

The main directions of research aimed at identifying violations of proteolytic and fibrinolytic activity in patients with peptic ulcer of stomach and duodenum in the combination or in the absence of arterial hypertension and diabetes mellitus type 2. In the last years revealed the influence of *H. pylori* strains and their combination (*cagA*<sup>+</sup> *vacA*<sup>+</sup>, *cagA*<sup>+</sup> *vacA*<sup>-</sup>, *cagA*<sup>-</sup> *vacA*<sup>+</sup>, *cagA*<sup>-</sup> *vacA*<sup>-</sup>) on the course, diagnosis and treatment of peptic ulcer with/without comorbidity. In the group of patients with peptic ulcer of stomach and duodenal ulcers in combination with arterial hypertension and diabetes mellitus type 2 strains identified *cagA*<sup>+</sup> *vacA*<sup>+</sup> in 14 patients (45,16%), *cagA*<sup>+</sup> *vacA*<sup>-</sup> – in 4 patients (12,9%), in the *cagA*<sup>-</sup> *vacA*<sup>+</sup> – 13 people (around 41,43%) and the group of patients with peptic ulcer of stomach and duodenum respectively in 4 patients (13,79%), 8 (27,59%), 16 (55,17%).

**Objective:** to investigate the effect of *H. pylori* strains on the system state of proteolysis and fibrinolysis in case of peptic ulcer of stomach and duodenal ulcers in combination with arterial hypertension and diabetes mellitus type 2.

### **Materials and methods**

There were 70 people (29 patients with PGS and duodenum (group 1), 31 patients with PWS and duodenum in combination with hypertension and diabetes 2 (group 2), 10 practically healthy persons (PZO) (group 3)). All patients received basic therapy (esomeprazole 40 mg, 1 capsule. 2 p/d, amoxicillin 1000mg 1 tab. 2 p/d, clarithromycin 500 mg, 1 tab. 2 p/d, the drug bismuth 350 mg, 1 tab. 2 p/etc). To improve the eradication of *H. pylori* was applied probiotics (Lactobacterium, Bifidobacterium).

### **Results**

The effect of *cagA*<sup>+</sup> *vacA*<sup>+</sup>, *cagA*<sup>+</sup> *vacA*<sup>-</sup>, *cagA*<sup>-</sup> *vacA*<sup>+</sup> in the group of patients with peptic ulcer of stomach and duodenum with arterial hypertension and diabetes mellitus type 2 accompanied by a violation of proteolytic and fibrinolytic activity reduced lysis of albumin (in 45,56% ( $p < 0,05$ ), in 54,07% ( $p < 0,05$ ), in 35,93% ( $p < 0,05$ ), lysis azocasein (in 28,04% ( $p < 0,05$ ), in 37,38% ( $p < 0,05$ ), in 20,56% ( $p < 0,05$ ), increased lysis of asokoro (in 52,78% ( $p < 0,05$ ), in 59,72%

( $p < 0,05$ ), in 66,67% ( $p < 0,05$ ), in 56,94% ( $p < 0,05$ )) and reducing SFA (in 45,78% ( $p < 0,01$ ), in 49,40% ( $p < 0,01$ ), in 51,57% ( $p < 0,05$ ), NFA (in 35,29% ( $p < 0,05$ ), in 2,64 ( $p < 0,01$ ), increase FFA ( in 2,65 ( $p < 0,01$ ), in 2,63 ( $p < 0,01$ ), in 2,71 ( $p < 0,05$ ), that is hard to move. A similar situation is observed in the group of patients with peptic ulcer of stomach and duodenum. After treatment the two groups had improved. In particular, in the group of patients with peptic ulcer of the stomach and intestine dvenadtsatyi in combination with arterial hypertension and diabetes mellitus type 2 is observed: increased lysis of albumin (in 1,42 ( $p < 0,05$ ), in 1,24 ( $p < 0,05$ ), in 1,21 ( $p < 0,05$ )), lysis azocasein (in 1,16 ( $p < 0,05$ ), in 1,15 ( $p < 0,05$ ), in 1,15 ( $p < 0,05$ )), increased lysis of asokoro (in 9% i in 13%) and increase SFA (in 1,25 ( $p < 0,01$ ), in 1,14 ( $p < 0,05$ ), in 1,2 ( $p < 0,05$ ), NFA (in 1,14 ( $p < 0,05$ ), in 1,13, in 1,13), reducing FFA (in 11,36%, in 11,45%, in 17,54%).

## **Discussion**

In the group of patients with peptic ulcer of stomach and duodenum with arterial hypertension and diabetes mellitus type 2 with the presence of vacA strains of the garden revealed a complicated disease associated with impaired proteolytic and fibrinolytic activity and less favourable influence of antihelicobacter therapy with the use of probiotics, which is associated with the increased pathogenicity of strains [9,10]. This relationship is associated with the presence of a protein of 128 kDa CagA and vacA alleles of the composition (s1, s2, m1, m2) in the future - with advanced inflammatory response and the risk of developing atrophic gastritis[11,12,13], gastric ulcer [3,4]. Remain less virulent disease with the presence of one of the strains (cagA+ vacA+, cagA+ vacA -, cagA- vacA+) and in their absence. When PUS and duodenum with hypertension and type 2 DM, there is a tendency to hypercoagulability, manifested by increased levels of fibrinogen, increased the total fibrinolytic activity (SFA), refermentation fibrinolytic activity (NFA), enzymatic fibrinolytic activity (FFA). [5,6,7]. However, violations of the morphofunctional properties of red blood cells, which is accompanied by the development of the syndrome of hypercoagulability and is characterized by a shortening of the temporal characteristics of blood clotting with the decline in SFA

(through the FFA) and increase in NFA (due to the presence of fibrinolytic properties of oxidized products, which in large quantities are produced in the presence of arterial hypertension and diabetes mellitus type 2 [8,10].

### **Conclusions**

The presence of concomitant pathology and *H. pylori* strains and their combination (*cagA*<sup>+</sup> *vacA*<sup>+</sup>, *cagA*<sup>+</sup> *vacA*<sup>-</sup>, *cagA*<sup>-</sup> *vacA*<sup>+</sup>) complicates diagnostic criteria and for patients of slahm changes of fibrinolytic activity (decrease of total enzymatic activity ( $p \leq 0.05$ ), refermentation activity ( $p \leq 0.05$ ), increased enzymatic fibrinolytic activity ( $p \leq 0.05$ )) and proteolytic activity (decreased lysis of albumin ( $p \leq 0.05$ ), lysis azocasein ( $p \leq 0.05$ ), increasing the lysis of asokoro ( $p \leq 0.05$ )). Use in the treatment of basic therapy (*H. pylori*) and probiotics (*Lactobacterium*, *Bifidobacterium*) is accompanied by improvement of fibrinolytic and proteolytic activity and improves the patient's condition.