

**Title: Pancreatic Cancer Report 1995-2002**

**Authors:**

Neal W. Wilkinson, MD, MPH  
Assistant Professor, Surgical Oncology

Deborah S. Schulte, RHIT, CTR  
Administrative Coordinator, Oncology Registry

**Introduction:**

It is estimated that 30,700 patients will be diagnosed with pancreatic cancer in the United States, and Iowa alone is estimated to experience 300 deaths in 2003\*. The great majority of patients receive only chemo radiation therapy or palliative care with little impact on survival. The long-term survival for pancreatic cancer patients remains 3% to 5 % and has improved only slightly over the past few decades. This is in spite of dramatic improvements in preoperative staging, surgical techniques and adjuvant therapies.

With improvements in imaging, helical CT, MRI, and EUS, we can now select patients who may benefit from aggressive surgical resection. Successful surgical outcomes by large pancreatic centers of excellence are real and reproducible. This improvement in preoperative staging translates into fewer patients undergoing non-therapeutic laparotomies and/or palliative resections. Unfortunately, efforts at early tumor detection or screening for pancreatic cancer still have not been developed or implemented at this point. Despite our best efforts, 85% to 90% of the patients diagnosed with pancreatic cancer still present with un-resectable or metastatic disease.

This report was generated to examine the University of Iowa experience with pancreatic cancer. Careful examination of known clinical risk factors, stage at presentation and survival are described. Understanding the past, present and future of pancreatic cancer will direct us to future achievements.

**Methods:**

We reviewed the Tumor Registry database for pancreatic cancer (ICD-0 codes: 250.0 -head, 25.1 -body, 25.2 -tail, 25.3 -pancreatic duct 25.7 -other specified parts of pancreas (neck) 25.8 -overlapping lesions of pancreas and 25.9 -pancreas NOS) between 1995 and 2002. All endocrine, lymphoma and precancerous lesions were excluded. All patients carried the diagnosis of adenocarcinoma at time of staging. Some carcinomas arising from mucinous cystic neoplasms and intraductal papillary mucinous neoplasms (IPMN) may have been included but only if cancer was identified. Data extracted included the following: sex, age, and risk factors to include family history of cancer, alcohol use and tobacco use. We also examined the outcomes of the entire group and stratified by stage at presentation, treatment and changes over time.

Familial and environmental risk factors have been identified for pancreatic cancer. There does exist a strong familial pancreatic syndrome but this risk factor cannot be extracted for the registry data base (Table 1). Subjective complaints of pancreatic cancer patients are historically nonspecific and vague. Signs and symptoms of pancreatic cancer are also nonspecific and lend themselves poorly to effective screening (Table 2). Registry data cannot be effectively utilized to examine presenting symptoms; therefore, only family history and environmental risk factors were examined. The nonspecific presentation of pancreatic cancer, as seen in Tables 1 and 2 demonstrates the obstacles to effective screening.

<b>Familial Risk for Pancreatic Cancer:</b>	<b>Environmental Factors:</b>
<p>Familial pancreatic cancer                      Hereditary chronic pancreatitis                      Lynch II                      Familial atypical multiple mole                      Melanoma                      Hippel-Landau Syndrome                      Neurofibromatosis                      Gardners’s Syndrome</p>	<p>Smoking                      Alcohol consumption                      Chronic pancreatitis                      Aromatic Amines (chemical industry)                      Diabetes                      Cocaine abuse</p>

**Table 1**

<b><u>Symptoms of Pancreas Cancer:</u></b>	<b><u>Signs of Pancreatic Cancer:</u></b>
<p>Anorexia                      Nausea                      Vomiting                      Fatigue                      Weakness &amp; Anemia                      Foul diarrhea                      Floating stools                      Pain                      Depression</p>	<p>Asymptomatic jaundice                      Pain associated with jaundice                      Cholecystitis without cholelithiasis                      Postcholecystectomy syndrome                      New onset of diabetes                      Worsening long-standing diabetes                      Weight loss</p>

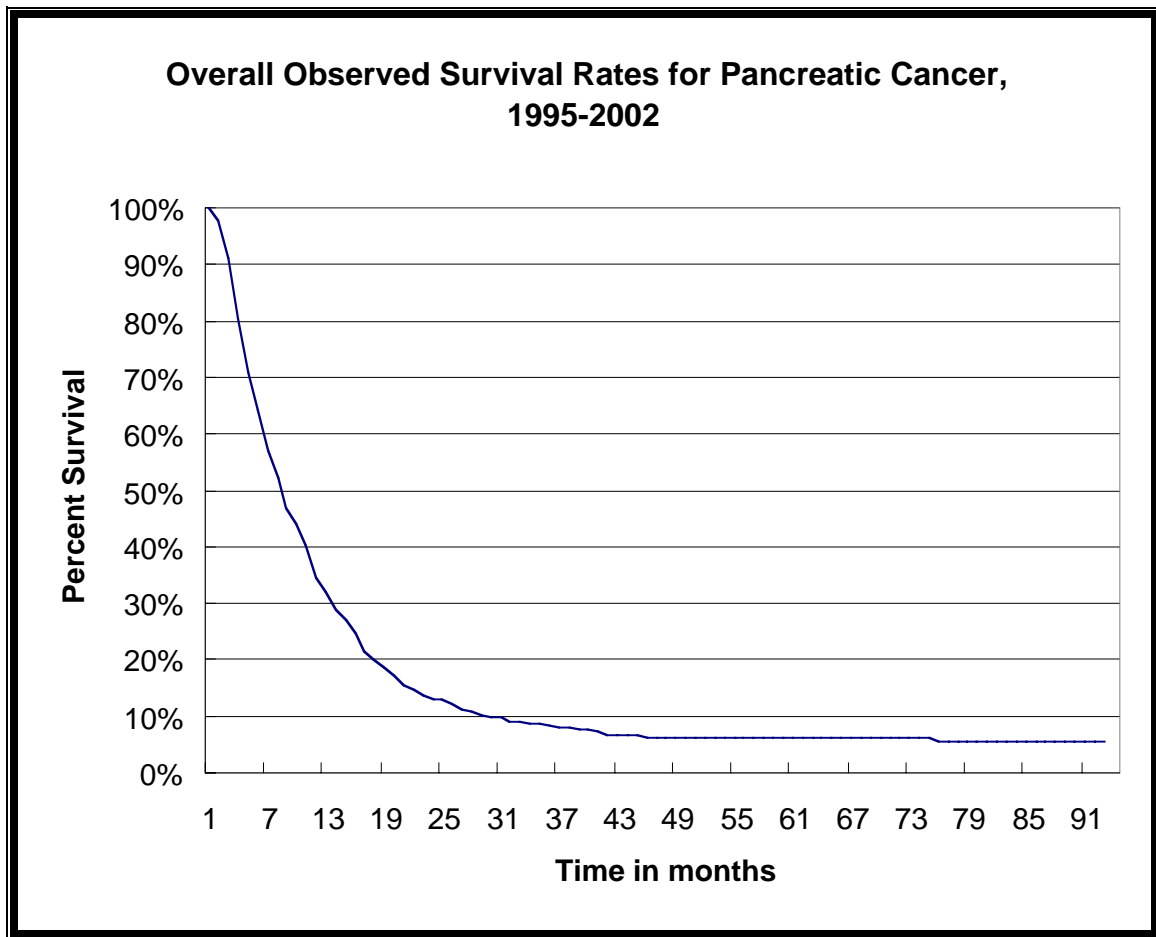
**Table 2**

**Results:****Risk Factors**

Examining the University of Iowa Tumor Registry database, 432 cases of pancreatic exocrine cancer were identified. The age ranged from 22 to 94 with a mean age of 65. There was a slight male predominance with a male to female ratio of 1.4:1 (235/432). Familial history of cancer (any type) was examined, 54% (234/432) reported a positive family history, 20% (85/432) reported a negative family history with 27% (115/432) being unknown or unreported. Alcohol and tobacco commonly associated with pancreatic diseases. Alcohol (either current or prior) use was reported in 50% (216/432) of patients. 39% (168/432) reported no prior alcohol use and 11% (48/432) being unknown or unreported. Tobacco (either current or prior) use was reported in 57% (249/432) of patients. 31% (135/432) reported no prior tobacco use and 11% (49/432) being unknown or unreported. In the younger age groups, tobacco use was more common. Age 20-39 had 89% (8/9) and age 40-59 had 68% (79/116) tobacco history although the numbers are small.

**Survival statistics**

The median survival for the entire group of 432 patients was 7 months, Figure 1. This included patients with localized and distant disease as well as those undergoing aggressive treatment as well as palliative care alone. The one, three and five year survival was 32%, 8% and 6% respectively. The great majority of patients (411/432 or 95%) presented with regional or advanced disease (distant or unstaged category).



**Figure 1**

A more meaningful breakdown of the patients is seen by stage breakdown into localized, regional and distant subgroups (Table 3). This can be seen graphically with Figure 2. Although the results achieved with localized pancreatic cancer treated surgically shows great promise, overall survival of 59%, this group represents only a small minority of patients (n=21). Regional and distant disease predominates with far less optimistic survival results. Regional disease survival was only 8 percent at three years, which is little better than distant and unstaged survival. Meaningful long-term survival was found only in the subgroup of patients who present with surgically resectable local disease.

**Survival Percent for Pancreatic cancer, 1995-2002**

Group	1-yr	3-yr	5-yr
<b>Overall (n=432)</b>	32	8	6
Localized (n=21)	57	41	41
Regional (n=207)	43	8	7
Distant (n=171)	16	4	3
Unstaged (n=26)	19	4	n/a
<b>Localized w/surgery</b>	68	59	59
<b>Regional w/ surgery</b>	62	10	8

Table 3

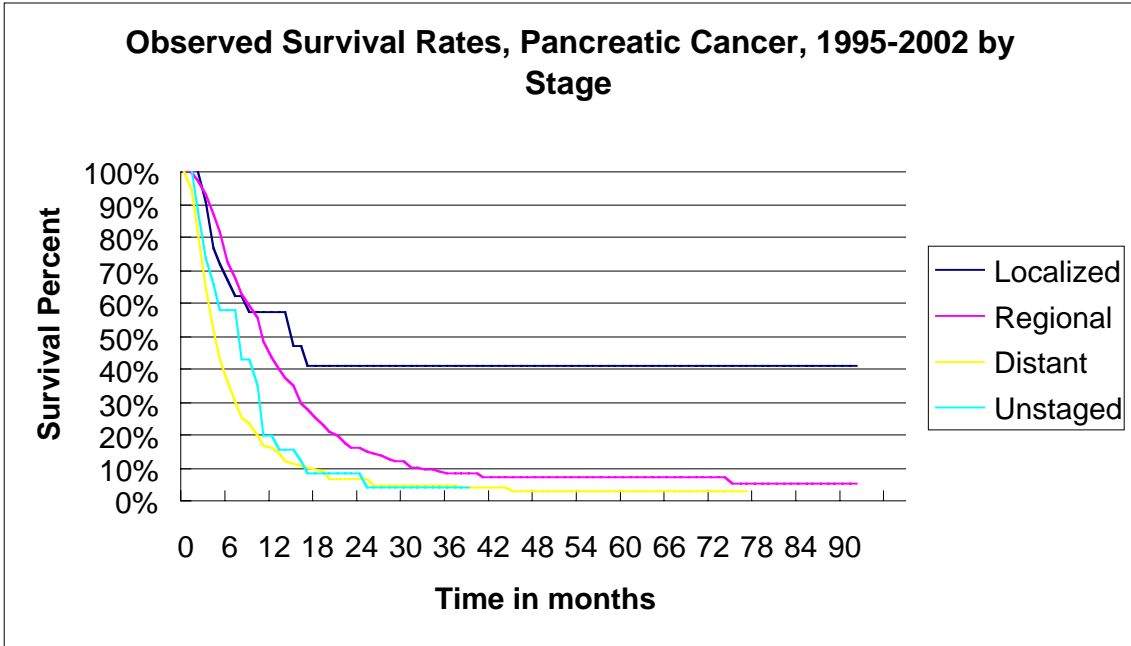


Figure 2

Regional and distant disease was the primary presentation of pancreatic cancer at the University of Iowa. Only 6% of the entire cohort had localized disease whereas 43% and 51% were regional and distant on presentation, respectively. Unfortunately, there is

no improvement in this trend over time. Examining stage at presentation between 1995-1999 and 2000-2002 shows little change (Figure 3).

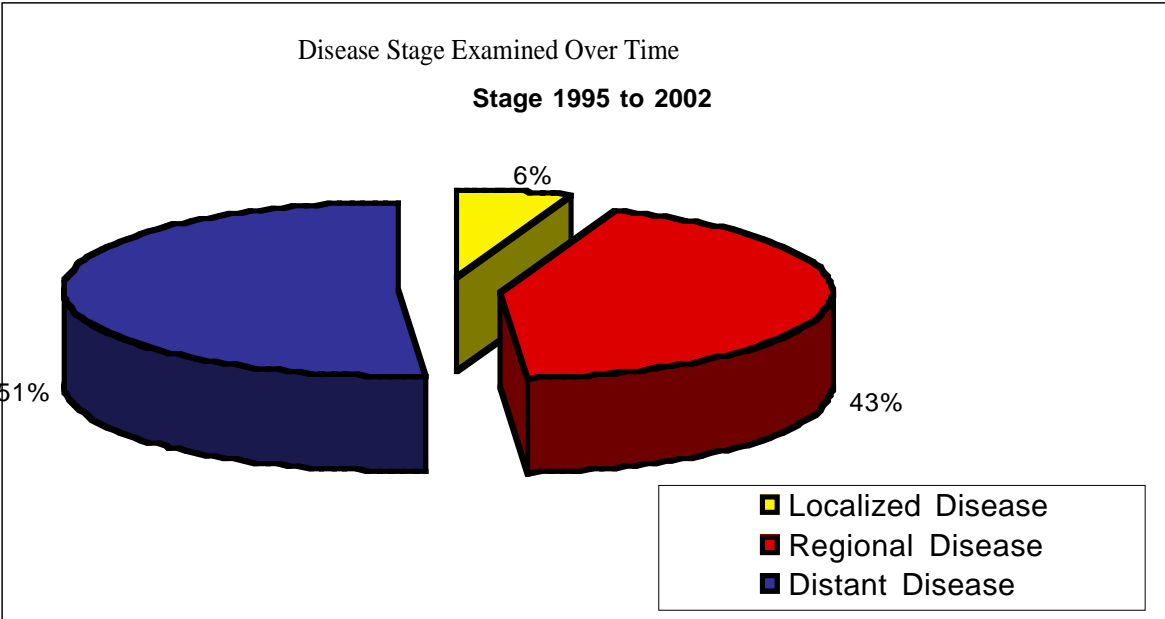
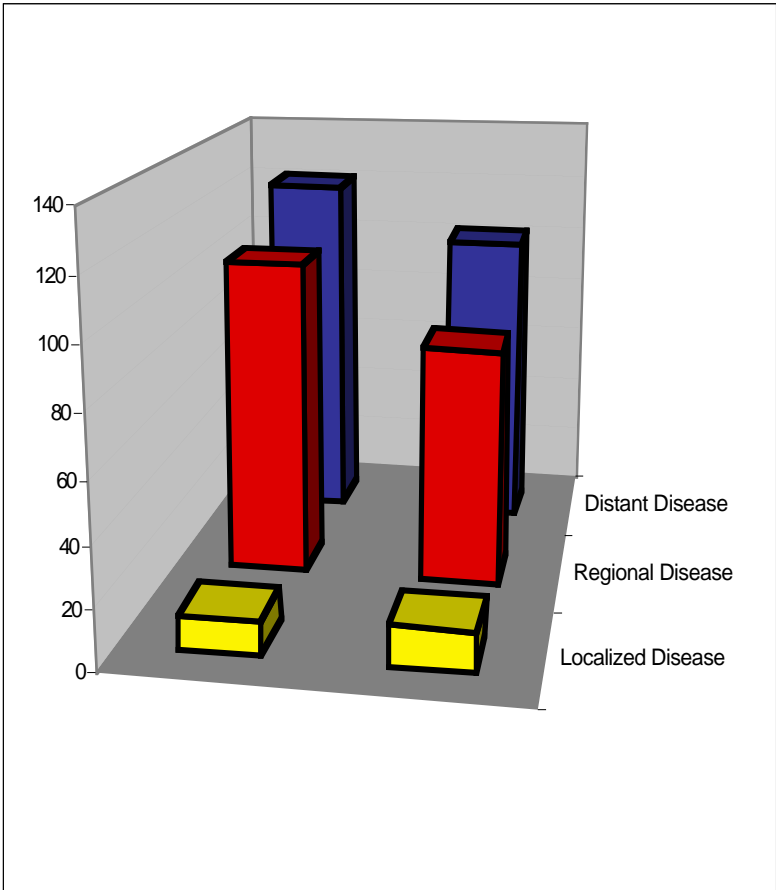


Figure 3



**Conclusions:**

Surgical resection of localized pancreatic cancer provides meaningful long-term survival greater than half of those selected for aggressive therapy. This can now be done with acceptable surgical morbidity and mortality as been demonstrated in pancreatic cancer centers around the country. Efforts at improving patient selection such as modern imaging and preoperative staging will ultimately improve on these survival statistics through better patient selection. This will eliminate patients from undergoing non-therapeutic laparotomies and incomplete resections, but will not impact on the disease as a whole. To have a meaningful impact on this devastating disease early detection and better adjuvant therapy need to be developed. At this point, we cannot detect any improvement in early detection or improved survival in the majority of patients with regional and distant disease.

- The data for the above comparisons came from the Holden Comprehensive Cancer Center Oncology Registry and the State Health Registry of Iowa.
- \*2002, American Cancer Society, Inc., Surveillance Research