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

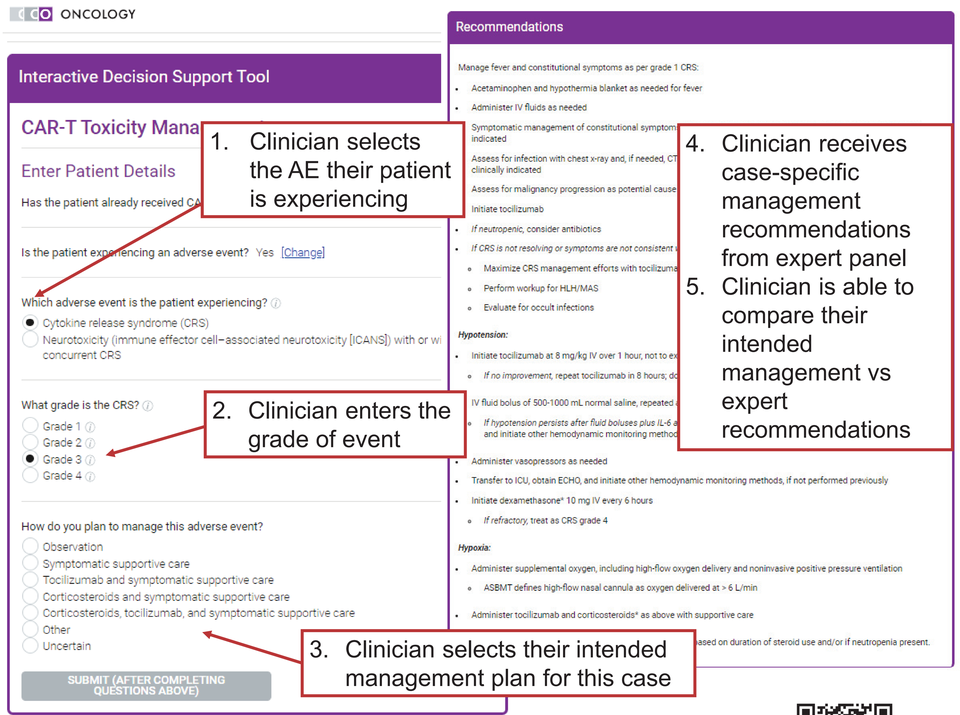
Matthew J. Frigault, MD[1]; Megan Cartwright, PhD[2]; Krista Marcello[2]; Timothy Quill, PhD[2]; Daniel J. DeAngelo, MD, PhD[3]; Ilene A. Galinsky, NP[3]; Shilpa Paul, PharmD, BCOP[4]; Jae H. Park, MD[5]

1. Massachusetts General Hospital; 2. Clinical Care Options, LLC; 3. Dana-Farber Cancer Institute; 4. MD Anderson Cancer Center; 5. Memorial Sloan Kettering Cancer Center.

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 (tisagenlecleucel[1] and axicabtagene ciloleucel[2]) 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



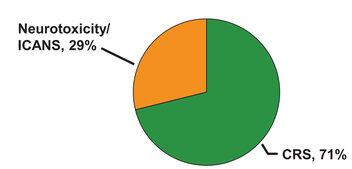
The tool is online at: clinicaloptions.com/carttool

Results

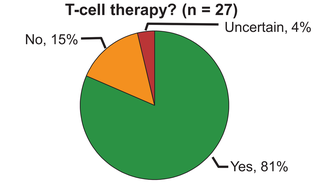
Demographics and Cases Entered

- N = 231 cases entered by HCPs over 132 days (5/9/19 - 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%)
- 50% of HCPs using the tool were physicians, 22% pharmacists, and 20% nurses
  - No significant difference in the type of HCP submitting a case for patient experiencing an AE vs submitting a case where CAR T-cell therapy was planned or patient not experiencing an AE (P = .1527)

Which adverse event is the patient experiencing? (n = 90)



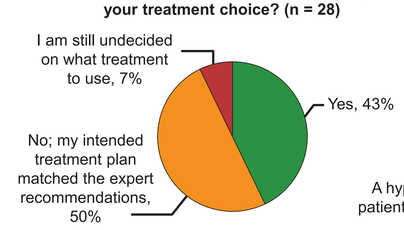
Do you practice at a treatment centerauthorized to administer CAR T-cell therapy? (n = 27)



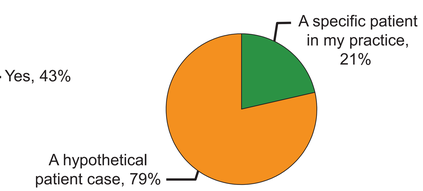
Impact of the Tool on Clinical Practice

- Of the 28 HCPs who answered the optional impact survey questions, 26 (93%) indicated that the tool recommendations either changed or confirmed their management plan
  - 21% reported that they were using the tool to manage a specific patient in their practice (no significant difference in answers for US vs non-US HCPs; Mann-Whitney U test P = .0767)

Did the expert recommendations change your treatment choice? (n = 28)



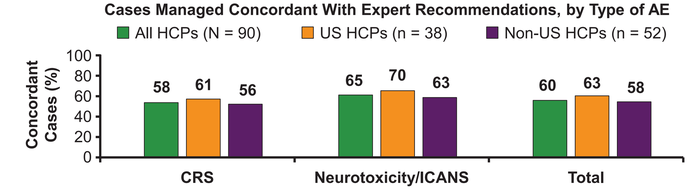
I used this tool to get recommendations on: (n = 28)



Concordance of HCP Toxicity Management With Expert Recommendations

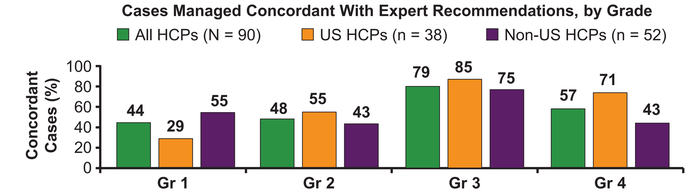
- Of 90 cases experiencing an AE entered into the tool by HCPs, 60% were managed concordant with expert recommendations (n = 54)
- No significant difference in concordance rates of US vs non-US HCPs for CRS (Chi-square P = .8625), ICANS (P = 1), or total cases (P = .7642)

Cases Managed Concordant With Expert Recommendations, by Type of AE



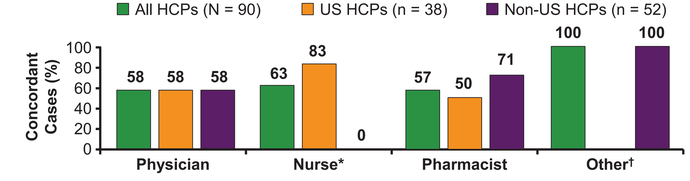
- Significant difference in concordance rates by grade (P = .0417)

Cases Managed Concordant With Expert Recommendations, by Grade



- Concordance rates differed significantly between HCP types for non-US HCPs (P = .0421)

Cases Managed Concordant With Expert Recommendations, by HCP Type



*n = 4 non-US nurses †No cases submitted by other HCPs for US HCPs.

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

This presentation is the intellectual property of the author/presenter. Contact kmarcello@clinicaloptions.com for permission to reprint and/or distribute. The online tool is part of an educational program supported by educational grants from Celgene Corporation and Kite, A Gilead Company.