

Diagnosis of GEP-NET by Physicians

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Neuroendocrine neoplasm or tumors (NETs) defined as neoplasms arising from enterochromaffin cells, which occur most commonly in the digestive system but can occur in other parts of the body. The incidence and prevalence of NETs has increased approximately 500% over the past decades, which may be partially due to improved diagnosis by advance of imaging studies.

According to published literatures, near 60 % of NETs occurred in digestive system, most in rectum followed by jejunum/ileum, pancreas, stomach, colon, duodenum, cecum, appendix and liver. In the data of GI group of NTUH, most prevalent NETs are from pancreas follow by rectum and duodenum. The NETs have been reported with high malignant potential in jejunum/ileum, pancreas and colon. In past decades, the data showed that NETs are often advanced at the time of diagnosis with 1/4 cases of metastasis and 1/4 with regional spread. According to WHO 2012 classification with grade 1 to 3, NET differentiation and grading according to the Ki-67 index and mitotic count are important for decisions of treatment and prediction of prognosis. Grade 1 NETs are with good prognosis and grade 3, the worst.

The patients with NETs are mostly cared by oncologists and surgeons in the past. The NETs are usually large and even incurable. Surgery, debulking, chemotherapy, biotherapy and target therapy have been the choices of treatment. However, with the advance of endoscopic technologies, small NETs can be detected early and managed endoscopically. For diagnosis, chromogranin A (CgA) is used as a serum biomarker for diagnosis, prognosis prediction, follow-up of treatment effect and progression of diseases. We can use CgA to add diagnostic clue of NETs. However, in our experience, it is not diagnostic for rectal NETs.

Endoscopic diagnosis and treatment will be one of the important modalities for managements. In Data of our group, up to 71% cases are less than 2 cm in size & 73% are grade 1 NETs. For small NETs in digestive tracts such as esophagus, stomach,

duodenum, ampulla of Vater, rectum, endoscopic resection – EMR/ESD is performed in NTUH. Endoscopic ultrasound (EUS) is essential for non-functional and functional small NETs, especially in pancreas, such as insulinoma, VIPoma and gastrinoma. Surgery is the main treatment for NETs of extra-GI tract. But for small pancreatic NETs with G1 grading, EUS guided therapy may be considered. Recently, we used EUS-guided alcohol injection to ablation of small pancreas NETs.

In 21st century, with advance of endoscopy, more small and asymptomatic GEP-NETs will be detected and treated endoscopically, which prevent the invasive surgery and chemotherapy in late stage. Physicians are doorkeepers with an important role in management of GEP-NETs.