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

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Background: NETs comprise a broad set of tumors that are rare and slow-growing. Almost two-thirds of NETs arise in the gastrointestinal (GI) tract. The objective of this study is to describe the economic burden of GI-NET patients.

Methods: This cohort study used 2 claims databases to describe healthcare utilization and costs of GI-NET patients. Adults with ≥1 inpatient or ≥2 outpatient claims for GI-NET and with a claim for malignant NET or liver malignancy in 2014 were included. Patients not continuously enrolled in 2014 were excluded.

Results: 2,968 GI-NET patients were identified. Mean (SD) age was 52.7 (9.1), 55.0% were female, 25.2% had a claim with diagnosis codes for carcinoid syndrome (ICD-9-CM: 259.2). 33.0% (n=978) of patients received systemic therapy and 8.0% (n=237) liver directed therapy. Among the 978 patients who received systemic therapy, 82.4% (n=806) used somatostatin analogs, 23.5% (n=230) cytotoxic chemotherapy, and 8.8% (n=86) targeted therapy. Overall, patients had mean (SD) 16.6 (14.2) office visits, 33.5% had ≥1 ED visit, and 40.5% ≥1 hospitalization. Mean (SD) LOS was 10.7 (17.4) days among hospitalized patients. Annual costs were $70,179, comprising $6,967 pharmacy and $63,212 medical ($41,425 outpatient, $21,088 inpatient, $698 ED).

Conclusion: Resource use and costs for treatment of malignant GI-NET patients were high. Mean annual cost was >$70,000 compared to a national average of ~$38,000 among all cancers in the first year (Mariotti 2011). While 40% of patients were admitted to the hospital, the majority of costs were from the outpatient setting. One-third of patients received systemic therapy, most commonly somatostatin analogs, but medication costs represented only <10% of total. About 24% of patients were treated with cytotoxic chemotherapy, despite evidence of suboptimal response rates. The availability of more effective therapies providing better outcomes and management of this disease may help to mitigate some of these resource use and/or cost burdens.

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