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Predictive Factors of Carcinoid Syndrome (CS) Among Patients with Gastrointestinal Neuroendocrine Tumors (GI NETs)

***Beilei Cai*[1];** Michael S. Broder[2]; Eunice Chang[2]; Tingjian Yan[2]; David C. Metz[3]

[1]Novartis Pharmaceuticals Corporation; [2]Partnership for Health Analytic Research, LLC; [3]University of Pennsylvania Health System,

BACKGROUND: CS is associated with significant symptoms and decreased quality of life. Patients may experience delays in diagnosis of 5-7 years from symptom onset, as symptoms may be mistaken for other diseases. This study attempts to detect factors predictive of CS prior to diagnosis among GI NET patients.

METHODS: Using a US administrative claims database and case-control study design, patients (18 years and older) newly-diagnosed with GI NETs without CS (controls) were exactly matched to patients with CS (cases) based on NET diagnosis date (month, year) at a 3-to-1 ratio. For cases, study index date was the first CS diagnosis date. Controls were assigned to have the same index month and year as the matched cases. The most frequently observed conditions other than symptoms/diagnoses known to be associated with CS within 1 year prior to the index date were assessed. These conditions were entered into a forward-stepwise logistic regression model to derive predictive factors. Predictors were validated in another database.

RESULTS: In the development database, 1,004 GI NET patients were identified. 251 (25%) had CS and 753 (75%) were controls. In both databases, three factors prior to CS diagnosis were associated with higher CS risk, including liver disorder [odds ratio (95% CI): 3.38 (2.07-5.51)], enlarged lymph nodes [2.13 (1.10-4.11)], and abdominal mass [3.79 (1.87-7.69)].

CONCLUSION: This study suggests that patients diagnosed with CS are 2-4 times as likely to have a preexisting diagnosis of a liver disorder, enlarged lymph nodes, or abdominal mass compared to those without CS, within 1 year prior to CS diagnosis. Future studies using medical charts are warranted to validate findings. These findings may aid physicians in diagnosing CS patients earlier.