Monitoring carcinoid tumors and prognostic indicators

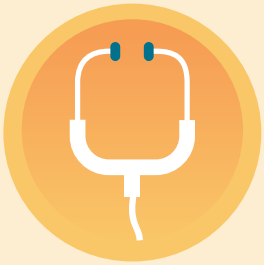
Regular monitoring is recommended in order to assess disease progression[1]

Once a patient has been diagnosed with a carcinoid tumor, regular monitoring becomes an integral part of his/her treatment plan, because even small tumors may have metastatic potential. Optimal monitoring includes regular imaging and continued biomarker testing.[1-3]

For patients with metastatic disease, the National Comprehensive Cancer Network® (NCCN®) recommends regular imaging every 3 to 12 months.[1]

GENERAL MONITORING FOR CARCINOID TUMORS[1]

Patient's medical history



Physical examination

Imaging, such as CT/MRI and somatostatin receptor-based imaging (ie, Octreoscan™ or gallium Ga 68 dotatate PET)

Biomarker testing, such as urinary 5-HIAA and plasma CgA levels

BIOMARKER TESTING FOR CARCINOID SYNDROME

Carcinoid syndrome is usually associated with distant metastatic carcinoid tumors. Therefore, it is imperative that patients with carcinoid tumors are routinely tested for carcinoid syndrome.[1,4,5]

Urinary 5-HIAA is the primary biomarker test used to identify carcinoid syndrome. It is used to identify serotonin overproduction caused by carcinoid tumors.[1]

CgA, chromogranin A; CT, computed tomography; 5-HIAA, 5-hydroxyindoleacetic acid; MRI, magnetic resonance imaging; PET, positron emission tomography.

Prognostic indicators

As you monitor disease progression, the following indicators may help determine whether the prognosis is positive or negative.

POSITIVE INDICATORS[4,6-8]	NEGATIVE INDICATORS[4,6,7,9]
Age <50 years	Hepatic or distant metastases
Low-grade tumor	Atypical histological features
Tumor size <3 cm	Presence of carcinoid syndrome
Well-differentiated tumor	Presence of second malignancy
Low levels of CgA	High levels of pancreastatin
Low levels of neurokinin A	Depth of tumor invasion

➔ Regular imaging and biomarker testing, as well as tracking of prognostic indicators, can help in your treatment of patients with carcinoid tumors.

Learn more about carcinoid syndrome

VISIT WWW.CARCINOID.COM/HCP–RESOURCES ▸

References: 1. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Neuroendocrine and Adrenal Tumors V.2.2018. © National Comprehensive Cancer Network, Inc 2018. All rights reserved. Accessed May 10, 2018. To view the most recent and complete version of the guideline, go online to NCCN.org. The National Comprehensive Cancer Network makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way. **2.** Soga J. Early-stage carcinoids of the gastrointestinal tract: an analysis of 1914 reported cases. *Cancer*. 2005;103(8):1587-1595. **3.** Rorstad O. Prognostic indicators for carcinoid neuroendocrine tumors of the gastrointestinal tract. *J Surg Oncol.* 2005;89(3):151-160. **4.** Jensen RT, Doherty GM. Carcinoid tumors and the carcinoid syndrome. In: DeVita VT Jr, Hellman S, Rosenberg SA, eds. *Cancer: Principles & Practice of Oncology.* 7th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2005:1559-1574. **5.** Shebani KO, Souba WW, Finkelstein DM, et al. Prognosis and survival in patients with gastrointestinal tract carcinoid tumors. *Ann Surg.* 1999;229(6):815-823. **6.** Ardill JE, O'Dorisio TM. Circulating biomarkers in neuroendocrine tumors of the enteropancreatic tract: application to diagnosis, monitoring disease, and as prognostic indicators. *Endocrinol Metab Clin North Am*. 2010;39(4):777-790. **7.** Yao JC, Hassan M, Phan A, et al. One hundred years after "carcinoid": epidemiology of and prognostic factors for neuroendocrine tumors in 35,825 cases in the United States. *J Clin Oncol.* 2008;26(18):3063-3072. **8.** Turner GB, Johnston BT, McCance DR, et al. Circulating markers of prognosis and response to treatment in patients with midgut carcinoid tumours. *Gut.* 2006;55(11): 1586-1591. **9.** Stronge RL, Turner GB, Johnston BT, et al. A rapid rise in circulating pancreastatin in response to somatostatin analogue therapy is associated with poor survival in patients with neuroendocrine tumours. *Ann Clin Biochem.* 2008;45(pt 6):560-566.

NOVARTIS

Novartis Pharmaceuticals Corporation
East Hanover, New Jersey 07936-1080