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Accepted Abstracts

Abstract no.: P10.20

BREATH AMMONIUM TEST IN DIAGNOSTIC OF *HELICOBACTER PYLORI* INFECTION

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Background: A breath test with C13 urea is not common in use in Russian gastroenterology practice. It is important to make an alternative breath tests to diagnose *Helicobacter pylori* infection. The aim: to compare results of different methods of diagnostics of *H. pylori* infection with estimation of efficacy of breath ammonium test.

Materials and Methods: Forty-two patients with dyspepsia were under supervision. To all patients the gastroscopy with a biopsy from stomach body and antrum and a complex of diagnostic methods for infection verification were made. Four diagnostic methods were used: breath ammonium test ("Helic-test", Association of Medicine and Analytic, St-Petersburg), histological method (by dr. Antonov P.V., St-Petersburg), polymerase chain reaction (PCR) with detection of *ureC, ureI, cagA* genes (Laboratory "Diagnostic", St-Petersburg), the breath test with C13 urea (the analysis of samples of exhaled air was made in Italy in "Spectra-2000" laboratory). Samples of exhaled air were transported to Italy one time a month. Results

By "Helic-test" the positive result was received in 50% of patients. By histological method *H. pylori* was defined in 48% and by PCR – in 50% of patients. Unexpected there were results of breath urease test with C13 urea: 26% of positive results.

Conclusions: Breath ammonium test shows a high efficacy in comparison to histological method and PCR and can be recommended to use in diagnostic of *H. pylori* infection. Low percentage of positive results of breath urease test with C13 urea is probably connected with long process of transportation. Therefore, it is necessary to avoid long storage of samples.

Abstract no.: P10.21

A NOVEL LATERAL FLOW TEST STRIP (LFTS) FOR THE DETECTION OF *HELICOBACTER PYLORI* INFECTION

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The diagnoses of *Helicobacter pylori* infection is done invasively by endoscopy. Non-invasive tests such as the ELISA and LFTS can help in diagnoses by detecting serum antibodies. *H. pylori* cagA gene an important virulent factor encodes an immunodominant CagA protein. The available kits generally uses bacterial lysate for the detection of such factor thus the demand for a pure recombinant CagA (rCagA) protein will have an impact on the detection processes. Our aim is to develop a LFTS using rCagA and monoclonal antibodies for the detection of anti-CagA antibodies in patient sera. The cagA 5′ conserved region of the gene was cloned and a rCagA of 67 kDa was obtained. The rCagA was then conjugated to gold nanoparticles and placed onto the conjugate pad. A non-conjugated rCagA was immobilized on the test line. Anti-CagA monoclonal antibodies were immobilized on the control line. The addition of a sample drop onto the sample pad lead to a lateral flow of the sample fluid containing anti-*H. pylori* antibodies toward the conjugate pad where it bound to the antigen coated on gold particles. The complex then flow to the test line where it bound to the immobilized antigen and resulted in a red color line. The flow of the sample fluid continued toward the control line where the remaining antigen coated gold particles bound to the immobilized anti-CagA monoclonal antibodies and gave a red color line. This test shows a very promising tool that aid in the diagnoses of *H. pylori* infection.

P15 Probiotics

Abstract no.: P15.01

NUTRACEUTICAL TREATMENT AGAINST *HELICOBACTER PYLORI* INFECTION?

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Helicobacter pylori induces gastric mucosa inflammation leading to gastritis and peptic ulcer disease. A wide variety of nutraceuticals are known to possess anti-inflammatory properties.

Aim: To study the effect of two nutraceuticals (curcumin and synbiotic 2000®) in prevention of gastric mucosa inflammation on chronic *H. pylori* experimental infection.

Materials and Methods: Sixty C57BL/6 mice were inoculated with SS1 – *H. pylori* strain by gavage. After infection confirmation by ^{13}C-urea breath test mice where then treated with either PBS, curcumin (10 mg/mouse) or synbiotic 2000® (50 mg/mouse), three times per week. Five mice from each group were euthanized at week 6, 18, 27 and 57. Gastric samples were removed for histology (H-E) and immunohistochemistry analysis.

Results: All the 60 mice were Hp positive by ^{13}C-urea breath test and immunohistochemistry. In the PBS group the gastric mucosa inflammation was present in 40% of mice at week 6 and 18, in 75% at week 27 and in 100% of mice at week 57. In the curcumin group there was no mucosa inflammation at week 6 and 18. At week 27, 55% of mice presented mucosa inflammation and at week 57, 57% of mice had mucosa inflammation. In the synbiotic group gastric mucosa inflammation was also not present at week 6 and 18. At week 27 and 57 the percentage of mice with gastric mucosa inflammation was 32% and 71% respectively. The treatment with either curcumin or synbiotic significantly decreased the gastric mucosa inflammation at all time-points.

Conclusions: These results suggest the therapeutic usefulness of both nutraceuticals in reducing the gastric inflammation during chronic experimental mice *H. pylori* infection.

The supplementation of diet in humans with curcumin or synbiotic 2000® may be a novel therapeutic approach against gastric inflammation induced by Hp infection.

Abstract no.: P15.02

ADDITION OF DIFFERENT PROBIOTICS TO THE STANDARD ERADICATION THERAPY OF *HELICOBACTER PYLORI* INFECTION: COMPARATIVE ANALYSIS OF EFFICACY

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Aim: To analyze the efficacy of addition of different probiotics to the standard eradication therapy in patients infected with *H. pylori*.

Methods: One hundred and fifteen patients with *H. pylori* were divided into four groups. All patients received standard eradication therapy (omeprasol 20 mg, amoxicillin 1000 mg, claritromicin 500 mg twice a day during 7 days). 1st group (23 patients) in addition received *Enterococcus faecium strain L-3* three grages three times a day during 1 month. 2nd group (32 patients) – received *Bacillus subtilis* contain probiotic 2 capsules two times a day during 1 month. 3rd group (40 patients) – probiotic with *Bifidobacterium bifidum* MF 20/5 10^7, *Bifidobacterium longum* SP 07/3 10^7, *Lactobacillus gasseri* PA 16/8 10^7 one tablet once a day during 1 month. 4th group (20 patients) received only standard eradication therapy. Detection of *H. pylori* was made by rapid urease test, gistological method, polymerase chain reaction to all patients before treatment and 1.5–2 month after the end of therapy. Bacteriological analysis of excrements was made to evaluate changes in colon microflora. Statistical estimation was performed in Statistica 6.0 for Windows XP. Efficacy of *H. pylori* eradication was estimated by intention to treat criteria.

Results: Eradication rate in 1st group was 75% ($p < 0.05$), in 2nd group – 72% ($p < 0.05$), in 3rd group – 82% ($p < 0.01$ in comparison to 4th group) and in 4th group – 60%. In 4th group were detected increase of opportunistic bacteria in colon and decrease of *Bifidobacteria* and *Lactobacilli*. Disorders in colon microflora content were no found in other groups.

Conclusion: Usage only a standard eradication therapy is not quite effective. Addition of probiotics to the standard treatment significantly improves eradication rate and safety of treatment.

Abstract no.: P15.03

FLOROLACT DURING ANTIHELICOBACTER THERAPY

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Purpose: To evaluate the impact of Florolakt on eradication *Helicobacter pylori* (H.p.) and adverse events during standard sequential antihelicobacter (anti-H.p.) therapy.

Materials: In first group (n = 73) patients with duodenal ulcer or gastric ulcer, chronic gastroduodenitis associated with H.p. received the standard version of sequential therapy: pantoprazole (sanpraz), amoxicillin (flemoxin), clarithromycin (fromilid), tinidazole plus additionally prebiotic florolakt 1 envelope × 2 times a day. Patients in second group (n = 43) received only the same anti-H.p. regime without florolakt. It was evaluated eradication H.p. (per protocolum – PP and intention to treat – ITT) and adverse events related to the anti-H.p. regime. Prebiotic Florolact contains fructooligosaccharides, gum arabic, and lactitol, which have a synergistic prebiotic effect.

Results: In first group using florolakt eradication H.p. was observed in 90% (ITT) and 94% (PP). In second group during anti-H.p. regime without florolakt eradication H.p. Seventy-nine percent ITT ($p > 0.05$) and 87% PP ($p > 0.05$). The emergence of antibiotic-associated diarrhea observed respectively in first group 2.7% against 13.9% in second group (ITT) – ($p < 0.05$) and respectively in 2.9% versus 16.2 % ($p < 0.05$) – PP. Other adverse events (nausea, abdominal discomfort, changes in taste) in first group with adjuvant therapy by florolakt were observed in 16% versus 26% in second group, who were not taking florolakt ($p < 0.05$). Total adverse events in second group were met more than two times higher than in first group.

Conclusions: The introduction of prebiotic florolakt significantly reduces the incidence of adverse events and increased the eradication *H.pylori*.

Abstract no.: P15.04

CAN PROBIOTICS INCREASE THE SUCCESSFUL ERADICATION OF *HELICOBACTER PYLORI* INFECTION IN KOREA?

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Background/Aims: This study was performed to evaluate whether the addition of probiotics to proton pump inhibitor-based triple therapy increases the likelihood of successful *Helicobacter pylori* (*H. pylori*) eradication.

Methods: We retrospectively reviewed 218 patients who undertaken *H. pylori* eradication therapy between March 2010 and February 2012. These patients were classified three groups, (A) PPI-based 7-day triple therapy, (B) the same triple therapy plus probiotics for 7-day, and (C) the same triple therapy plus probiotics for 14-day. We compared eradication rates of three group. ^{13}C-urea breath test was performed at 4 weeks after completion of the therapy to confirm the successful eradication.

Results: The total eradication rate of these patients was 71.1% (155/218). By per protocol analysis, *H. pylori* eradication rates for the groups A, B, and C were 64.4% (67/104), 80.8% (42/52), and 74.2% (46/62) respectively ($p = 0.086$). The eradication rate of the group B was significantly higher than that of the group A ($p = 0.036$). In subgroup analysis, *H .pylori* eradication rate of the probiotics group (B and C) was 77.2% (88/114), which was significantly higher than that of the non-probiotics group (A) ($p = 0.038$). Regardless of adding probiotics, the eradication rate of group C which was treated for 14 days was not significantly higher than that of group A and B which was treated for 7 days (74.2% vs 69.9%, $p = 0.525$).

Conclusions: The addition of probiotics to conventional triple therapy increases the eradication rate of *H. pylori* in this study, regardless of duration of eradication treatment.