RTOG 0214: A Phase III Comparison of Prophylactic Cranial Irradiation versus Observation in Patients with Locally Advanced Non-small Cell Lung Cancer: 5 Year Update

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Background

• 40-50% of patients develop brain metastases after treatment for lung cancer
• Studies in the 1980s showed that PCI decreases brain failures but did not improve survival
• Advances in radiation, addition of surgery improved local control
• Chemotherapy decreases failures outside the chest but does not enter the brain tissue
• The brain is undertreated with standard therapy
Study Question

• Do patients treated with PCI live longer?
• Is low dose brain radiation safe?
No progression after curative therapy for Stage IIIA/B NSCLC

Stage
1. IIIA
2. IIIB

Histology
1. SCCa
2. Non-SCCa

Treatment
1. Surgery
2. No Surgery

PCI 30Gy at 2Gy/Fx

OBSERVATION
Results

• Only 358 patients were enrolled
• Not enough patients to answer the primary question
• Survival not different
• Brain metastases were lower with PCI
• Patients with out PCI were twice as likely to fail in the brain only
CNS Metastasis

PCI
Observation

Fail  Total
PCI  19  163
Observation  39  177

HR = 2.05 (1.19, 3.55)
p = 0.009

PCI
Control

5 yr BM
17.3%
26.8%