Disparities in Socioeconomic Status and Outcomes of Early-Onset Pancreatic Cancer: A Nationwide Analysis

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Background

Pancreatic ductal adenocarcinoma (PDAC) is a leading cause of cancer related deaths, with a 5-year relative survival rate of roughly 13%. Significantly, the incidence of PDAC is increasing among patients < 50 years, referred to as early onset pancreatic cancer (EOPC). The literature is sparse with regards as to the unique barriers that patients in this group face compared to average onset pancreatic cancer (AOPC). In this study, we looked to explore demographic, socioeconomic, and clinical outcomes in patients with EOPC compared to AOPC.

Methods

We conducted a cross-sectional study using the 2018 National Inpatient Sample of adult (age > 18 years) hospitalizations with PDAC. Descriptive data was used to compare demographic and socioeconomic characteristics of EPOC and AOPC. Multivariable logistic regression was used to evaluate the association between EOPC and clinical outcomes, adjusting for possible confounders. Survey weights were applied to generate national estimates.

Figure 1: Median Household Income Quartile of EOPC and AOPC

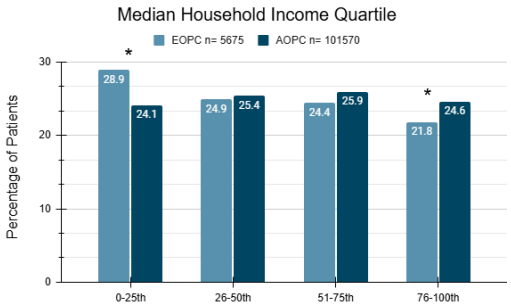
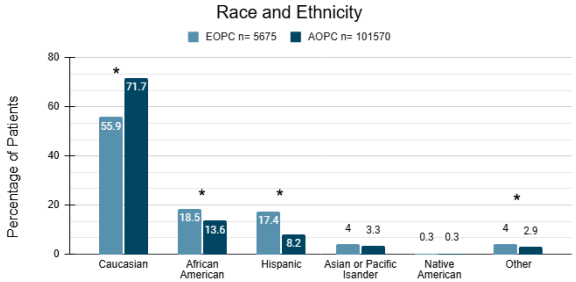


Figure 2: Race and Ethnicity of EOPC and AOPC Populations



Results

Among 107,245 weighted hospitalizations of patients with pancreatic cancer, 5675(5.3%) were classified as EOPC. The mean age of EOPC patients was 43.2 and 69.6 in AOPC. There was a non significant difference between genders of both groups. Patients with EOPC were more likely to belong to a minority population, with a higher percentage of African Americans (18.5% vs 13.6%) and Hispanics (17.4% vs 8.2%) [Figure1], be located in a metropolitan region (36% vs 30%) [Figure 2], belong to the lowest median household income quartile (28.9% vs 24.1%) [Figure 3], when compared to AOPC (all p<0.0001). After adjustment, EOPC was independently associated with increased hospital mortality (aOR 1.44, 95% CI: 1.26–1.63), increased presence of metastatic disease (aOR 1.99, 95% CI: 1.52–2.59), and decreased pancreatic surgery (aOR 0.66, 95% CI: 0.59–0.75), all p<0.0001. There was no significance with regards to sepsis (aOR 1.01, 95% CI: 0.93–1.11) and venous thromboembolism (aOR 1.03, 95% CI: 0.94–1.14). [Figure]

Figure 3: Hospital Location of Patient Admission of EOPC and AOPC

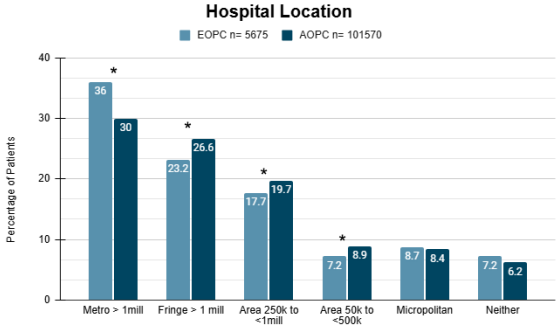
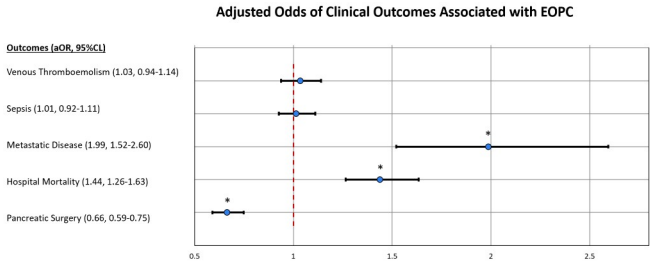


Figure 4: Adjusted Odds of Clinical Outcomes Associated with EOPC Compared to AOPC



Conclusions

With the rising incidence of EOPC, it is increasingly important to characterize this subset of patients. Our data reveals that EOPC patients experience disparities, notably increased minority representation and lower socioeconomic status. Moreover, after adjusting for possible confounders, EOPC was associated with an increased risk of metastatic disease presentation, reduced rates of pancreatic surgery, and increased hospital mortality. These findings shed light on the importance of earlier detection, improved access to care, and further research to identify and address the specific challenges of this vulnerable population.

References:

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