Pancreatic Development Expert Finds Link Between Inflammation and Pancreatic Cancer

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Besides running the Diabetes Center as our Director, Matthias Hebrok, PhD, is one of the world's foremost experts on pancreatic development. Dr. Hebrok and his lab colleagues are studying how the insulin-producing pancreatic islets are formed during organogenesis and how their function is regulated in the mature pancreas. Ultimately, they hope to learn how changes in gene expression may allow islets to regenerate in individuals living with diabetes.

As is often the case in science, while studying one disease you often make a breakthrough discovery in another. Last month, Dr. Hebrok and his colleagues made headlines by linking the biological process of inflammation with the formation of pancreatic cancer. Recently published in the journal Cancer Cell, this study explains how two molecular signals produced in the pancreas during inflammation were key to the onset and development of pancreatic cancer. A protein called Stat3 helps to initiate the early stages of this cancer, while another protein called MMP7 appears to affect metastasis. By blocking these proteins in animal models, the number of potentially cancerous lesions were reduced and cancer metastasis diminished.

Pancreatic cancer is one of the deadliest forms of the disease, in large part because it is difficult to detect early. Dr. Hebrok's team also suspects that MMP7 may be a useful marker for staging the disease.