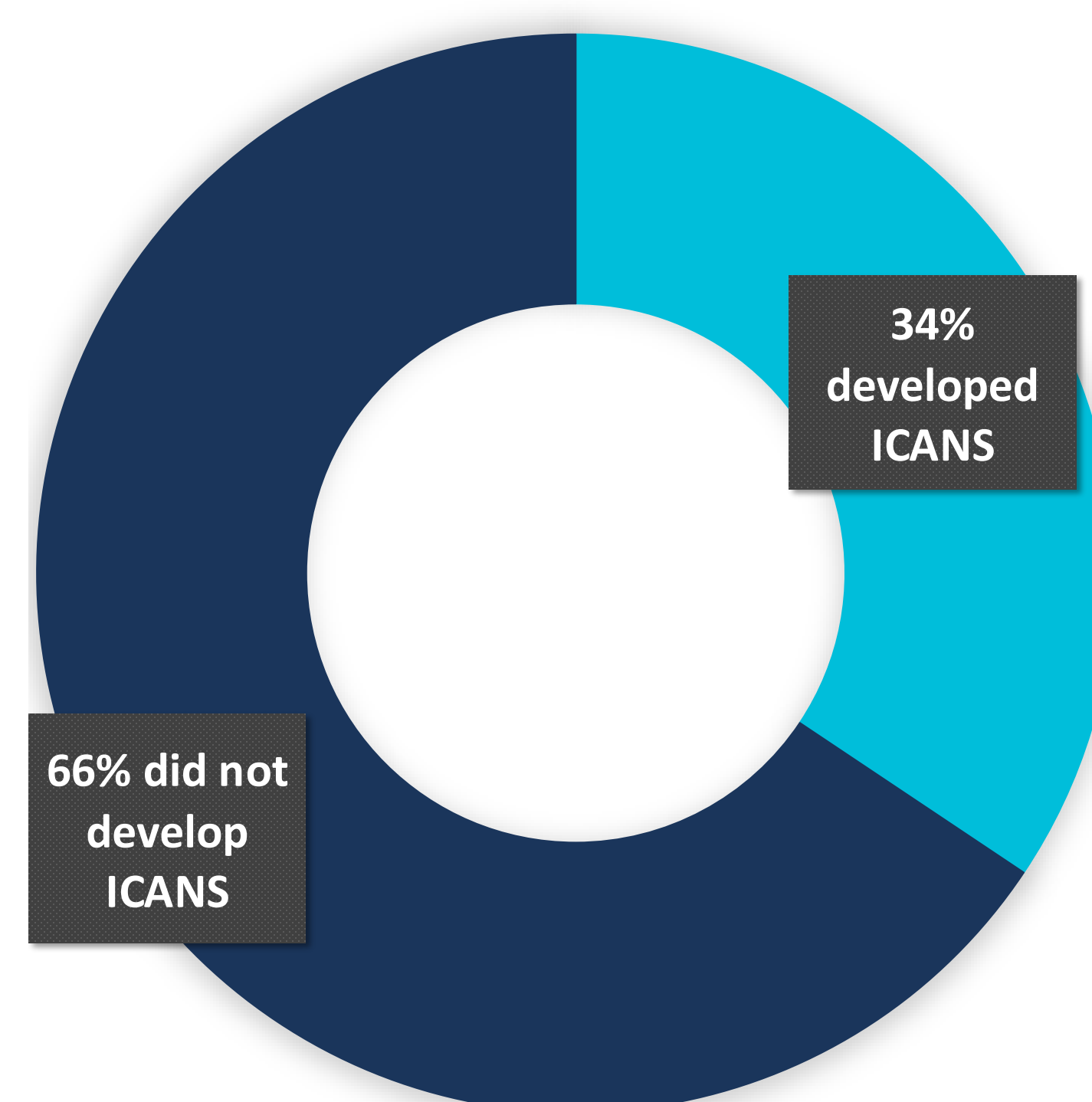
A retrospective chart review was performed on patients admitted to University of Washington Medical Center for CAR-T therapy from 7/1/2023-12/31/2023. Patients who developed ICANS were identified and outcomes including length of stay (LOS), speech therapy (ST) visits, physical therapy (PT) visits, and Activity Measure for Post-Acute Care (AM-PAC) scores² were analyzed.

How Much Difficulty Does the Patient Currently Have?	Unable	A Lot	A Little	None
Turning over in bed (including adjusting bedclothes, sheets and blankets)?	1	2	3	4
Sitting down on and standing up from a chair with arms (e.g., wheelchair, bedside commode, etc.)?	1	2	3	4
Moving from lying on back to sitting on the side of the bed?	1	2	3	4
How much help from another person does the patient currently need?	Total	A lot	A little	None
Moving to and from a bed to a chair (including a wheelchair)?	1	2	3	4
To walk in hospital room?	1	2	3	4
Climbing 3-5 steps with a railing?	1	2	3	4

Figure 1. AM-PAC Basic Mobility Inpatient Short Form

RESULTS

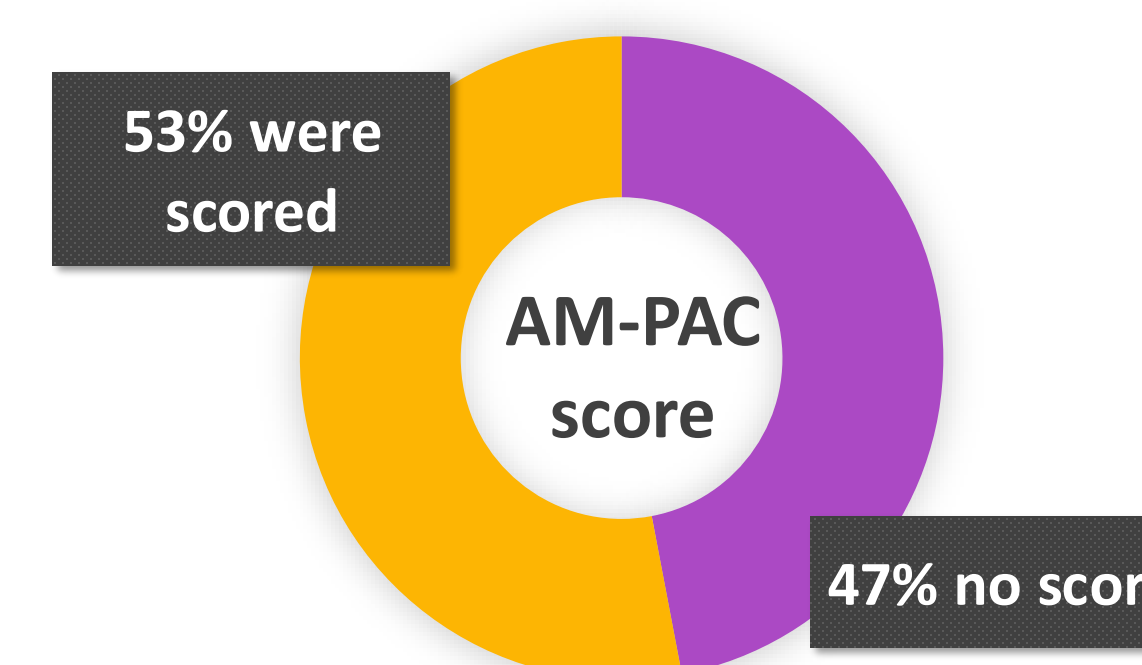
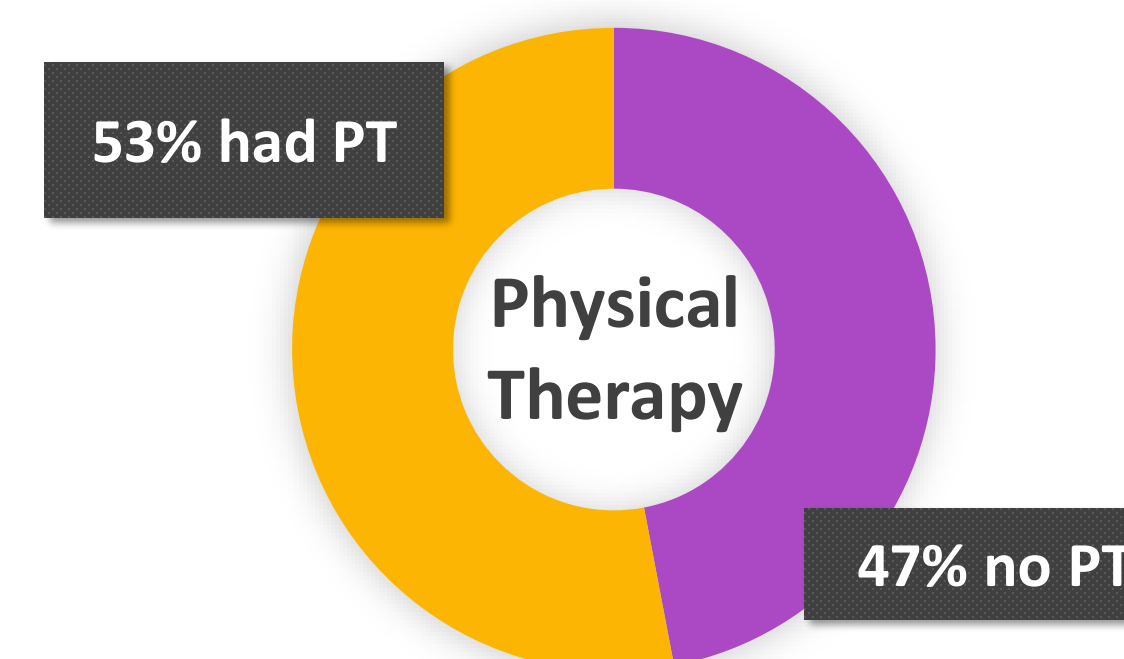
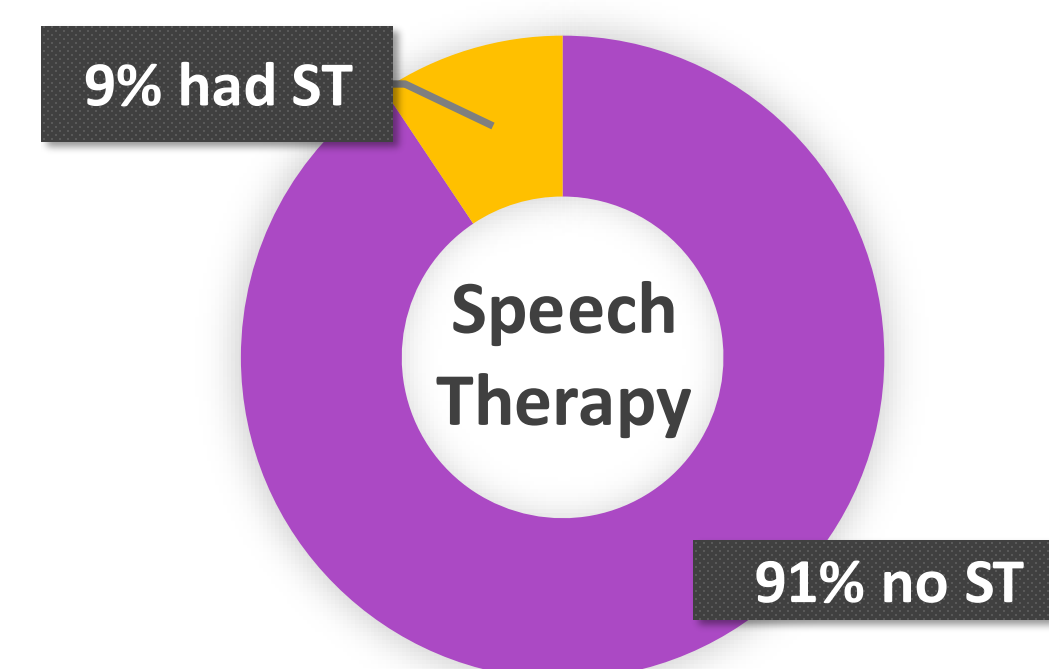
Of patients admitted for CAR-T:



Median Length of Hospitalization:

Patients without ICANS: 11 days

Patients with ICANS: 14 days



RESULTS

Of 32 patients admitted for CAR-T, 11 (34%) developed ICANS during their hospitalization, 3 (9%) received ST (median 3 visits), and 17 (53%) received PT (median 2 visits). Seventeen patients (53%) had an admission AM-PAC score (median score 23, interquartile range 22-24). Median length of stay for patients who developed ICANS during admission was 14 days (IQR 12.5-19.5) compared with 11 days (IQR 10-11) for patients without ICANS (n=21) (P=0.07 unpaired t-test). The median number of PT visits per patient with ICANS (n=9) was 2 (IQR 2-3) compared with 1 (IQR 1-2) for patients without ICANS (n=8) (P=0.3 unpaired t-test).

DISCUSSION

The vast majority of patients who developed ICANS were not seen by ST, likely an underutilized resource. With the growth of effective CAR-T cell therapy, there is a critical need to better understand the impact of rehabilitation services on long-term physical and cognitive outcomes.

REFERENCES

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