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The Clinical Impact of Serum Chromogranin-A in Patients with Gastroenteropancreatic Neuroendocrine Tumors (GEP-NETS).

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BACKGROUND: Chromogranin-A (CgA) has been used as a biomarker for diagnosis of neuroendocrine tumors (NETs). Its value in follow up remains debatable because it can be elevated in unrelated conditions. This study assessed the clinical impact of CgA on the follow up and progression of patients with well differentiated metastatic GEP-NETs.

METHODS: This is a retrospective analysis of patients with metastatic well differentiated GEP-NETs who were treated at University Hospitals Seidman Cancer Center. For every patient, baseline and follow up CgA values were obtained and were correlated with radilogical disease progression.

The probability of progression-free survival (PFS) defined from the date of diagnosis to the date of disease progression was estimated using Kaplan-Meier methods and the difference of PFS among groups was examined by log-rank. The effect of categorical covariates on PFS was estimated using univariate Cox model. The effect of baseline CgA on PFS were further evaluated using multivariable Cox models. All tests were two-sided and p-value ≤ 0.05 were considered statistically significant.

RESULTS: 91 patients (43% male) with metastatic GEP-NETs were identified. The median age was 61.3 (range: 31.5- 88.7) years. 56 patients had CgA levels available at both baseline and time of progression. In an univariate analysis, elevated baseline CgA was significantly predictive of worse PFS (HR = 2.63, 95% CI: 1.52 – 4.56, p = 0.0006). In a multivariable analysis after controlling the effects of cofounders, CgA was still significant in predicting PFS (HR = 2.61, 95% CI: 1.47 – 4.62, p = 0.001). At time of radiological progression, 71.5% (40/56) had rising CgA (>50% from baseline, median level 86 ng/ml), and 28.5% (16/56) had decreased CgA from baseline.

CONCLUSION: Patients with elevated baseline CgA levels had worse PFS in both univariate and multivariable analysis. Increased serum levels of CgA were significantly correlated with disease progression in metastatic GEP-NETs.

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