E25

The Significance Of Extrapancreatic Extension In The Eighth Edition Of The American Joint Committee On Cancer Staging System For Pancreatic Ductal Adenocarcinoma In The National Cancer Database

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Background : Although the concept of extrapancreatic extension (EPEx) was removed in the eighth edition of the American Joint Committee on Cancer pancreatic (AJCC) cancer staging system, several studies still support the prognostic significance of EPEx. This study aimed to investigate the significance of EPEx in pancreatic ductal adenocarcinoma (PDAC) using the National Cancer Database (NCDB).

Methods : Patients who underwent definite resection for PDAC between 2006 and 2016 were extracted and analyzed from the NCDB. Cases arising from premalignant lesions, with metastases, and those treated with neoadjuvant therapy were excluded. Comparative analysis of clinicopathologic characteristics, survival analysis, and multivariate analysis were performed.

Results : Among 37,634 patients, median overall survival was 23 months and the 5-year survival rate was 22.7%. The prevalence of EPEx was lowest for T1 (63.2%) and increased with each T-category (T2: 83.4%, T3: 85.8%). Survival was better for EPEx-negative(-) patients than for EPEx-positive(+) patients (median 33.7 vs. 21.5 months, $p<0.001$). When T-stage was stratified by EPEx, EPEx (+) patients had worse survival throughout all T-categories. Survival was comparable for T1 EPEx (+) and T2 or T3 EPEx (-) ($p=0.088$ and $p=0.178$, respectively). Furthermore, T2 and T3 EPEx (-) groups had similar survival to each other ($p=0.877$) and distinctly superior survival than T2 and T3 EPEx (+) groups. In multivariate analysis, EPEx was an independent prognostic factor for survival.

Conclusions : There was significant survival differences according to the EPEx and EPEx was an important prognostic factor in both the overall cohort and throughout all T-stages. This study strongly suggests that staging systems should re-instate EPEx and apply it to all T-stages, especially in T1, where EPEx was absent in 36% of patients.

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