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Effect of Taurine on Acinar Cell Apoptosis and Pancreatic Fibrosis in Dibutyltin Dichloride-induced Chronic Pancreatitis.

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Source

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Abstract

The relationship between pancreatic fibrosis and apoptosis of pancreatic acinar cells has not been fully elucidated. We reported that taurine had an anti-fibrotic effect in a dibutyltin dichloride (DBTC)-chronic pancreatitis model. However, the effect of taurine on apoptosis of pancreatic acinar cells is still unclear. Therefore, we examined apoptosis in DBTC-chronic pancreatitis and in the AR42J pancreatic acinar cell line with/without taurine. Pancreatic fibrosis was induced by a single administration of DBTC. Rats were fed a taurine-containing diet or a normal diet and were sacrificed at day 5. The AR42J pancreatic acinar cell line was incubated with/without DBTC with taurine chloramines. Apoptosis was determined by using terminal deoxynucleotidyl transferase-mediated dUTP-digoxigenin nick end labeling (TUNEL) assay. The expression of Bad and Bcl-2 proteins in the AR42J cells lysates was detected by Western blot analysis. The apoptotic index of pancreatic acinar cells in DBTC-administered rats was significantly increased. Taurine treatment inhibited pancreatic fibrosis and apoptosis of acinar cells induced by DBTC. The number of TUNEL-positive cells in the AR42J pancreatic acinar cell lines was significantly increased by the addition of DBTC. Incubation with taurine chloramines ameliorated these changes. In conclusion, taurine inhibits apoptosis of pancreatic acinar cells and pancreatitis in experimental chronic pancreatitis.

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