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Real World Analysis of Misdiagnosis Among Patients with Neuroendocrine Tumors (NET)

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BACKGROUND: NET, which commonly affects the gastrointestinal tract but can occur anywhere, is often initially diagnosed as another condition. We analyzed the proportion of alternative diagnoses in patients with NET prior to diagnosis, compared with patients without NET.

METHODS: The IBM MarketScan administrative claims databases were used for this retrospective study. Adults with at least one inpatient or two outpatient claims with a NET diagnosis during 1/1/2015 - 12/31/2018 (earliest = index) comprised the NET cases. Non-NET controls included patients (matched 3:1 to cases on age/gender) without any cancer diagnoses (index = randomly assigned). Patients were followed for a five year look back period (pre-index). Conditions within systems for which NET is commonly misdiagnosed (gastrointestinal, respiratory, metabolic [i.e. liver disease], dermatologic) were measured pre-index (excluding the immediate 3-months). Proportion of conditions were compared between cases and matched controls using odds ratios (OR). Among NET patients, the proportion with a misdiagnosis of pancreatic adenocarcinoma prior to NET diagnosis was reported.

RESULTS: This analysis included 3,460 NET cases and 10,370 non-NET controls (mean age 61 years). NET cases had 2.1 higher odds with the 95% confidence interval (CI) 1.9 - 2.3 of a diagnosis of a gastrointestinal, respiratory, metabolic [i.e. liver disease], or dermatologic condition versus non-NET controls. Results were consistent for each category; gastrointestinal (OR 2.3 [CI 2.1-2.5]), respiratory (OR 1.7 [CI 1.5-1.8]), metabolic (OR 3.6 [CI 3.1-4.2]), dermatologic (OR 1.3 [CI 1.1-1.4]). Median time from earliest potential misdiagnosis to NET was 3.4 years. Among NET cases, 69 (2.0%) had a misdiagnosis of pancreatic adenocarcinoma.

CONCLUSION: Results suggest patients with NET have increased odds of conditions for which NET is commonly misdiagnosed compared with non-NET controls. This study provides evidence supporting need for accurate identification of NET.

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