

Pathologic Diagnosis of Pancreatic Adenocarcinoma in the United States: Its Status and Prognostic Value

Miaozhen Qiu (SYSUCC, China), Dajun Yang (SYSUCC, China), Ruihua Xu (SYSUCC, China).

BACKGROUND: Pancreatic cancer is the fourth most common cause of cancer related death in the United States. Pathologic diagnosis is the golden standard for cancer diagnosis. Even with the development of new biopsy methods, diagnosis of pancreatic cancer is sometimes without histological evidence. The aim of our study is to find out the status of pancreatic cancer patients who are diagnosed without pathologic confirm and the prognostic value of pathologic diagnosis.

EXPERIMENTAL DESIGN: The study population was based on the Surveillance, Epidemiology, and End Results (SEER) database. We excluded cases without follow-up records, as well as lacking documentation on diagnostic confirmation and those who had multiple tumors and pancreatic cancer was not the first tumor. The primary endpoint of this study was cause specific survival (CSS), which was calculated from the date of diagnosis to the date of cancer specific death. Logistic regression model was used to identify factors related to no pathologic diagnosis. Multivariable Cox regression model identified potential prognostic factors. All statistical tests were two-sided. This study was deemed exempt from institutional review board approval by Sun Yat-sen University Cancer Center; informed consent was waived.

RESULTS: We identified 52,759 pancreatic adenocarcinoma patients for analysis. There were 6206 (11.76%) patients without pathologic diagnosis. Older age, reported from nursing/convalescent home/hospice or physician's office/private medical practitioner, early year of diagnosis, larger tumor size, pancreatic head cancer, unmarried patients, uninsured and stage I disease all related with no pathologic diagnosis. The median age of our whole population was 69 but it was 80 for those without pathologic diagnosis and 67 for those with. In this study, 42,888 deaths (81.29 %) were observed including 37,702 (80.99%) in the pathologic diagnosis group and 5,186 (83.56%) in the no pathologic diagnosis group. The median CSS for the whole population was 6.65 months. The median CSS in patients with and without pathologic diagnosis was 7.36 months and 3.73 months, $P < 0.001$. Age, year of diagnosis, marital status, insurance status, tumor size, location, TNM stage, histologic grade, methods diagnostic confirmation and therapy were all independent prognostic factors in the multivariable analysis. The HR for pathologic diagnosis was 0.92 (95% CI: 0.89-0.95), $P < 0.001$.

CONCLUSIONS: This is the first study to demonstrate the status of pathologic diagnosis for pancreatic adenocarcinoma patients. Using the SEER database, we revealed that about 11% of the pancreatic cancer patients were diagnosed without pathologic confirm. The most important factor contributing to no pathologic diagnosis was age. The multivariate analysis showed that pathologic confirm was an independent prognostic factor for pancreatic adenocarcinoma patients. We therefore encourage patients who are suspected the diagnosis of pancreatic cancer to get a pathologic evidence. New techniques for biopsy are needed, especially for elderly patients.