Mission: Provide bridge money for investigators who are involved in promising research and need seed money to develop additional preliminary data.

Q & A with Daniel Brackett

Daniel Brackett
Professor & Director of Surgical Research
University of Oklahoma Health Sciences Center

**Question: How many Oklahomans have or are diagnosed with pancreatic cancer each year?**
Brackett: In 2008 there were 406 diagnoses in Oklahoma. Nation-wide there are more than 100 diagnoses each day (37,680 in 2008). New cases have increased by more than 7,000 during the last three years.

**Question: How many die from it each year?**
Brackett: In 2008, 370 Oklahomans died from pancreatic cancer. Nation-wide 34,290 people died. This presents the most dismal “mortality to diagnosis ratio” of any cancer. Mortality has increased by approximately 3,000 during the last three years.

**Question: What is the mortality rate? Or expected lifespan of someone with disease?**
Brackett: The median survival is six months after diagnosis and the five-year survival rate is four percent.

**Question: Why is pancreatic cancer difficult to detect?**
Brackett: All symptoms are general and do not present themselves until late in the development of the disease. See symptoms below.

**Question: What are the symptoms of the cancer?**
Brackett: All symptoms are general and therefore adding to the difficulty of diagnosis.
- Gnawing Pain or Pressure Sensation when eating or at night
- Anorexia
- Heartburn
- Depression, Unexplained Anxiety, Feelings of Impending Doom
- Change in bowel habits
- Early satiety
- Loss of strength, weakness; debility
- Intolerance to foods, wine, tobacco
- Malaise
• Nausea or vomiting
• Thromboplebitis – new onset
• Jaundice
• Back pain

**Question: Why no blood testing or other early detection methods?**

Brackett: Development of detection methods is dependent on research and research is dependent on availability of funds. Even though pancreatic cancer is the fourth leading killer of all cancers, it is substantially underfunded compared to other types of cancer. However there is significant work going on in this area at OU Health Science Center, including a recently formed multidisciplinary "Early Detection / Biomarker Group" to bring focus to this area of research.

**Question: What are Oklahoma researchers studying, briefly. Is it related to prevention, early detection, treatment?**

Brackett: **DETECTION**

Proteomic profiling from sera is currently the methodology that appears to provide hope for a detection tool for early diagnosis of pancreatic cancer. The most promising work is underway at OUHSC by Dr. Jay Hanas. This data was published recently in the journal “Pancreas” demonstrating the capacity to distinguish pancreatic cancer patients from healthy controls.

Collaborative work led by Dr. Marie Hanigan is in progress focused on detection of changes in post-translational modifications of proteins in the sera that are associated with pancreatic cancer patients.

Our laboratory has work in progress evaluating the presence of identification of unique patterns of messenger RNA and noncoding RNA including microRNA in sera of pancreatic cancer patients and an animal model of pancreatic cancer permitting assay of sera during the development of pancreatic cancer.

Nuclear Magnetic Resonance Spectroscopy Analysis is being used under the direction of Dr. Yasvir Tesiram at OMRF to identify patterns unique to pancreatic cancer patient sera.

**TREATMENT**

Work on Identification of stem cells and manipulation of stem cell biology is underway in the labs of Drs. Courtney Houchen and Shri Anant.

Dr. Tom Pento is evaluating the application of fusion protein technology as a therapeutic strategy for pancreatic cancer.

Combined nanotubes and laser methodology for treatment of pancreatic cancer is being studied by Dr. Roger Harrison at the OU Norman campus.

Identification of gene expression profiles during the development of pancreatic cancer to provide molecular targets for diagnosis and therapy is under analysis in our laboratories.