

C-62

Plasma Pancreastatin Levels Predict the Outcome of Surgical Cytoreduction in Neuroendocrine Tumors of the Small Bowel

Eugene A. Woltering¹; Brianne A. Voros¹; Ramcharan Thiagarajan¹; David T. Beyer¹; Robert A. Ramirez²; Gregg Mamikunian³; J. Philip Boudreaux¹

¹Louisiana State University Health Sciences Center; ²Ochsner Clinic Foundation; ³InterScience Institute

BACKGROUND: Small bowel neuroendocrine tumors (NETs) are rare and often indolent neoplasms. Pancreastatin (PST) has shown to be a reliable biomarker for small bowel NETs. Elevated PST levels have been shown to be associated with worse survival in small bowel NETs. Based on our experience, we hypothesized that elevated plasma PST following surgical cytoreduction predicts a poor prognosis in well-differentiated small bowel NETs.

METHODS: Data were analyzed from patients who underwent surgical cytoreduction for NETs of the small bowel, ileum, or jejunum. All patients received standard of care following surgical cytoreduction. Only patients who had serial preoperative PST (PreopPST) and postoperative PST (PostopPST) levels were included in this study (Normal <135 pg/ml, InterScience Institute, Inglewood, Calif). Patients were sorted into groups to assess the response of their PST level to surgery. Overall survival (OS) was calculated from date of surgery to date of death or end of study (December 31, 2017).

RESULTS: PreopPST and PostopPST levels were collected in 314 patients. Group 1 included 79 patients (25%) who had normal PreopPST and PostopPST levels. Group 2 included 87 patients (28%) with an elevated PreopPST level but a normal PostopPST level. Group 3 included 148 patients (47%) with either a

normal or elevated PreopPST level and an elevated PostopPST level despite surgical cytoreduction. Patients in Groups 1 and 2 had a significant survival advantage compared to patients in Group 3 ($P < 0.0001$). Kaplan-Meier 5-year and 10-year OS rates were as follows: Group 1 – 93% and 84%; Group 2 – 90% and 65%; and Group 3 – 59% and 34% (Table 1).

Conclusion: Patients with small bowel NETs who undergo surgical cytoreduction have high survival rates. Serial monitoring of plasma PST is useful in predicting long-term survival following surgical cytoreduction in and can be helpful to identify patients who have a poor prognosis.

Table 1:

Survival by PreopPST/PostopPST Group (N=314)

PreopPST/PostopPST Group	N	Mean OS (in months)	5-Year OS	10-Year OS
Group 1	79	125 ± 4	93%	84%
Group 2	87	117 ± 5	90%	65%
Group 3	148	78 ± 4	59%	34%

Abbreviations: PreopPST, Preoperative pancreastatin level; PostopPST, Postoperative pancreastatin level; SD, standard deviation; OS, overall survival