Endocrine precursor lesions of gastroenteropancreatic neuroendocrine tumors.

Abstract:
This review focuses on precursor lesions of gastrointestinal and pancreatic neuroendocrine tumors (GEP-NETs). There are three conditions that are associated with hyperplastic changes in endocrine cells preceding GEP-NETs: autoimmune chronic atrophic gastritis or multiple endocrine neoplasia type 1 (MEN1) with gastric enterochromaffin-like (ECL) cell hyperplasia; MEN1 with gastrin and somatostatin cell hyperplasia in the duodenum and glucagon cell hyperplasia in the islets of the pancreas; and inflammatory bowel disease with endocrine cell hyperplasia in the colon. In gastric ECL cell hyperplasia, it is assumed that hypergastrinemia promotes the growth of the ECL cells of the corpus mucosa and leads to hyperplasia and neoplasia. In the duodenum and the pancreas, the MEN1-associated germline mutation of the menin gene obviously causes hyperplasia of the gastrin and somatostatin cells (duodenum) and the glucagon cells (pancreas), resulting in multifocal development of tumors. These tumors show allelic deletion of the MEN1 gene, whereas the precursor lesions retain their heterozygosity. The endocrine cell hyperplasia in the colon described in inflammatory bowel disease has neither a genetic nor a definite hormonal background.