C-20

Impact of Adjuvant Chemotherapy in Non-Metastatic Node Positive Bronchial Neuroendocrine Tumors

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BACKGROUND: Bronchial neuroendocrine tumors (BNET) are frequently indolent neoplasms. Lobectomy is usually performed for patients with non-metastatic disease, and the role of adjuvant chemotherapy for patients with node positive disease (N+) is debated.

METHODS: Utilizing the National Cancer Database from 2004-2012, we identified 1682 patients with N+ non-metastatic BNET. All patients underwent primary resection, had pathologically confirmed diagnosis, complete follow up data, and were alive >30 days following surgery. Overall survival (OS) was analyzed utilizing Kaplan-Meier curves, and log-rank tests were used to compare 2 groups of patients that differed based on receiving or not adjuvant chemotherapy. Subgroup analyses were performed based on histologic subtypes. Cox proportional hazards was performed to control for age, sex, race, grade, surgical margins, type of surgery, year of diagnosis, Charlson/Deyo Score, insurance, facility type, and location.

RESULTS: 651 patients with typical carcinoid (CT), 239 atypical carcinoid (ACT), 426 large cell neuroendocrine carcinoma (LCNEC), and 366 neuroendocrine carcinoma (NEC) were analyzed. 6% of patients with CT received ADJ-CT, compared to 40% ACT, 42% NEC, and 70% LCNEC. In a multivariate analysis, only increasing age was associated with worse prognosis across all histologic

subtypes, and non-academic facility for CT, and male sex for NEC. ADJ-CT was not associated with OS benefit for patients with ATC (Adjusted HR 1.1; 95% CI 0.68-1.78; p:0.6), was associated with inferior OS in CT (HR: 3.8 (95% CI 1.9-7.0; p=0.004) and NEC (HR: 2.15; 95% CI 1.5-3.0; p<0.001), and may provide benefit for LCNEC (HR: 0.67; 95% CI 0.5-0.9; p=0.009).

CONCLUSION: Adjuvant chemotherapy was not associated with survival benefit for patients with node positive and non-metastatic BNET except for LCNEC, and may be harmful for patients with CT and NEC.