

Primary Pulmonary Carcinoid Tumors: A Single Institution Retrospective Review: Topic: Medical Oncology

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Published In/Presented At

Adediran, S. Friedman, E. L., Nair, R. (2017, September 14-16). PS02.27 *Primary Pulmonary Carcinoid Tumors: A Single Institution Retrospective Review*. Poster Presented at: The 2017 Chicago Multidisciplinary Symposium in Thoracic Oncology, Chicago, Illinois.

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Primary Pulmonary Carcinoid Tumors: A Single Institution Retrospective Review

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BACKGROUND

Pulmonary carcinoid tumors account for 1–2% of all invasive lung malignancies. They generally occur between the fourth and the sixth decade of life. Most pulmonary carcinoid tumors are well differentiated, have < 2 mitoses/10 HPF and < 3% Ki67 index (typical carcinoid). A small percentage are aggressive, have 2-20 mitoses/10 HPF and 3-20% Ki67 index (atypical carcinoid). Because of their rarity, there are very few large studies on pulmonary carcinoid and most of them are retrospective in nature. We present a retrospective analysis of the clinico-pathologic features of patients diagnosed with pulmonary carcinoids tumor at our institution over a ten year period.

| Patient Characteristics | |
|-------------------------|-------------------------|
| Characteristics | Frequency (%) |
| Gender | |
| Male | 69% |
| Female | 31% |
| Median age | 63.5 years (IQR 52, 73) |
| Tumor Types | |
| Typical carcinoid | 90% |
| Atypical carcinoid | 10% |
| Tobacco use | |
| Smoke(d) | 44% |
| Never smoked | 56% |

| Stage of Cancer at Time of Diagnosis Based on TNM Staging Criteria | |
|--|---------------|
| Stage | Frequency (%) |
| I | 75 |
| II | 5 |
| III | 4 |
| IV | 6 |
| Multifocal disease | 10 |

| Presenting Symptoms | |
|---------------------|---------------|
| Symptoms | Frequency (%) |
| Cough | 22 |
| Dyspnea | 17 |
| Chest pain | 11 |
| Pneumonia | 9 |
| Hemoptysis | 6 |
| Incidental finding | 56 |

| Treatment Modalities | |
|--|---------------|
| 90% of Patients Underwent Definitive Invasive Intervention | |
| Intervention/Extent of Resection | Frequency (%) |
| Lobectomy | 62 |
| Wedge resection | 20 |
| Segmental resection | 4 |
| Pneumonectomy | 4 |
| Endobronchial ablation | 2 |

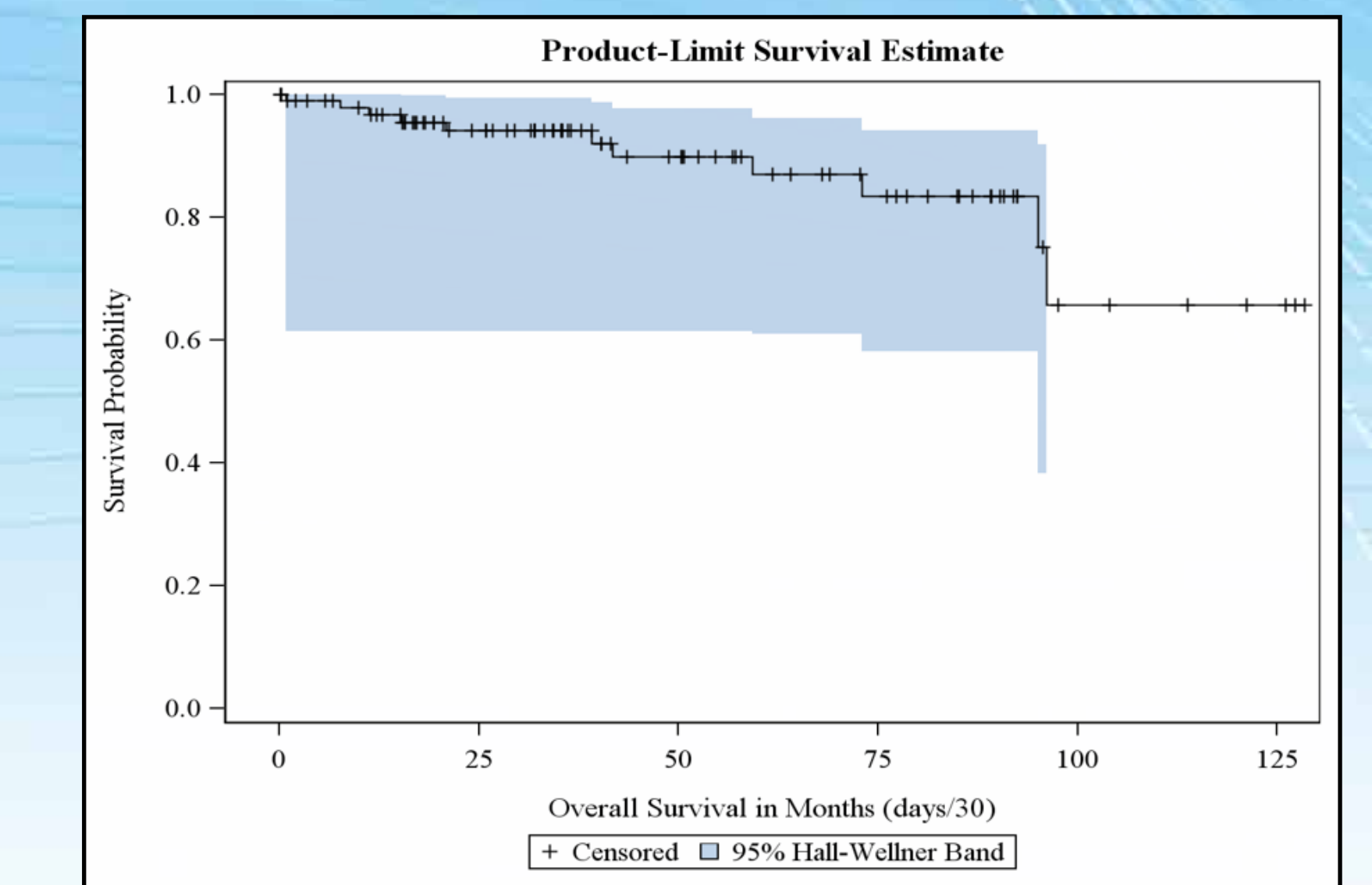
RESULTS

| Treatments of the 6 Patients with Stage IV Disease | | | | | |
|--|-------------------|--------------------------|-------------------------------|--|---|
| Patients | Type of Carcinoid | Site of Metastases | Surgical Intervention | Chemotherapy | Outcome |
| Patient A | Typical | Bilateral lungs | Endobronchial ablation | None | Indolent disease, lived >5 years from diagnosis |
| Patient B | Typical | Bilateral lungs | None | None | Indolent disease, Alive >1 yr after diagnosis |
| Patient C | Atypical | Bone | None | 6 cycles of cisplatin and etoposide followed by 6300 cGy RT to residual tumor in the Mediastinum | Alive 4 years after treatment |
| Patient D | Typical | Bone | None | Unknown agents followed by palliation RT to the bone | Died <2 years after diagnosis |
| Patient E | Atypical | Liver, Lung, Bone, Brain | None | 1st line: cisplatin+etoposide. PCI 2nd: carboplatin+paclitaxel, 3rd: 1 cycle of gemcitabine GK | Died 15 months after diagnosis |
| Patient F | Typical | Lungs | Wedge resection of main tumor | None | Alive 3 years after diagnosis |

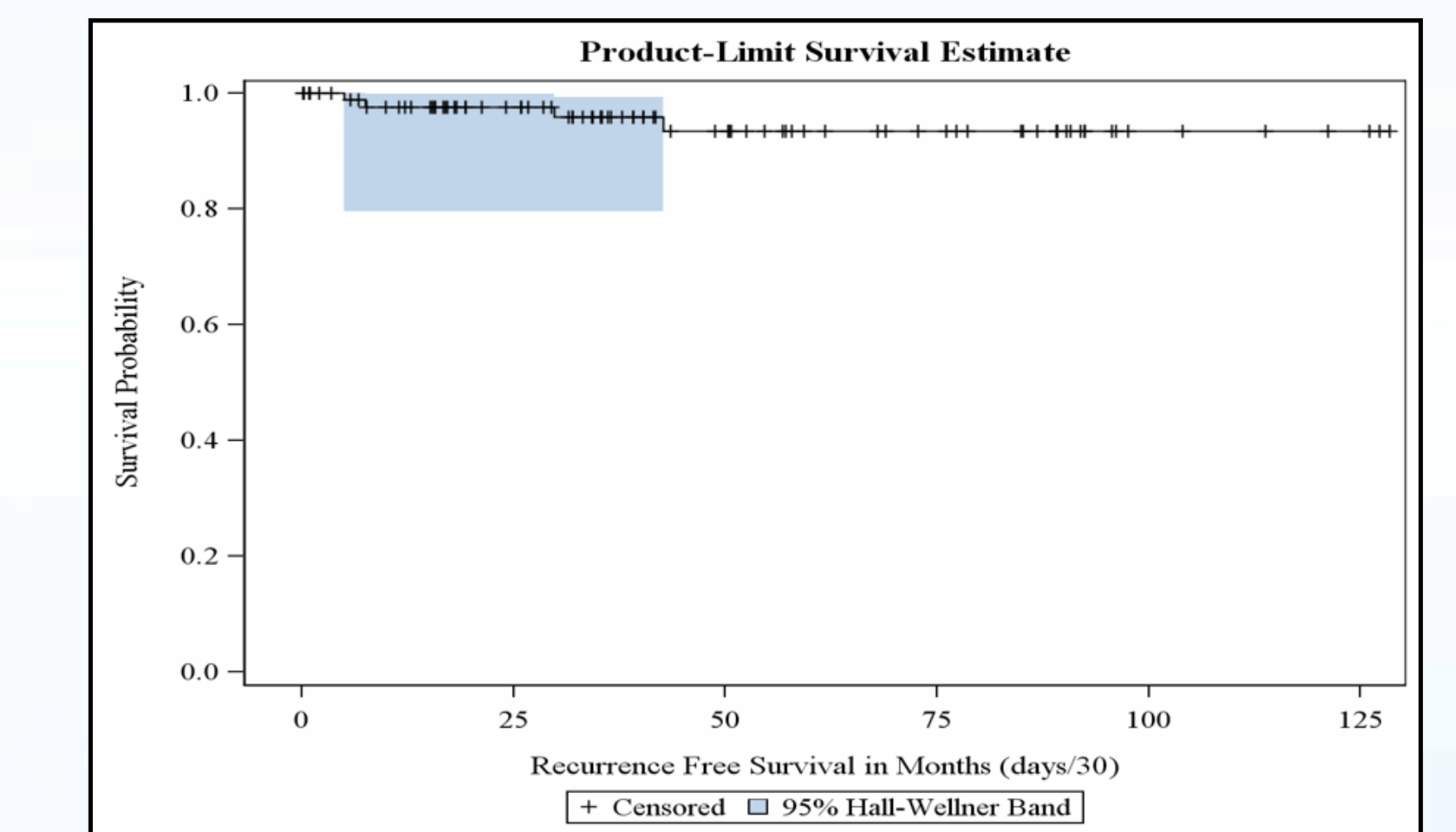
Two other patients received chemotherapy: one was misdiagnosed small cell lung carcinoma and the other was stage IIIA pulmonary carcinoid tumor.

Survival Results

11 of 96 patients died during the study period; 9 of them of causes other than pulmonary carcinoid. The two patients that died of pulmonary carcinoid both had atypical histology.



4 patients had disease recurrence 2 of whom died during the study period.



METHODS

After approval by the institutional review board, we identify all patients with pulmonary carcinoid tumors diagnosed or treated at the Lehigh Valley Hospital between 2005 and 2015. We performed a retrospective review of the records of all biopsy-confirmed patients with pulmonary carcinoid tumors. Collected data included clinical presentation, demographics, pathology, treatment modalities, pattern of metastases and recurrence. All analyses were conducted using SAS version 9.3. Kaplan-Meier method was used for overall survival calculation.

CONCLUSIONS

This study though retrospective in nature nevertheless add to the clinico-pathologic features known of pulmonary carcinoid tumor. It is more common in women and occur mostly in the 5th to 6th decades of life. While most tumors are incidental findings on imaging, the common presenting symptoms are cough, dyspnea, chest pain, pneumonia and hemoptysis. Surgery is the mainstay of treatment. Chemotherapy and radiation therapy are rarely used except in the metastatic setting. Keeping with the indolent nature of the disease, most patients that died during the study period died of causes other than pulmonary carcinoid, and disease recurrence was rare.

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