

Pancreatic neuroendocrine tumors: Therapeutic challenges and research limitations

Pancreatic neuroendocrine tumors (PNETs) are known to be the second most common epithelial malignancy of the pancreas. PNETs can be listed among the slowest growing as well as the fastest growing human cancers. The prevalence of PNETs is deceptively low; however, its incidence has significantly increased over the past decades. According to the American Cancer Society's estimate, about 4032 (> 7% of all pancreatic malignancies) individuals will be diagnosed with PNETs in 2020. PNETs often cause severe morbidity due to excessive secretion of hormones (such as serotonin) and/or overall tumor mass. Patients can live for many years (except for those patients with poorly differentiated G3 neuroendocrine tumors); thus, the prevalence of the tumors that is the number of patients actually dealing with the disease at any given time is fairly high because the survival is much longer than pancreatic ductal adenocarcinoma. Due to significant heterogeneity, the management of PNETs is very complex and remains an unmet clinical challenge. In terms of research studies, modest improvements have been made over the past decades in the identification of potential oncogenic drivers in order to enhance the quality of life and increase survival for this growing population of patients. Unfortunately, the majority of systematic therapies approved for the management of advanced stage PNETs lack objective response or at most result in modest benefits in survival. In this review, we aim to discuss the broad challenges associated with the management and the study of PNETs.

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