Complete screening of the CFTR gene in idiopathic chronic pancreatitis

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**Introduction:** Chronic pancreatitis (CP) is an inflammatory disease characterized by a progressive and irreversible loss of exocrine and endocrine pancreatic function. In developed countries, an excessive consumption of alcohol explain the majority of the CP cases, followed by “idiopathic” causes which account for about 20% of the cases. In 1998, the CFTR gene has been suggested to play a role in idiopathic chronic pancreatitis (ICP). Moreover, some CFTR mutations have been shown to selectively disrupt bicarbonate conductance and therefore selectively target the pancreas for CFTR-associated injury. In order to determine whether or not different types of CFTR mutations affect the risk of developing CP, we recruited 244 patients with ICP who have developed the disease before or at the age of 20 years.

**Methods:** The 27 exons and all the intron/exon junctions of the CFTR gene were screened by denaturing high-performance liquid chromatography (DHPLC) technique or by High-resolution melting analysis. The intron 8 poly (T) variants were analyzed by using a fluorescence multiplex PCR. Finally, quantitative fluorescent multiplex PCR (QFM-PCR) was performed to screen genomic rearrangements.

**Results:** About 30% of ICP patients are carrying at least one mutation of the CFTR gene including the T5 allele in intron 8. This frequency appears about 10-fold higher that the expected carrier rate in French population. Finally, it appears that about 10% of ICP patients are compound heterozygotes (mild/mild or severe/mild mutations).

**Conclusion:** These data show that not only compound heterozygosity, but also CF carrier status for different types of CFTR mutations, increase the risk of developing CP. So, the idiopathic CP could be classified as so called CFTR related disease.