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Trends and In-Hospital Outcomes of Neuroendocrine Tumors (NETs): A National Perspective

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BACKGROUND: Limited evidence is available on the trends and in-hospital outcomes among patients with various NETs. We measured the trends of hospitalization, demographics, diagnosis at presentation and in-hospital outcomes in patients with NETs.

METHODS: We used the National Inpatient Sample (NIS) dataset, a nationally representative weighted sample of all US hospital discharges, from 2008 to 2014 to identify the diagnosis of NETs (ICD-9 code: 209.x). Categorical and continuous variables were tested using Chi-square test and Student t-test.

RESULTS: 38,686 patients with NETs were identified between 2008 to 2014. The NETs subtypes included: Malignant small intestinal carcinoid tumors (11.5%); appendix, large intestine, and rectum (7%); other and unspecified sites (38.7%); malignant poorly differentiated neuroendocrine tumors (12.6%); Benign carcinoid tumors of the small intestine (4%); appendix, large intestine, and rectum (3.7%) and other and unspecified sites (13.8%). 179 of the 38,686 (0.5%) of the patients had carcinoid syndrome on primary presentation. We found a mean age of 62.88 years, female predominance (51.9%) and predominantly white ethnicity (75.70%) among the cohort. The mean length of stay and cost of hospitalization were found to be ~6.60 days and 18,300.90 USD respectively. Furthermore, the in-hospital mortality across all NETs was found to be 4.77%. In general, the trend of hospitalization for NETs generally increased from 2008 to 2010 but has remained relatively unchanged between 2010-2014.

CONCLUSION: Our study provides evidence that there is a significant cost and in-hospital mortality associated with this cohort of patients. Retrospective analysis, restriction to in-hospital data such as lack of information regarding procedures, use of coding to identify NETs, and variation in documentation practices, limit the ability to use this data. Despite this, the in-hospital outcomes of NETs, often understudied, provide an insight into the epidemiologic and financial burden of this disease.