2014 CHICAGO
MULTIDISCIPLINARY SYMPOSIUM in
THORACIC ONCOLOGY
October 30-November 1, 2014
Chicago Marriott Downtown Magnificent Mile | Chicago

WELCOME

CO-SPONSORED BY:

ASCO
ASTRO
IASLC
THE UNIVERSITY OF CHICAGO
MEDICINE & BIOLOGICAL SCIENCES
2014 Chicago Multidisciplinary Symposium in Thoracic Oncology

“Advances in Radiation Therapy and Targeted Therapy” News Briefing

Moderator: Stephen M. Hahn, MD, FASTRO

Friday, October 31, 2014
7:00 a.m. CT
Molecular Profiling in Small Cell Lung Cancer and Lung Neuroendocrine Tumors

Rebecca Feldman\textsuperscript{1}, Igor Astsaturov\textsuperscript{2}, Sherri Millis\textsuperscript{1}, Deepa S. Subramaniam\textsuperscript{3}, Stephen V. Liu\textsuperscript{3}

\textsuperscript{1}Caris Life Sciences, \textsuperscript{2}Fox Chase Cancer Center, \textsuperscript{3}Lombardi Comprehensive Cancer Center, MedStar Georgetown University Hospital
Molecular Profiling and Lung Cancer

• Lung cancer remains the leading cause of cancer related mortality in the US
  – Small cell lung cancer is an aggressive subset
    • Accounts for 13% of all cases
    • Few advances over the past 30 years

• Advances in non-small cell lung cancer are primarily based on molecular profiling
  – Paradigm shift based on classification
Molecular Profiling and Lung Cancer

- Molecular testing now standard in subsets of NSCLC and dictates therapy
Methods

• Molecular profiling for SCLC has not identified any consistent targets
• Several commercial assays have emerged
  • Analysis of gene copy number, protein expression and DNA sequencing for practicing physicians
• Caris Life Sciences platform
  • We analyzed all pulmonary neuroendocrine samples submitted for analysis from 2009-2014
Results

- Analysis included 607 specimens
  - 375 SCLC, 151 large cell, 81 carcinoid
Conclusions

• Although the appearance may be similar, the DNA changes among samples are very different
  – These differences should be embraced and may hold the key for treatment
  – Alterations in BRAF, EGFR, HER2 and ALK were seen (rarely) in these neuroendocrine samples

• Additional work is needed for discovery of new targets and validation of existing targets
WELCOME

CO-SPONSORED BY:

ASCO
ASTRO.
IASLC
THE UNIVERSITY OF CHICAGO MEDICINE & BIOLOGICAL SCIENCES
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

Mikell, John L.1,6*, Gillespie, Theresa W.2,3,6, Hall, William A.1,6, Nickleach, Dana C.4,6, Liu, Yuan4,6, Lipscomb, Joseph5,6, Ramalingam, Suresh S.4,6, Rajpara, Raj S.1,6, Force, Seth D.3,6, Fernandez, Felix G.3,6, Owonikoko, Taofeek K.2,6, Pillai, Rathi N.2,6, Khuri, Fadlo R.2,6, Curran, Walter J.1,6, and Higgins, Kristin A.1,6

Departments of 1Radiation Oncology, 2Hematology and Oncology, 3Surgery, and 4Biostatistics and Bioinformatics Shared Resource, 5Rollins School of Public Health, and the 6Winship Cancer Institute, Emory University, Atlanta, Georgia.
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
A Decade of “50 in 5”: Maturing SBRT Outcomes For Medically Inoperable Early Stage Lung Cancer At Cleveland Clinic Over 10 Years

Cleveland Clinic, Cleveland, Ohio
Background

• Lung stereotactic body radiotherapy (SBRT) has emerged as the standard of care for early stage, medically inoperable non-small cell lung cancer (NSCLC).
  – Basis: Retrospective and prospective data show its excellent local control and cancer-specific survival with minimal acute toxicities in this fragile population.
• At Cleveland Clinic, Lung SBRT was initiated in 2003.
• Given a decade of experience, we wished to further characterize our outcomes (early and late) for patients treated with this approach.
Methods

• SBRT delivery
  – Novalis/BrainLAB platform
  – Bodyfix immobilization
  – Tumor motion controlled by abdominal compression
  – Image guidance during delivery by Exactrac
  – All pts treated with 50 Gy in 5 fractions between 10/1/2003 and 12/31/2012 to provide a minimum of 1 year follow up.
Results

• 340 lesions treated in 300 patients, of which 15% had multiple treatments.

• Median follow up for survival was 17.4 months (range 0.3-112.2) and 17.8 months for living patients (range 2.1-96.7) with 46.7% of patients alive at analysis.

• Any grade toxicity was reported in 13.0% of patients, with no grades 4 or 5, and with chest wall symptoms preponderant (59.5%).

• For central versus non-central lesions,
  – Total all grade toxicity: 15.5% vs. 11.7%
  – Proportion of the total rate by location:
    • chest wall toxicity 37.5% vs. 73.9%
    • Pneumonitis 37.5% vs. 26.1%
Conclusions

• A decade’s experience with Lung SBRT using 50 Gy in 5 fractions reveals
  – **Excellent local control**, which tumor size may affect
  – The dominant pattern of failure is **distant**.
  – **Co-morbidity** drives overall mortality, with favorable cancer-specific survival.
  – This schedule is effective independent of tumor **location** in the lung, i.e, no difference between “peripheral” and “central” tumors
  – Overall **minimal rates of high grade toxicities** that are location-dependent.
Questions?

Contact ASTRO’s Press Office
In Chicago, October 30-31, 2014:
312-595-3150
Via email: press@astro.org

The online press kit:
www.astro.org/ThoracicPress