Comment From the Editor

Pancreatologists: An Endangered Species?

The pancreas was identified and named by the Greeks. Herophilus (335–280 BC), an anatomist and surgeon, first described it. Ruphos, an anatomist, gave the pancreas its name. The significance of the main duct was already recognized in the 17th century. In 1889, Fitz established pancreatitis as a disease entity. In 1922, Banting and Best obtained isletin and demonstrated the capacity of the substance to cause a dog to recover from diabetic coma. In 1927, Banting received the Nobel Prize in Medicine for this observation and shared the award with his colleague Best. In 1940, Whipple performed the first recorded 1-stage pancreaticoduodenectomy. In the 1950s, Palade started to study the secretory process in the guinea pig pancreas using cell fractionation and radioautography. This led to the characterization of the zymogen granules, the discovery of the segregation of secretory products in the cisternal space of the endoplasmic reticulum, and several findings on the synthesis and intracellular processing of proteins for export. Palade's pioneering research was recognized in 1974 when he shared the Nobel Prize in Medicine or Physiology with Claude and Rene de Duve for work on the structure and function of the internal components of cells. In 1956, Zollinger and Ellison described 2 patients with unusually severe peptic ulcer disease, owing to noninsulin-secreting tumors of the pancreatic islets. Subsequently, gastrin was isolated as the hormone responsible for this syndrome. In the early 1980s, a technology for generating lines of "transgenic mice" carrying cloned genes integrated into the mouse genome was demonstrated to be a tractable and reproducible method. In 1984, Palmiter and Brinster began using the elastase gene promoter to control expression of SV40 T-antigen in pancreatic acinar cells. Those mice reliably developed acinar cell (exocrine pancreatic) tumors in a heritable manner being one of the first "oncomice" generated.

The history of pancreatic research is rich in achievements, not only for pancreatologists but also established paradigms in basic concepts in endocrinology, cell biology, and mouse genetics. Although the importance of the endocrine pancreas and diabetes is increasingly recognized and attracts researchers spanning from immunology to stem cell biology, pancreatologists working on the exocrine pancreas are an endangered species. Where do we stand today and what do we face in the future? In contrast with diabetes, there are no specific drugs for treating acute or chronic pancreatitis. Therefore, pharmaceutical companies tend to avoid the exocrine pancreas. No prospective clinical trial has been initiated by these companies lately. Pancreatic cancer is still among the most devastating diseases. Early detection of resectable cancer will not solve the problem. Although numerous phase II trials of systemic disease have shown promising results, phase III trials have been negative. In fact, pancreatic cancer is the number 1 killer in phase III trials.

The number of academic laboratories dedicated to work on pancreatic physiology and pancreatic disease is decreasing. It is difficult to recruit postdoctorate fellows. How many young investigators start to establish a career in pancreatology? It is difficult to retain young people within this field. The size of the meetings is small compared with other fields.

It is obvious that the pancreas poses difficulty. All of us had initial trouble isolating high-quality RNA. One cannot easily biopsy the pancreas. Tumor specimens contain a lot of stromal tissue, which requires microdissection. Therefore, "-omics" cannot be applied easily to the pancreas. But is this a challenge rather than a problem? Can we hope for a renaissance of pancreatic research?

The initiative has to come from academia. The only chance for achievement is better interaction of groups working in the field. "Pancreas 2000—A New Concept for Education and Development in Pancreatology"[1] is a very successful initiative for the generation of a pancreatic network in Europe and thus a very good base for pancreatic research. Such networks would be able to initiate prospective trials with sufficient statistical power. Furthermore, all disciplines—cell and developmental biology, genetics, pathology, gastroenterology, radiology, and surgery—involved in pancreatic research must cooperate more closely because translation is specifically difficult in this field. A recovery of pancreatic research depends on major achievements within the field in a reasonable time frame.

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Reference

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