Introduction

- Rare pancreatic carcinomas account for roughly 15% of all pancreatic cancers and approximately 8,300 new cases within the US annually.
- Pancreatic adenocarcinoma comprises roughly 85% of newly-diagnosed pancreatic cancers; consequently most current population-level research data tends to focus on this cancer type over other pancreatic cancer histologies.
- Little research compares initial stage at diagnosis among rare vs. common pancreatic tumors, which we believe poses a challenge to clinicians tasked with treating patients with these less-common tumor histologies.

Aim

- Our goal is to identify trends in diagnosis of rare pancreatic tumors and compare to population-level data to the more common adenocarcinoma histology.
- Our work focused on 4 of the more common “rare” histologies: ductal, carcinoid, mucinous adenocarcinoma, and undetermined) and stage was dichotomized (locoregional vs. distant).
- The comparator group was pancreatic adenocarcinoma based on greater numbers of diagnosis.
- Multivariate and univariate logistic regression was used to describe the association underlying late stage diagnosis, controlling for patient and tumor characteristics.

Methods

- We employed a retrospective cohort study model.
- Secondary declassified patient data was obtained using the NCI’s Surveillance, Epidemiology, and End Results (SEER) 1990-2015 database.
- We included 90,764 patients diagnosed with pancreatic cancer aged 18+. Rare tumor histology was classified into four categories (ductal, carcinoid, mucinous adenocarcinoma, and undetermined) and stage was dichotomized (locoregional versus distant).
- The comparator group was pancreatic adenocarcinoma based on greater numbers of diagnosis.

Results

Table 1: Population Parameters by History

<table>
<thead>
<tr>
<th>Histology (Adenocarcinoma)</th>
<th>Reference</th>
<th>Multivariate Point Estimate, 95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductal</td>
<td>0.272, [0.259, 0.286]</td>
<td>0.378, [0.359, 0.399]</td>
</tr>
<tr>
<td>Malignant Carcinoid</td>
<td>0.692, [0.650, 0.738]</td>
<td>0.991, [0.923, 1.065]</td>
</tr>
<tr>
<td>Mucinous</td>
<td>1.243, [1.158, 1.334]</td>
<td>1.413, [1.312, 1.522]</td>
</tr>
<tr>
<td>Neoplasm</td>
<td>1.215, [1.170, 1.261]</td>
<td>1.013, [0.973, 1.054]</td>
</tr>
</tbody>
</table>

Table 2: Univariate and Multivariate Odds Ratios for Distant Cancer

<table>
<thead>
<tr>
<th>Effect</th>
<th>Univariate Point Estimate, 95% Confidence Interval</th>
<th>Multivariate Point Estimate, 95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>History (Adenocarcinoma)</td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Ductal</td>
<td>0.272, [0.259, 0.286]</td>
<td>0.378, [0.359, 0.399]</td>
</tr>
<tr>
<td>Malignant Carcinoid</td>
<td>0.692, [0.650, 0.738]</td>
<td>0.991, [0.923, 1.065]</td>
</tr>
<tr>
<td>Mucinous</td>
<td>1.243, [1.158, 1.334]</td>
<td>1.413, [1.312, 1.522]</td>
</tr>
<tr>
<td>Neoplasm</td>
<td>1.215, [1.170, 1.261]</td>
<td>1.013, [0.973, 1.054]</td>
</tr>
</tbody>
</table>

Conclusions and Recommendations

- The rate of pancreatic cancer diagnosis increases with age.
- Pancreatic cancer is more likely to be diagnosed in distant stages than in early/locoregional stages.
- Patients aged 40 to 59 are more likely than patients aged 60+ to be diagnosed in later stages.
- Males are more likely than females to be diagnosed in later disease stages.
- Blacks are more likely than Whites to be diagnosed in later stages.
- Distal stage pancreatic cancers are more likely to be Poorly-differentiated or undetermined rather than well- or moderately-differentiated.
- Ductal pancreatic cancers are less likely to be diagnosed in late stage; mucinous is more likely to be diagnosed in later stage.

Based on these findings, we suggest research into specific markers for mucinous adenocarcinoma for earlier detection, as well as improved screening for adults aged 40-59, males, and African Americans.

Acknowledgements

I would like to thank my team as well as the Thomas Jefferson University of population health and Dr. Edith Mitchell.

References