Post-Operative Radiotherapy (PORT) is Associated with Better Survival in Non-Small Cell Lung Cancer with Involved N2 Lymph Nodes: Results of an Analysis of the National Cancer Data Base

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Background

- Use of postoperative radiotherapy (PORT) for patients with resected non-small cell lung cancer (NSCLC) remains controversial

- Some limited data indicating potential benefit of PORT for patients with spread of disease to mediastinal lymph nodes (pN2)

- Existing studies suffer from use of out-of-date radiotherapy equipment/techniques, incomplete data about chemotherapy (considered standard of care for these patients)

- Purpose of this study: analyze effect of PORT for patients with involved mediastinal nodes in more modern setting

- Modern radiation therapy, documented use of chemotherapy
Methods

• National Cancer Data Base (NCDB): Joint venture of the American College of Surgeons, Commission on Cancer, American Cancer Society

• Captures ~70% of new diagnoses of cancer in US

• More detailed treatment information that other large national databases (e.g., SEER)

• Inclusion criteria: pN2, negative margins, treatment with chemotherapy, diagnosed between 2004-2006

• Exclusion criteria: patients treated with old equipment (e.g., cobalt-60), non-beam radiation, insufficient/excessive radiation doses, incomplete information
Results

- 2115 patients identified (918 received PORT, 1197 did not)

- 81% treated with adjuvant chemotherapy, 9% neoadjuvant, 9% sequence unknown

- Median survival longer for those treated with PORT: 42 months vs. 38 months, p=0.048

- 5 year survival higher for those treated with PORT: 39.8% vs. 34.7%

- No interaction seen between effect of PORT and number of involved lymph nodes (p=.615)
Conclusions

• PORT appears to be associated with improved survival for patients with pN2 nodes

• Additive benefit beyond effect of chemotherapy

• PORT beneficial regardless of number of nodes involved

• Retrospective study, needs validation in prospective trial

• LungART: randomized trial evaluating modern PORT underway in Europe