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Real-world Analysis of Long-Term Treatment Patterns and Clinical Outcomes among Patients with Advanced Neuroendocrine Tumors of Lung Origin: A Multicenter Study

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BACKGROUND: This study aimed to report long-term, real-world treatment patterns and clinical outcomes among patients with advanced lung NET, based on data from four tertiary cancer centers (Dana-Farber, MD Anderson, Northwestern, and UCSF).

METHODS: Retrospective chart review was conducted for patients diagnosed with advanced lung NET (typical/atypical) at age ≥18 years and treated with somatostatin analogs (SSAs), targeted therapy (TT), cytotoxic chemotherapy (CC), liver-directed therapy (LDT), peptide-receptor radiotherapy, or interferon between 7/2011-12/2014. Eligible patients were followed from advanced NET diagnosis date (earliest recorded diagnosis: 2/2004) to end of follow-up/death (latest recorded date: 7/2017). Treatment discontinuation and overall survival (OS) were estimated using Kaplan-Meier analysis.

RESULTS: 83 (19 functional) lung NET patients were included with the mean age of 59.7 years at advanced NET diagnosis. Median follow-up time after diagnosis was 49.1 (range: 4.0-155.4) months. As first-line, 61.7% of patients were treated with SSAs (octreotide only observed) monotherapy or combination therapy, 18.5% with CC alone, and 19.8% with external-beam radiotherapy (EBRT), LDT, or TT. Of 60 patients with second-line, 58.3% were treated with SSAs: 55.0% with octreotide, 3.3% with lanreotide (90-120mg/4 weeks), 16.7% with CC, and 25.0% with TT/LDT/EBRT. 84.6% of octreotide doses given at initiation were ≤30mg/4 weeks. In first-line, the median time to treatment discontinuation was 43.3 months for SSA and 3.6 months for CC. Median OS was 66.4 months, 81.5 months, and 50.2 months for all patients, and for patients treated with first-line SSA and CC, respectively.

CONCLUSION: SSAs, specifically long-acting octreotide, and CC appear to be used widely in treating advanced lung NET. Patients on average were treated with first-line SSA for 43.3 months with median OS of 81.5 months. Further research is needed to study the effect of recently-approved treatments including lanreotide, everolimus, and PRRT, on treatment patterns in lung NET since 2015.