Predictors of Pneumonitis in Locally Advanced Non-Small Cell Lung Cancer Patients Treated on the Pacific Regimen (1175P)

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BACKGROUND

- Treatment-related pneumonitis is a significant concern in locally advanced non-small cell lung cancer (NSCLC) patients receiving definitive chemoradiation (CRT)
- Adjuvant durvalumab following CRT is the standard of care[1]
- Predictors of pneumonitis in the Pacific era have yet to be fully elucidated

OBJECTIVES

- In this large, single institution retrospective analysis, we aimed to:
  - Describe treatment characteristics in patients treated on the Pacific regimen
  - Evaluate incidence of grade 2+ pneumonitis
  - Analyze factors associated with grade 2+ pneumonitis

METHODS

INCLUSION CRITERIA

- Biopsy-proven NSCLC
- Receipt of definitive concurrent CRT
- Receipt of ≥1 cycle adjuvant durvalumab
- Prior lung surgery, induction and consolidation chemotherapy allowed
- ≥3 months follow-up

PNEUMONITIS DEFINITION

1. Pulmonary symptoms requiring prolonged steroid taper, oxygen dependence, and/or hospital admission

   AND

2. Radiographic findings consistent with pneumonitis

- Grade 2+ events were included, per Common Terminology Criteria for Adverse Events v5.0[2]
- Pneumonitis due to RT and/or immunotherapy were included
- RT dosimetric factors were extracted from the Varian ARIA® treatment planning system

RESULTS

Table 1: Baseline and treatment characteristics

	N = 150 (%)
Median FU (mo)	15 (IQR 7-22)
ECOG Score	
0	57 (38.0)
1	73 (48.7)
2	20 (13.3)
Histology	
Squamous cell	74 (49.3)
Adenocarcinoma	70 (46.7)
Other	6 (4.0)
Group Stage	
I	7 (4.7)
II	10 (6.7)
III	132 (88.0)
IV	1 (0.7)
Chemo	
Carbo/taxol	125 (83.3)
Cis/etop	16 (10.7)
Other	9 (6.0)
RT Dose (Gy)	
<60	2 (1.3)
60	143 (95.3)
>60	5 (3.3)
Durva Cycles	12 (IQR 4-22)

- 36 pneumonitis events
  - 11 grade 3, 2 grade 5
  - 1-year risk: 25.7%
- OS at 1- and 3-years 88.7% and 55.5%, respectively

Table 2: Significant predictors of pneumonitis

UNIVARIATE	HR
Durva cycles	0.92
Total lung	
Volume	0.68
Mean dose	2.66
Ipsilateral lung	
Volume	0.51
Mean dose	1.71
V5Gy (%)	1.24
V10Gy (%)	1.26
V10Gy (cc)	9.85
V20Gy (%)	1.28
V40Gy (%)	1.30
Contralateral lung	
Volume	0.52
Mean dose	2.42
V40Gy (%)	2.34
MULTIVARIATE	**HR**
Durva cycles	0.92
Contralateral lung	
Mean dose	4.75

CONCLUSIONS

- We report a risk of grade 2+ pneumonitis higher than that seen on RTOG 0617[3] and comparable to the Pacific study[1]
- Multiple lung dosimetric factors were predictive
- Group stage, total lung V20Gy, proton therapy, high dose durvalumab, and lymphopenia were not predictive

REFERENCES

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Conflicts of Interest: None

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