# P-2

## Factors Impacting Survival Outcomes of Islet Cell Carcinoma

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### BACKGROUND

Islet cell carcinomas are low-grade tumors originating from the islets of Langerhans. Despite the indolent nature of these tumors, metastasis is often detected upon initial diagnosis, at which point the mean survival is approximately 2 years. In this study, we aim to investigate disparities that exist in these patients and how facility variables, patient demographics, and palliative care (PC) utilization contribute to differences in survival outcomes.

### METHODS

We used the National Cancer Database to identify patients diagnosed with islet cell carcinoma (ICD-O-3 histology code 8150/3) between 2004-2019 (N=2364). Differences in socioeconomic factors were determined using Pearson's chi-squared test with post-hoc Bonferroni adjustment. Survival was evaluated using Kaplan-Meier curves, log-rank tests, and Cox proportional hazards modeling.

### RESULTS

The mean age of diagnosis was 59 years, with older individuals having worse average survival outcomes (84 months) than their younger counterparts (126 months). Male participants on average also had worse survival outcomes (109 months) than females (121 months). The average Charlson-Deyo score was 0.38±0.70. Pearson's chi-squared analysis demonstrated that those with Medicaid were less likely to be White ($p<0.001$). Furthermore, those with Medicaid were more likely to receive care at community cancer centers ($p<0.001$). Most of the cohort was treated at academic/research facilities (50.5%), followed by community centers (21.6%) and integrated network programs (16.6%). Academic/research facilities had the highest overall mean survival (123 months) compared to the other two programs (79 and 105 months, respectively). Patients who lived in metropolitan counties (defined by population size) had better mean survival outcomes (115 months), though patients who traveled further for care had consistently better survival outcomes ($p<0.001$). Patients who received PC for symptom management had worse survival outcomes than those who did not ($p<0.001$). After adjusting for all other variables, Cox proportional hazard ratios remained significant for age ($p<0.001$), race ($p=0.013$), and PC utilization ($p<0.001$).

*Table 1: Multivariate Analysis of Survival Outcomes*

| Variable | | Hazard Ratio (95% CI) | P-value |
|---|---|---|---|
| **Age** | **Youth (14-47 years)** | 1 (Reference) | |
| | **Middle-Aged (48-64)** | 1.35 (1.04-1.76) | 0.024 |
| | **Elderly (>65)** | 2.67 (1.96-3.63) | <0.001 |
| **Race** | **White** | 1 (Reference) | |
| | **Black** | 0.84 (0.62-1.15) | 0.278 |
| | **Asian** | 2.94 (1.31-6.60) | 0.009 |
| **Palliative Care Utilization** | **None** | 1 (Reference) | |
| | **Chemotherapy, Hormone Therapy, or Other Systemic Drug** | 3.97 (1.29-12.27) | 0.017 |

## CONCLUSIONS

Factors associated with increased survival include younger age, female sex, higher income, private insurance, receiving care at an academic/research facility, and not utilizing PC. These findings contribute to a developing understanding of disparities that impact survival outcomes of islet cell carcinoma.

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