

Abstract

OBJECTIVES:

Assuming that a high flux of carbohydrate is strictly connected with lipid synthesis in neoplastic cells, one can hypothesize that the activity of citrate synthase, which plays an important role in glucose to lipid conversion, is enhanced in pancreatic cancer. The aim of the present study was to verify this hypothesis.

METHODS:

The activity of citrate synthase (as well as lactate and glucose 6-phosphate dehydrogenases) was measured using tissue extract prepared from specimens (pancreatic cancer and control specimens taken from the adjacent pancreatic normal tissue) obtained from 24 patients with ductal carcinoma who underwent pancreateoduodenectomy or total pancreatectomy.

RESULTS:

The average of citrate synthase activity in human pancreatic ductal carcinoma is significantly higher comparing with adjacent nonneoplastic tissue: 40.2 +/- 27.2 and 18.3 +/- 13.6 nmole/min/mg protein, respectively (P = 0.001). The lactate dehydrogenase and glucose 6-phosphate dehydrogenase activity in human pancreatic ductal carcinoma were also higher than in adjacent nonneoplastic tissues.

CONCLUSION:

It is likely that enhanced citrate synthase activity contributes to the conversion of glucose to lipids in pancreatic cancer providing substrate for membrane lipids synthesis.

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