



## **John B. Amos Cancer Center CoC STANDARD 4.6 -2015**

The 2015 monitoring compliance and evidenced based guidelines are based upon site specific data taken from 2012-2013. The study reviewed the outcome of patients with resected lung cancer who received adjuvant chemotherapy for pathologic stages I, II and III. The data includes patients who received a diagnostic biopsy, surgical resection, chemotherapy and when indicated, radiation therapy.

In 2012, four/five patients who were candidates for adjuvant chemotherapy received it. One patient had a prior history of laryngeal carcinoma in 2004, and refused adjuvant cytoablative therapy. He had an R0 resection for a Stage 2a squamous cell carcinoma of the lung and early in his course of radiation therapy developed ipsilateral chest wall and hepatic metastatic disease.

One patient received a single course of Gemcitabine Cisplatin complicated by the following: sepsis, neutropenia, necrotizing right lung pneumonia with pneumothorax, refractory hypotension. She presented approximately two weeks after her first course of chemotherapy with hemoptysis, hypoxemia and a tension right pneumothorax. A fiberoptic bronchoscopy disclosed an intact right upper lobe stump, although bloody secretions from the right middle lobe and right lower lobe. She had a rapidly declining course over 24 hours although intubated at presentation in the ER, her condition worsened and she was elected to be made a DNR by her family. The patient had other significant comorbidities, although clearly had complications related to chemotherapy. She had underlying significant COPD, as well as necrotic dentition. It is unclear whether she became septic from an oropharyngeal source or whether she had developed pneumonia in and around the time of reception of chemotherapy.

Of the five patients evaluated from 2012, three have expired and two are alive with NED.

In 2013, there were six patients identified that received surgical resection followed by chemotherapy. Adjuvant forms of chemotherapy consisted of Navelbine/Cisplatin, Taxol/Carboplatin, Olympus/Cisplatin, Gemcitabine/Cisplatin. In addition, there were two patients with small cell carcinoma who were treated in the adjuvant setting. One with stage 1 resected disease, the other with incidentally identified stage 3a small cell carcinoma who received combined modality therapy with VP16 and Cisplatin, as well as XRT concomitantly. One of the two patients that was offered adjuvant therapy for small cell carcinoma refused treatment.

Overall, there are eleven cases that are reviewed. Of the eleven, three had small cell carcinoma.

Of the eleven patients six are alive, four are dead of disease and one died in the setting of neutropenia with other complicating factors (see above). The six patients living are NED.

## **DISCUSSION**

The benefits of adjuvant chemotherapy are well established for resected non-small cell carcinoma. The IALT trial showed an overall improvement of 5% in patients who received adjuvant Cisplatin based chemotherapy. At 7½ years of follow-up, however, there were more deaths in patients who received chemotherapy. Another trial (NCIC/JBR.10) showed an improvement in overall survival in patients who received Navelbine/Cisplatin versus observation by 15%. In this study there was not an increased likelihood of late deaths in patients who received chemotherapy. The ANITA trial treated 840 patients with stage 1d, 2-3a non-small cell lung cancer with Navelbine/Cisplatin that showed an overall survival of 8.6% at five years. There were seven toxic deaths. A meta-analysis confirmed an overall survival benefit of 5.4% in patients who received a variety of chemotherapy regimens.

## **CONCLUSIONS**

Between 2012 and 2013, eleven patients received chemotherapy following surgical resection for lung cancer. The majority of those patients have non-small cell carcinoma of the lung. Three of the eleven have small cell carcinoma, two of which were treated with adjuvant chemotherapy alone or adjuvant chemotherapy and radiation.

The chemotherapy regimens used were consistent with the NCCN Guidelines for the appropriate adjuvant treatment for resected non-small carcinoma of the lung.

## **RECOMMENDATIONS FOR IMPROVEMENT**

There was one associated death in the above cohort in a patient that received Gemcitabine/Cisplatin for resected T2-N1 lung cancer. She was 62 and had other comorbidities, principally significant COPD. Although neutropenia was implicated in her death, she developed very quickly a necrotizing pneumonia, profound hypoxemia, and a tension right pneumothorax which complicated her death. It is important for clinicians when making a recommendation for adjuvant treatment to recognize a risk of death, just less than 1% and to bring this to the attention of patients in discussion of the risks and benefits of adjuvant chemotherapy.

In addition, patients should be provided the opportunity to enroll in the ongoing Alliance trial A151216 (Alchemist). This study affords patients with clinical stage 1b, 2 or 3a non-squamous cell carcinoma of the lung who have not received Neoadjuvant chemotherapy or have been treated with targeted treatments to be offered in addition to cytoablative chemotherapy one year of targeted therapy should they harbor an appropriate EGFR or ALK alteration. This study is currently available at JBACC through its NCORP affiliation.

Andrew W. Pippas

10/09/2015