

New Pathological View of GEP-NET

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The neuroendocrine cell secretes biological active peptides or amines into the blood circulation thereby having the capacity to affect adjacent cells or distant organs throughout the body. The secreted peptides of neuroendocrine tumor can cause various non-specific symptoms and cause misdiagnosis to food allergy, menopause, irritable bowel syndrome, alcoholism, neurosis or anxiety attacks. Blood biomarker tests such as Neuron-Specific Enolase (NSE), Pancreatic Polypeptide (PP) and Chromogranin A (CgA) become useful in such situations to provide a risk profile for NETs. A tumor size of 3 mm in diameter will secrete detectable amounts of peptides in the blood stream for measurement. Of the three biomarkers, NSE provides very low specificity. PP provides a much higher specificity of 67%. There is limitation of use due to common false positives occurring in renal insufficiency, diabetes, inflammation or aging. CgA has high sensitivity and specificity. For patients with renal insufficiency, hypertension and on proton pump inhibitor treatment, false positives occur in CgA; the Chromogranin B biomarker is preferred as it is not affected by this. There is a role for biomarkers before diagnosis to confirm the suspicion of disease for further tests if needed. Should the biomarker results be positive, one can then justify sending patients for an MRI, CT, or Octreoscan to detect the location of the tumors. In addition, biomarkers can also be used to gauge treatment response in that early reduction in CgA with Everolimus has been shown to be associated with longer PFS in pancreatic NETs.