

# Assessment of the colon microbiocenosis at chronic obstructive pulmonary disease in comorbidity with chronic pancreatitis

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**Conflict of interests:** none

**BACKGROUND.** The comorbid course of chronic obstructive pulmonary disease (COPD) and chronic pancreatitis (CP) leads to the formation of numerous metabolic disorders in patients, which negatively affect their trophological status. In the presence of dysbiotic changes, both due to CP and COPD, the enzymatic activity of the colon microflora (CMF) becomes one of the pathogenetic factors of impaired absorption, diarrhea, loss of nutrients, attenuation of nonspecific factors of body protection.

**OBJECTIVE.** The purpose of the study was to evaluate the status of the colon microbiocenosis (CMB) in patients with comorbidity of CP and COPD, as well as its relationship with the parameters of endotoxycosis, the system of prooxidants and antioxidants.

**MATERIALS AND METHODS.** We examined 47 out-patients with CP with enteropancreatic syndrome after 10-14 days of treatment in the out-patient department. Concomitant COPD was diagnosed in 27 people (15 men and 12 women), among them 12 – COPD I and 15 – COPD II.

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## ОРИГІНАЛЬНЕ ДОСЛІДЖЕННЯ

**RESULTS AND DISCUSSION.** In the bacteriological study of co-culture of patients with comorbidity of CP and COPD showed a significant decrease in all participants in comparison with the control group of obligate bifidobacteria and lactobacilli content – changes in the quantitative and qualitative composition of *Escherichia coli* due to a reliable reduction of the normal power and an increase in forms with altered enzymatic properties, including lactose-negative ones, and an increase in the number of conditionally pathogenic microorganisms – CPM (entero-, cytobacter, etc.) and pathogenic flora (*Staphylococcus aureus*, *Candida fungi*, *hemolytic microorganisms*). The correlation between malonic aldehyde, ceruloplasmin, endotoxigenic markers and total *E. coli* and CPM were directly moderate (0.421-0.622;  $p < 0.05$ ), indicating a significant predictor of decrease in obligate amount and increase the number of pathogenic CMF in the deepening of endotoxigenic and the activation of lipid peroxidation in dysbiotic changes in the comorbid course of CP and COPD, which should be considered in the formation of complex treatment of such patients.

**CONCLUSIONS.** The presence of concomitant COPD contributed to the deepening of the CMB disorders and the formation of colon dysbiosis (CDB) in patients with CP. There were more frequent CDB of different depth in patients with the indicated comorbidity compared to persons without COPD (87.8 vs 65.0 %, respectively) and less frequent normal CMB (22.2 vs 35.0 %).

**KEY WORDS:** chronic pancreatitis, chronic obstructive pulmonary disease, colon microbiocenosis, colon dysbiosis, endogenous intoxication.