UTILIZATION OF IMMUNE-BASED RESPONSE CRITERIA IN NCI-CTEP SPONSORED IMMUNOTHERAPY CLINICAL TRIALS

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Background Immune modulation with immunotherapy in various tumor types has resulted in patterns of responses unique from chemotherapy or targeted therapy, suggesting the need to modify established response criteria to accurately assess and interpret responses to immunotherapy regimens. Multiple iterations of immune-based response criteria adapted from the RECIST criteria have been proposed to date, with the development of the irRC in 2009, followed by the irRECIST criteria in 2013, iRECIST in 2017, and imRECIST in 2018. However, the extent of use of modified response criteria in clinical trials is unknown. We evaluated the trends in the inclusion of immune-based response criteria as an objective in immunotherapy-based CTEP-sponsored clinical trials.

Methods We conducted a retrospective analysis of all NCI-CTEP sponsored investigational clinical trials initiated by the data cut-off date of April 28, 2022. Trials for patients with solid tumors in which an immunotherapy agent was administered in at least one treatment arm were included in the analysis. Stated objectives for each trial were extracted and assessed for utilization of an immune-based response criteria.

Results A total of 160 solid-tumor trials were identified in the CTEP database to have immunotherapy as at least one of the treatment arms. Thirty (19%) of the trials incorporated immune-based criteria to assess response as an objective: 12 iRECIST (40%), 3 irRECIST (10%), 10 irRC (33%), 3 iRANO (10%), 2 “immune RECIST”, unspecified (7%). Sixteen of 97 randomized trials (16%) and 14 of 63 non-randomized trials (22%) used an immune-based response criteria. Of the 16 randomized trials utilizing an immune-related response criteria, 4 trials had incongruous arms comparing an immunotherapy-based regimen with a non-immunotherapy regimen. The remaining 12 randomized trials utilizing an immune-based response criteria had immunotherapy agents in all treatment arms. Forty-nine (92%) of the 53 randomized trials with a non-immunotherapy comparator treatment arm and 32 (73%) of the 44 randomized trials with immunotherapy in all treatment arms did not use immune-based response criteria.

Conclusions Our analysis demonstrates that only a small percentage of immunotherapy-based clinical trials utilized immune-based response criteria. Randomized trials with non-immunotherapy comparator treatment arm(s) tended to avoid inclusion of immune-based response criteria in the objectives, likely in favor of maintaining consistent response criteria for all arms. However, both randomized and non-randomized trials had similar rates of usage of immune-based response criteria, indicative of a generally low level of uptake of these novel response endpoints on immunotherapy clinical trials.

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REFERENCE