

## Lymph Node Ratio as a Prognostic Factor in Patients with Pancreatic Endocrine Tumours

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**Context** The role of lymph node ratio (LNR) has been recognized as a prognostic factor in several malignancies. **Objectives** To evaluate the role of LNR in patients affected by pancreatic neuroendocrine tumors (pNETs). **Methods** Data regarding 45 patients were extracted from a dedicate database containing 92 patients undergone surgical exploration for pNETs. Patients who underwent palliative operation or enucleoresection or without Ki-67 determination were excluded. Sex, age, presence of symptoms, hormonal status, site of tumor, presence of MEN1, surgical procedure, R status, TNM-ENETS stage, WHO 2010 classification, Ki-67, and LNR were studied as possible factors influencing disease free survival (DFS) with univariate and multivariate analyses. **Results** Mean age of patients was 60±13 years. There were 22 (51.2%) female and 21 (48.8%) male. Symptoms were present in 27 (62.8%) patients. 34 (79.1%) patients had non-functioning pNETs and more frequently the tumor was located in the body (46.5%). Five (11.6%) patients were affected by MEN1. R0 resection was carried out in 38 (88.4%) cases. There were 17 (39.5%) pNETs

G1, 24 (55.8%) pNETs G2 and 2 (4.7%) pancreatic neuroendocrine carcinomas (pNECs) G3. Mean Ki-67 was 6±10%. According to TNM-ENETS stage there were 17 (39.5%), 2 (4.7%), 17 (39.5%), and 7 (16.3%) patients in stage I, II, III, and IV, respectively. LNR was 0 in 26 (60.5%) patients, between 0 and 0.2 in 8 (18.6%) patients, and >0.2 in 9 (20.9%) patients. Mean DFS was 48±56 months. Multivariate analysis found that TNM-ENETS stage (HR 5.0; P=0.036) and Ki-67 (HR 1.2; P=0.016) were significantly related to DFS. There were no differences between patients with LNR=0 and LNR between 0 and 0.2 (HR 5.9; P=0.172) while patients with LNR between 0 and 0.2 had better DFS respect to those with LNR >0.2 (HR=0.2; P=0.01). A new cut off for LNR of 0.07 was obtained by ROC curve (AUC 0.771; P=0.008). Considering the new cut off, the multivariate analysis showed that LNR <0.07 was the only independent factor related to DFS (HR=28; P=0.002). **Conclusion** LNR can be considered an important prognostic factor predicting DFS in patients affected by pNETs.