Purpose/Objectives

- The correlation between subacute pulmonary function test (PFT) decline and Common Terminology for Adverse Events (CTCAE) toxicity grade is not well characterized.
- The relationship between subacute PFT decline and long term PFT decline is unknown.
- In this report, we determine predictors of CTCAE pulmonary toxicity including subacute PFT decline and correlate subacute PFT change with long term PFT decline.

Materials/Methods

- Between 05/2008 and 10/2015, lung cancer patients treated with definitive-intent IMRT with baseline and serial post-radiation pulmonary function tests (PFTs) were identified.
- Baseline patient characteristics, treatment details, and subacute and late toxicities were recorded.
- Post-treatment PFTs were normalized by patient to baseline PFTs and the relative declines were reported in < 6 month and >12 month time intervals, which were the time intervals representative of the subacute (pneumonitis) and chronic (fibrotic) settings, respectively.
- Univariate and multivariate modeling was used to determine predictors of CTCAE grade ≥ 2 RP and to correlate subacute PFT change with long term PFT decline.

Results

- Between 05/2008 and 10/2015, lung cancer patients treated with definitive-intent IMRT with baseline and serial post-radiation pulmonary function tests (PFTs) were identified.
- Baseline patient characteristics, treatment details, and subacute and late toxicities were recorded.
- Post-treatment PFTs were normalized by patient to baseline PFTs and the relative declines were reported in < 6 month and >12 month time intervals, which were the time intervals representative of the subacute (pneumonitis) and chronic (fibrotic) settings, respectively.
- Univariate and multivariate modeling was used to determine predictors of CTCAE grade ≥ 2 RP and to correlate subacute PFT change with long term PFT decline.

Conclusions

- Subacute PFT decline was associated with CTCAE grade ≥ 2 RP.
- An additional predictor of RP was middle lobe tumors while African American race was protective.
- Subacute PFT decline is an independent predictor for sustained PFT decline greater than 12 months following therapy.
- Additional predictors of late DLOCO decline were middle and lower lobe tumors.