PROSPECTIVE CLINICAL TRIALS OF NOVEL SYSTEMIC THERAPIES IN ADVANCED NON-SMALL CELL LUNG CANCER—WHAT ABOUT RADIOTHERAPY?

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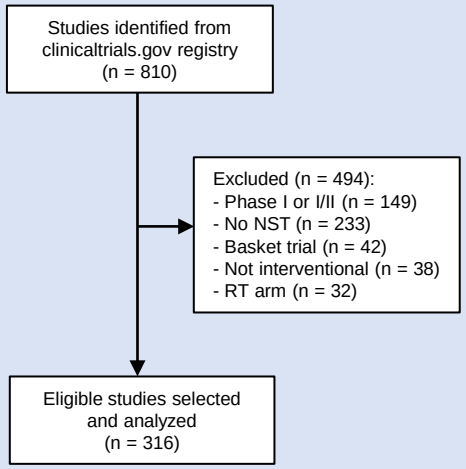
BACKGROUND

Novel systemic therapies (NSTs), including immunotherapies and targeted therapies, are growing in use and efficacy for advanced, recurrent and metastatic non-small cell lung cancer (NSCLC). Despite these successes, radiotherapy (RT) is frequently used alongside systemic treatment for palliation, or with ablative intent for oligometastases. As guidance regarding the delivery of RT alongside NSTs varies by protocol, the **objective of this study is to evaluate trial protocol specifications concerning pre- and peri-trial RT to inform safety**.

MATERIALS & METHODS

Clinicaltrials.gov was queried for completed and ongoing phase II-IV NST trials examining advanced, recurrent and metastatic NSCLC from inception to January 2023.
Where possible, full trial protocols were obtained.
Trial information including study design, primary endpoint, agents used and specifications regarding use of pre- and peri-trial RT was extracted and synthesized with descriptive statistics.



RESULTS

Table 1. Characteristics of analyzed clinical trials evaluating one or more novel systemic therapies in patients with advanced, recurrent and metastatic NSCLC

Characteristic	Value (n = 316)
Study Phase	
II	188 (59.5%)
III	121 (38.3%)
IV	7 (2.2%)
Study Design	
Randomized	197 (62.3%)
Non-Randomized	23 (7.3%)
Other	96 (30.4%)
Masking	
Blinded	66 (20.9%)
Open Label	250 (79.1%)
Funding Source	
Industry	174 (55.1%)
NIH	11 (3.5%)
Combination	65 (20.6%)
Other	66 (20.9%)
Collaborative	
Single Institution	191 (60.4%)
Multi-Institution	125 (39.6%)
Study Location Group	
North America	159 (50.3%)
Europe	37 (11.7%)
Asia	87 (27.5%)
Other	33 (10.4%)
NST Type	
Targeted Therapy	167 (52.8%)
Immunotherapy	95 (30.1%)
Both	54 (17.1%)
NST Targets	
EGFR	122 (38.6%)
VEGF	64 (20.3%)
ALK	6 (1.9%)
MEK	11 (3.5%)
PD-1	126 (39.9%)
PD-L1	44 (13.9%)
Primary Endpoint	
Overall Survival	51 (16.1%)
Progression Free Survival	137 (43.4%)
Response Rate	102 (32.3%)
Toxicity	26 (8.2%)

RESULTS

Table 2. Frequency and type of specification regarding pre-trial radiotherapy

Characteristic	Value
Pre-Trial RT Addressed in Inclusion/Exclusion Criteria	246/316 (77.8%)
RT Site Specified	182/246 (74.0%)
RT Intent Specified	156/246 (63.4%)
Washout Specified	227/246 (92.3%)
Thoracic RT Addressed	79/246 (32.1%)
Palliative RT Addressed	95/246 (38.6%)
CNS RT Addressed	120/246 (48.8%)

Table 3. Frequency and type of specification regarding peri-trial radiotherapy

Characteristic	Value
RT as a Concurrent Therapy Addressed	58/316 (18.4%)
Concurrent RT Allowed	47/58 (81.0%)
Washout Specified	21/58 (36.2%)
Palliative RT Addressed	47/58 (81.0%)
CNS RT Addressed	9/58 (15.5%)

DISCUSSION & CONCLUSION

Although the use of both NSTs and RT for the treatment of advanced NSCLC is common, there are notable gaps in the guidance and reporting of pre- and peri-trial RT. Recent published clinical trials, as well as those actively accruing, do not optimally provide guidance on the concurrent delivery of RT within the context of study drugs. Future prospective NST trials would benefit from more consistent guidance with respect to pre- and peri-trial RT, whether for palliation or ablative intent.