

Economic Burden of Illness of Malignant Lung Neuroendocrine Tumors (NET)

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Background: Lung NETs, including well- and poorly-differentiated, comprise 1-2% of lung cancers and 20-30% of NETs. The objective of this study is to describe the economic burden of lung NETs.

Methods: This was a cohort study using analyses of 2 claims databases to describe health care utilization and costs for lung NET. Patients were adults with ≥ 1 inpatient or ≥ 2 outpatient claims for lung NET and a claim for malignant NET or liver malignancy in 2014. Patients not continuously enrolled in 2014 were excluded.

Results: 736 lung NET patients were identified. Mean (SD) age was 54.1 (8.1), 65.4% were female. 13.9% had a claim with a diagnosis codes for Carcinoid Syndrome (ICD-9-CM: 259.2). 13.0% (n=96) of patients had liver directed therapy (e.g., surgery, embolization) and 15.2% (n=112) systemic therapy. Among the 112 patients who received systemic therapy, 82.1% (n=92) used somatostatin analogs, 20.5% (n=23) cytotoxic chemotherapy, and 17.9% (n=20) targeted therapy. Overall, patients had a mean (SD) 21.1 (17.4) office visits, 37.1% had ≥ 1 ED visit, and 58.4% ≥ 1 hospitalization. Mean (SD) LOS was 9.2 (11.5) days among hospitalized patients. Annual costs were \$80,002, comprising \$7,068 in pharmacy and \$72,934 in medical costs (\$43,084 outpatient, \$28,867 inpatient, \$983 ED).

Conclusion: Mean annual cost for patients with malignant lung NET ($> \$80,000/\text{year}$) were double the national average of $\sim \$38,000$ among all cancers in the first year (Mariotti 2011). More than half of patients were admitted to the hospital, with mean stays of 9.2 days, leading to mean inpatient costs of almost \$30,000/year. Interventional treatments such as surgery and chemoembolization were common. One-third of patients received systemic therapy, most commonly with somatostatin analogs, but medication costs represent $< 10\%$ of the total. New developments in the treatment of lung NET may help reduce some costs associated with this disease.