EARLY DETECTION RESEARCH NETWORK STUDY IN PANCREATIC CANCER

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The best hope for the successful treatment of pancreatic cancer is to remove pre-cancerous changes in the organ before they become cancer. The early detection of a portion of pancreatic cancer precursors – cystic neoplasms of the pancreas – is possible through high-resolution CT or MRI imaging of the pancreas. The increased use of abdominal CT and MRI imaging has led to a higher rate of identifying pancreatic cysts, but it is not yet possible to accurately determine which cysts have high potential to become cancer and should be removed. New biomarkers that could make that determination would lead to more successful outcomes for patients with pancreatic cysts.

Our overall hypothesis is that specific proteins expressed by cysts with high malignant potential are different than proteins expressed by cysts with low malignant potential. If we can measure these proteins, the molecules would be accurate biomarkers for the diagnosis of these lesions.

Because the number of patients treated with pancreatic cancer at any one hospital is relatively low, multiple clinical sites will contribute to this EDRN study to create high quality sample sets. The technology we will use to make the measurements is built on a combination of glycoproteomics biomarker discovery methods and complementary antibody array methods for the precise profiling of multiple protein and glycan candidates. Through the characterization and testing of these different biomarkers, the performance of the best candidates will be refined and improved. Once this has been accomplished, the definitive double-blind validation studies will be performed to provide accurate assessments of biomarker performance. The success of this project will result in biomarkers to be validated in clinical settings; high-quality sample sets to be used in ongoing EDRN-associated discovery and validation studies; and an improved understanding of the molecular alterations associated with pancreatic cystic neoplasms.