Introduction: Pancreatic neuroendocrine tumours (PNETs) are rare benign or malignant epithelial tumours that can be divided into functional or non-functional tumours. Few published studies are available especially of a large number of patients. Due to this paucity, data related to survival rates and prognostic variables exist mainly from smaller groups of patients, and studies often include a mix of different tumour types, such as bronchial carcinoids, midgut carcinoids, as well as pancreatic endocrine tumours. Patients with PNETs have variable outcomes, and a better evaluation of prognostic predictors is needed. It remains unclear whether patients with non-functional tumours have a poorer prognosis than those with functional tumours. Information from immunohistochemical staining techniques provides more detail about the tumour and distinguishes PNETs from exocrine tumours and, to a certain extent, between the degree of differentiation (well versus poor). Even up to this level of information, the clinical outcome of the disease is still unclear, and often depends on metastasis of the tumour towards lymph nodes, liver and other distant organs. Metastatic status is considered by some researchers the most significant variable in determining the outcome and survival of patients. Furthermore, considering other valuable factors including tumour necrosis, mitotic rate and proliferative index Ki67 may improve clinical management of the tumour. The main objectives of this study were to determine various pathological and immunohistochemical features in tissue samples from patients with PNETs.

Methods: This was a retrospective study. A total of 37 patients, who underwent surgery for a primary pancreatic tumour at Royal Prince Alfred Hospital, Sydney, Australia from January 1993 to December 2012, were identified for this study.

Results: The researcher found that gender (P < 0.03), presence of Ki67 (P < 0.001), invasive margin (P < 0.023), and involvement of surgical margin (P < 0.023) are independent predictors of survival. Positive results for Vimentin for functioning tumours (P < 0.001) and Cytokeratin AE1 / AE3 for non-functioning tumours (P < 0.029) had an association with patient survival.

Conclusion: The future for diagnosis and survival of pancreatic cancer is promising, and based on these findings, a large population-based study is recommended from multiple institutions.