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Chronic Pancreatitis, Type 3c Diabetes, and Pancreatic Cancer Risk

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About half of all patients with chronic pancreatitis (CP) develop diabetes mellitus (DM) due to the loss of islet cell mass, not just beta cells as in Type 1 DM (T1DM), or due to insulin resistance, as in Type 2 DM (T2DM). Patients with DM from loss of islets due to pancreatic disease or resection are diagnosed with pancreatogenic or Type 3c DM (T3cDM). Patients with T3cDM also lose counter-regulatory hormones, such as glucagon and pancreatic polypeptide, and experience maldigestion associated with pancreatic exocrine insufficiency. Patients with T3cDM are therefore more susceptible to hypoglycemia and a mismatch (asynchrony) between food ingestion and nutrient absorption. At the same time, the use of incretin therapy is likely useless, since maldigestion leads to the release of higher levels of hind gut hormones, including GLP1. Thus, T3cDM caused by CP or destruction of the islets involves a special class of potential risks and comorbidity that may be overlooked if the CP has not been diagnosed. Further, because CP is also associated with pancreatic ductal adenocarcinoma, better classification of patients with DM is needed to determine if PDAC is associated with DM or with undetected CP that gave rise to T3cDM that was previously misclassified as T1DM to T2DM.