Trends in incidence and survival of early-stage pancreatic ductal adenocarcinoma in the United States.

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Background: Pancreatic ductal adenocarcinoma (PDAC) is associated with poor survival with nearly 80% mortality within the first year after diagnosis. There have been modest incremental improvements in survival over the last decade, however the reason for this improvement is unclear. The aim of this study is to evaluate the trends of diagnosis and survival in the last two decades using large public national databases. **Methods:** Incidence rates of PDAC between 2001 and 2020 (age-adjusted to the 2000 US standard population) were evaluated in the United States Cancer Statistics (USCS) database, representing approximately 98% of the US population. The data was analyzed with SEER*Stat using Joinpoint regression. A survival analysis was subsequently conducted using the American College of Surgeons' (ACS) National Cancer Database (NCDB), of PDAC cases diagnosed between 2004 and 2015.Survival outcomes were stratified by AJCC stage. Kaplan-Meier survival curves were generated, and log-rank tests were conducted to assess differences in survival between stages. Cox proportional hazards model was employed to estimate hazard ratios and adjust for potential confounders. The analysis was performed with IBM SPSS 24. **Results:** From 2001 to 2020, the age-adjusted incidence rate of early-stage PDAC increased from 1.1 to 2.8 (per 100,000 person-years), while locally advanced PDAC increased from 3.6 to 4.3, and from 6.4 to 7.7 for metastatic PDAC (all $p<0.01$). The Annual Percent Change (APC) was 5.7 for Early-Stage PDAC (95% CI 5.1-6.4), 1.4 for locally advanced (95% CI 0.8-1.9), and 0.8 for Metastatic PDAC (95% CI 0.6-1.1). The incidence rate ratio (IRR) almost doubled for early-stage PDAC, increasing from 0.10 to 0.19. Conversely, for metastatic and locally advanced stages, the IRR decreased from 0.58 to 0.52 and 0.32 to 0.29, respectively. Survival analysis revealed 5-year overall survival rates of 74%, 69%, 57%, and 33% for stages 0, IA, IB, and IIA, respectively, with an overall improvement from 2004 to 2015. This increase was consistent among all age groups, genders, and races. Stages IA and IB demonstrated larger increases 45.9% and 56.6%, respectively (IA: 47% in 2004 to 75% in 2015; IB: 38% in 2004 to 68% in 2015). **Conclusions:** This study highlights a marked increase in the incidence of early-stage PDAC, surpassing the overall incidence increase, suggesting improving diagnostic capabilities over the last two decades. Furthermore, the substantial improvement in 5-year survival rates for stages IA and IB indicates progress in the management of early-stage PDAC. These findings emphasize the importance of continued efforts in early detection and treatment strategies for PDAC. Research Sponsor: None.