

# Invasive Ductal Carcinoma of the Pancreas, Measuring 2cm or Less in Greatest Dimension : A Clinicopathologic Study with an Analysis of Aberrant Chromosomal Regions Using CGH

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**Abstract :** We examined 14 cases of invasive ductal carcinoma ( IDC ) of the pancreas measuring  $\leq 2$ cm in greatest dimension (pTS1) to clarify their clinicopathologic features, and analyzed chromosomal genetic alterations using comparative genomic hybridization (CGH). Patients' ages ranged from 51–80 years (average 64.8 years, median 66 years), with eight males and six females. A majority of eight cases showed epigastralgia or back pain, but four cases were asymptomatic. Eight tumors arose in the body and six in the head of the pancreas. For histological grades of tubular adenocarcinoma, there were five well differentiated, four moderately differentiated, and five poorly differentiated types. Nodal metastasis was found in five cases. Even in pTS1–IDC of the pancreas, the stage of cancer progression was highly advanced with seven cases (50.0%) in Stage II or over. For the prognosis, five of the 14 patients died, of which four (28.6%) resulted from hepatic metastasis. For CGH analysis, we detected highly frequent losses on chromosome arms 1p, 9q, 12q, 16p, 16q, 17p, 17q, 19p, 19q, 20q, and 22q, and frequent gains on chromosome arms 4q, 6q, and Xq. Losses of 1p34–pter, 17p12–pter, and 22q12 were observed in five cases suffering a nodal metastasis. Losses of 1p35–pter and 9q33–qter were detected in four cases that died of postoperative liver metastasis. These altered chromosomal regions may contain the genes involved in the carcinogenesis, progression, and metastatic properties of pTS1–IDC of the pancreas.

**Key wards :** Pancreas, Invasive ductal carcinoma, pTS1, CGH