Management of CAR T-Cell Toxicities: Concordance and Divergence Between Healthcare Providers and Expert Consensus Recommendations

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Background

• Chimeric antigen receptor (CAR) T-cell therapy has been a major innovative breakthrough for hematologic malignancies with 2 currently FDA approved CAR T-cell products (tisagenlecleucel5 and axicabtagene ciloleucel5) and several others in different stages of clinical investigation

• CAR T-cell therapies are associated with unique safety profiles and potentially serious toxicities, including
  - Cytokine-release syndrome (CRS)
  - Immune effector cell–associated neurotoxicity (ICANS)

• These adverse events (AEs) require vigilant monitoring and prompt recognition and management to ensure patient safety and optimal therapeutic benefit

• We developed an online Interactive Decision Support Tool to give healthcare providers (HCPs) case-specific, evidence-based consensus guidance from a panel of 5 interdisciplinary experts on the management of AEs due to CAR T-cell therapy

• Here, we report a comparison of planned CAR T-cell toxicity management among HCPs using the tool vs the expert consensus recommendations in the tool

Methods

Interactive Decision Support Tool

The tool is online at: clinicaloptions.com/carttool

Results

Demographics and Cases Entered

- N = 231 cases entered by HCPs over 132 days (5/19 - 9/18/19)
- Most cases entered were for a patient who is planned to receive CAR T-cell therapy (n = 124; 53.7%)
- Of remaining 107 cases where patient had already received CAR T-cell therapy, most concerned a patient experiencing an AE (n = 90; 84.1%)

Concordance rates differed significantly between HCP types for

• Cytokine-release syndrome (CRS)
  - 60% were managed concordant with expert recommendations (n = 54)
  - No significant difference in concordance rates of US vs non-US HCPs (Chi-square P = .7642)

• Immune effector cell–associated neurotoxicity (ICANS)
  - 29% were managed concordant with expert recommendations (n = 26)

Impact of the Tool on Clinical Practice

- 43% of HCPs using the tool indicated intent to change practice as a result of the expert recommendations provided for their specific case

Conclusions

- These data suggest that many HCPs are not optimally managing AEs associated with CAR T-cell therapy administration
  - Only 60% of HCPs’ planned management of specific AEs was concordant with expert recommendations provided in the tool
  - Self-identified practice plans among US and non-US HCPs were similar in concordance with expert recommendations
  - The highest concordance with expert recommendations occurred with grade 3 AEs and the least concordance occurred with grade 1 AEs

- Use of an online tool providing interactive, case-specific, evidence-based consensus recommendations can improve patient care and safety
  - 43% of HCPs using the tool indicated intent to change practice as a result of the expert recommendations provided for their specific case

References:

1. Tisagenlecleucel package insert. 2. Axicabtagene ciloleucel package insert

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