
Supplementary information

Beyond the storm – subacute toxicities and late effects in children receiving CAR T cells

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Supplementary Table 1 Proposed neuropsychological evaluation to assess acute and late cognitive effects of CAR T cell therapy								
Domains	Proposed measures^a	Baseline^b	7–14 d	21–28 d^c	3 mo^b	12 mo^c	24 mo^c	36 mo^c
CAR T-cell neurotoxicity	ICANS score	✓	✓	✓	✓	✓	✓	✓
Processing speed	Cogstate detection	✓		✓	✓	✓	✓	✓
Attention	Cogstate identification	✓		✓	✓	✓	✓	✓
Learning and memory	Cogstate One Card Learning	✓		✓	✓	✓	✓	✓
Working memory	Cogstate One-Back	✓		✓	✓	✓	✓	✓
	Wechsler Digit Span: Forward/Backward			✓		✓	✓	✓
Executive function/cognitive flexibility	Cogstate Groton Maze learning test	✓		✓	✓	✓	✓	✓
Verbal fluency	Verbal Fluency (standard form: F-A-S)			✓			✓	
	Verbal Fluency (alternate form: B-H-R)					✓		✓
Oral and graphomotor processing speed	Symbol Digit Modalities test			✓		✓	✓	✓
Estimated intellectual functioning	WASI-II vocabulary/matrix reasoning (estimated IQ)			✓		✓	✓	✓
Academic screening	Woodcock Johnson-IV (reading/calculation)			✓		✓	✓	✓
Patient and parent reported outcome measures	Background/history and update form	✓		✓		✓	✓	✓
	NCI neuro-symptom checklist parent report	✓	✓	✓	✓	✓	✓	✓
	PROMIS CAT self and parent report (selected domains)	✓		✓	✓	✓	✓	✓
	Vineland-3 CAT parent report			✓		✓	✓	✓
	BRIEF-2 parent report			✓		✓	✓	✓

^aProposed outcome measures to assess the recommended domains in CAR T-cell trials at this time; comparable measures evaluating these domains may be used or additional domains may be assessed if needed.

^bCore battery: shorter assessment of a core set of domains deemed most important for investigators to assess consistently across CAR T-cell trials using the proposed or similar measures to monitor acute and late effects of CAR T-cell therapies (35–45 minutes).

^cComprehensive battery: longer assessment (includes the core battery) to evaluate other domains of functioning that may be affected by neurotoxicity; the domains/measures listed in the comprehensive battery can be modified or expanded by investigators to explore potential late effects on other areas of functioning (75–90 minutes).

BRIEF, Behavioral Rating Inventory of Executive Function; CAT, computer-adaptive tests; ICANS, immune effector cell-associated neurotoxicity syndrome; mo, months; NCI, National Cancer Institute (USA); PROMIS: Patient-Reported Outcomes Measurement Information System; WASI-II, Wechsler Abbreviated Scale Intelligence-2nd edition.

Test battery designed by the CAR T cell neurotoxicity working group: Jesse Bledsoe, Juliane Gust, Staci Martin, Haneen Shalabi, Agne Taraseviciute, Ashley Whitaker and Pam Wolters.