



PALLIATIVE CARE CASE OF THE MONTH

“Are Antidepressants Safe to Use with Neuroendocrine Tumors?”

By

Andrew Thurston, MD

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Case: Mrs. J is a 59-year-old female with history of HTN, HLD, and a recently diagnosed neuroendocrine tumor (NET) of the pancreas with elevated Serotonin levels. She comes to her appointment in the palliative care clinic to discuss her mood and anxiety. After speaking with her, it seems that she has been feeling depressed for quite some time, likely predating her NET diagnosis. Her concentration, sleep, appetite, and energy have all been impacted. In addition to this, she has frequent flushing episodes and diarrhea related to her NET, which are finally better controlled with treatment. After evaluation, it is determined that initiation of antidepressant therapy is indicated, though concern was raised regarding safety of anti-depressant medications in the setting of NET.

Discussion:

Neuroendocrine Tumors

Neuroendocrine neoplasms (NENs, or neuroendocrine tumors, NETs) are cancers of neuroendocrine cells, typically found in the lungs, appendix, small intestine, rectum, and pancreas. They are relatively rare, comprising approximately 2% of malignancies with a prevalence of <200,000 in the United States.¹ NETs often have varying presentations, some being slow growing and indolent, while others are very aggressive. In addition, some NETs such as those of pancreatic origin are considered “functional”, in that they produce excess hormones such as serotonin, whereas others are considered “nonfunctional.”²

Common symptoms from functional tumors include skin flushing, diarrhea, dizziness, tremor, rash, increased thirst.

Depression Management in NET

Antidepressant management with SSRIs or SNRIs pharmacologically impacts the reuptake of serotonin. In situations in which NET is functionally producing high levels of serotonin, there have been some concerns about the safety of using SSRI/SNRI treatment of depression. In the past, use of antidepressant therapy has been discouraged. There is some evidence of higher rates of depression in patients with NET, with some theories suggesting that the CNS serotonin precursor, tryptophan, is shunted toward serotonin-producing NET cells, thereby depriving the CNS of serotonin precursor.³

Recent retrospective studies have shown that the use of antidepressant medication in functional NET is generally well tolerated and safe within appropriate titration guidelines, with no increased incidence of serotonin syndrome or carcinoid syndrome with use.^{4,5} Treatment of depression and anxiety using first line therapy with SSRI/SNRI is recommended in patients with either functional or nonfunctional NET and should not be discouraged. There is no evidence to suggest that first line therapy with SSRI/SNRI would be any less effective in patients with NET.

Conclusion: It is safe to use antidepressant therapy for anxiety and depression in patients with functional NET within appropriate dosing guidelines and monitoring of additional drug-drug interactions and exacerbations of carcinoid syndrome. Mrs. J was subsequently initiated on Sertraline with a conservative 25mg initial daily dose, and up titrated safely and without significant side effects.

References:

1. Oronsky B, Ma PC, Morgensztern D, Carter CA. Nothing But NET: A Review of Neuroendocrine Tumors and Carcinomas. *Neoplasia*. 2017 Dec;19(12):991-1002. doi: 10.1016/j.neo.2017.09.002. Epub 2017 Nov 5. PMID: 29091800; PMCID: PMC5678742.
2. Parbhu SK, Adler DG. Pancreatic neuroendocrine tumors: contemporary diagnosis and management. *Hosp Pract (1995)*. 2016 Aug;44(3):109-19. doi: 10.1080/21548331.2016.1210474. Epub 2016 Jul 18. PMID: 27404266.
3. Williams MD, Dolenc TJ. Selective serotonin reuptake inhibitors and patients with carcinoid tumor. *Psychosomatics*. 2005;46(4):370-372.
4. Isenberg-Grzeda E, MacGregor M, Bergel A, Eagle S, Espi Forcen F, Mehta R, Matsoukas K, Wills J, Reidy-Lagunes D, Alici Y. Antidepressants appear safe in patients with carcinoid tumor: Results of a retrospective review. *Eur J Surg Oncol*. 2018 Jun;44(6):744-749. doi: 10.1016/j.ejso.2018.03.010. Epub 2018 Mar 21. Erratum in: *Eur J Surg Oncol*. 2018 Sep;44(9):1453. PMID: 29622373; PMCID: PMC5970966.
5. Isenberg-Grzeda E, MacGregor M, Matsoukas K, Chow N, Reidy-Lagunes D, Alici Y. Must antidepressants be avoided in patients with neuroendocrine tumors? Results of a systematic review. *Palliat Support Care*. 2020 Oct;18(5):602-608. doi: 10.1017/S147895152000005X. PMID: 32036806; PMCID: PMC7416528.

Personal details in the case published have been altered to protect patient privacy.

For palliative care consultations please contact the Supportive and Palliative Care programs at PUH/MUH, 412-647-7243, pager # 8511, Shadyside, 412-647-7243, pager # 8513, Perioperative/ Trauma Pain, 412-647-7243, pager # 7246, UPCI Cancer Pain Service, pager 412-644-1724, Magee Women's Hospital, pager 412-647-7243 pager # 8510, VA Palliative Care Program, 412-688-6178, pager # 296. Hillman Outpatient: 412-692-4724. For ethics consultations at UPMC Presbyterian-Montefiore and Children's pager 412-456-1518

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