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Peculiarities of pancreatic dysfunction in patients with chronic obstructive pulmonary disease

Introduction

Comorbidity of chronic obstructive pulmonary disease (COPD) and chronic pancreatitis (CP) leads to a gradual decrease in the exocrine and endocrine function of pancreas (P) and grounds the possibility for insulin resistance and pancreatogenic diabetes mellitus development. That is why early detection of pancreatic dysfunctions in patients with COPD and their correction are very important.

Purpose

Evaluation of pancreatic dysfunctions frequency and character in patients with COPD.

Materials and methods

44 patients with mild to moderate COPD were examined. The age of patients ranged from 43 to 71 years. The pancreatic function was assessed by the dynamics of alpha-amylase (*amI*) levels in urine at fixed intervals of digestive cycle - on an empty stomach and 30-60 minutes after standard test meals. The debit-levels of *amI* were calculated.

Results

The predominance of pancreatic hyposalivation and changes in the dynamics of amylasuria during the digestive cycle were characteristic. In 23.8% of patients, there was a decrease in the concentrations of urinary *amI* in all periods of digestion, in 59.2% - only in the basal period, in 57.1 and 58.5% - after meals. The secretory response of P to the food stimulus was also low. The higher frequency of low *amI* concentrations compared with its debit levels, may indicate the functional character of changes. It must be noted that progression of bronchial obstruction and clinical severity of COPD was accompanied with a significant decrease in the functional response of P to food stimuli. Metabolic disorders in the form of overweight and obesity were associated with increased secretory activity of P. A relatively high frequency of moderately elevated blood glucose was also detected in 36.4% of respondents, without diagnosed diabetes.

Conclusions

A clear tendency of pancreatic hyposalivation was found in COPD patients. It depended on the severity of bronchial obstruction and clinical severity of the disease and was associated with a high frequency of moderately elevated blood glucose in the third of respondents. Therefore, common pathogenic aspects of pancreatic dysfunctions and COPD, screening of pancreatic secretion is appropriate even in patients with mild disease for early correction of identified disorders and prevention of insulin resistance and pancreatic diabetic diabetes development.

Reference