

## **A Single Fasting Plasma 5-HIAA Value Correlates with 24-Hour Urinary 5-HIAA Values and Other Biomarkers in Midgut Neuroendocrine Tumors (NETs)**

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**Background:** 5-hydroxyindoleacetic acid (5-HIAA) is used for the evaluation of neuroendocrine tumors (NETs), however the current 5-HIAA assay requires a twenty-four hour urine collection which is inconvenient.

**Methods:** We developed a gas chromatography-mass spectroscopy (GC-MS) based plasma 5-HIAA assay. We compared 24-hour urine 5-HIAA values with single fasting plasma 5-HIAA values in 115 mixed variety NET patients, a subset of 72 patients with only small bowel NETs, and another subset of 47 patients with small bowel NETs with liver metastasis. We also compared the information gained from urinary and plasma 5-HIAA values with other biomarkers of midgut NET activity in order to determine the plasma assay's clinical implications.

**Results:** In a group of 115 patients with all types of NETS, in a subgroup of 72 midgut NET patients and in another subgroup of 47 mid gut NETS with liver metastasis, the correlation between the urine and fasting plasma 5-HIAA values were highly statistically significant ( $<0.0001$ ,  $p<0.0001$ ,  $p<0.0001$ ). Comparison of the proportions of normal or abnormal urinary and plasma 5-HIAA values to the proportions of chromogranin, serotonin, neurokinin or pancreastatin values that were in the normal or abnormal range yielded essentially identical information.

**Conclusions:** Plasma fasting 5-HIAA values are proportional to urinary 5-HIAA values and provide similar clinical correlation with other biomarkers.