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**TOPICAL ISSUES OF NEW MEDICINES  
DEVELOPMENT**

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**Topical issues of new medicines development: матеріали XXVI Міжнародної науково-практичної конференції молодих учених та студентів (10-12 квіт. 2019 р., м. Харків).** – Харків: НФаУ, 2019. – 504 с.

Збірка містить матеріали науково-практичної конференції молодих учених та студентів «Topical issues of new medicines development», які згруповано за провідними напрямками науково-дослідної та навчальної роботи Національного фармацевтичного університету. Розглянуто теоретичні та практичні аспекти синтезу біологічно активних сполук і створення на їх основі лікарських субстанцій; стандартизації ліків, фармацевтичного та хіміко-технологічного аналізу; вивчення рослинної сировини та створення фітопрепаратів; сучасної технології ліків та екстемпоральної рецептури; біотехнології у фармації; досягнень сучасної фармацевтичної мікробіології та імунології; доклінічних досліджень нових лікарських засобів; фармацевтичної опіки рецептурних та безрецептурних лікарських препаратів; доказової медицини; сучасної фармакотерапії, соціально-економічних досліджень у фармації, маркетингового менеджменту та фармакоекономіки на етапах створення, реалізації та використання лікарських засобів; управління якістю у галузі створення, виробництва й обігу лікарських засобів; інформаційних технологій у фармації та медицині; основ педагогіки та психології; суспільствознавства; філології.

Для широкого кола наукових і практичних працівників фармації та медицини.

Book of Abstracts includes materials of Scientific and Practical Conference of Young Scientists and Students «Topical issues of new medicines development». Materials are grouped according to the main directions of scientific, research and educational work of the National University of Pharmacy. Theoretical and practical aspects of the synthesis of biologically active compounds and development of medicinal substances on their basis; standardization of drugs, pharmaceutical and chemical-technological analysis, the study of raw materials and herbal remedies development, modern drug technology and extemporal recipe; biotechnology in pharmacy, modern advances in pharmaceutical microbiology and immunology, clinical trials of new drugs, pharmaceutical care for prescription and OTC-drugs, evidence-based medicine, modern pharmacotherapy, socio-economic studies in pharmacy, marketing management and pharmacoconomics during the development, implementation and use of drugs, quality management in development, production and trafficking of drugs; information technologies in pharmacy and medicine; basics of pedagogy and psychology; social science; philology are presented.

For a wide audience of scientists and pharmaceutical and medicinal employees.

socioeconomic conditions and accordingly, this infection is more common in developing countries than in developed countries such as the United States. Regardless, it has been estimated that 30–40% of the U.S. population is infected with *H. pylori*.

**Aim.** The aim of the report is to inform about the main symptoms and causes of chronic gastritis and actual pharmacotherapy.

**Materials and methods.** Most common symptoms of *H. pylori* associated gastritis are: poor appetite, abdominal pain with gnawing or burning sensation, pain is often made worse with empty stomach, night time pain is common, nausea, vomiting, bloating, heartburn, burping, weight loss, indigestion. Pharmacotherapy of *H. pylori*: first line – triple therapy: sequential therapy consisting of a proton pump inhibitor (omeprazole 20 mg bid) and amoxicillin 1000 mg bid for 5–7 days followed by a proton pump inhibitor, clarithromycin 500 mg bid, and a nitroimidazole 500 mg bid for 5–7 days. Concomitant triple therapy consisting of a proton pump inhibitor, clarithromycin, and amoxicillin or metronidazole 500 mg bid (for penicillin allergic patients) for 14 days remains a recommended treatment option in regions where *H. pylori* clarithromycin resistance is known to be <15% and in patients with no previous history of macrolide exposure for any reason. Levofloxacin triple therapy consisting of a proton pump inhibitor, levofloxacin proton pump inhibitor, and amoxicillin for 10–14 days is a suggested first-line treatment option for persistent infection. Bismuth quadruple therapy consisting of a proton pump inhibitor plus tetracycline 500 mg QID plus bismuth subsalicylate or subcitrate 525 mg QID and a metronidazole or levofloxacin or nitroimidazole for 10–14 days is a recommended option for patients who failed first line therapy. Hybrid therapy is a combination of sequential and concomitant therapy as follows: proton pump inhibitor plus amoxicillin for 3 – 7 days, then proton pump inhibitor plus amoxicillin plus clarithromycin and metronidazole for 7 days. Another option of hybrid therapy consisting of a proton pump inhibitor and amoxicillin for 7 days followed by a proton pump inhibitor, amoxicillin, clarithromycin and a nitroimidazole for 7 days. Reverse hybrid therapy is a combination of sequential and concomitant therapy, using the same drugs as hybrid therapy, but in reverse sequence, as follows: proton pump inhibitor plus amoxicillin plus 2 other antibiotics (usually, clarithromycin and metronidazole) for 7 days then proton pump inhibitor plus amoxicillin for 3–7 days. Rescue therapy consists of: proton pump inhibitor plus tetracycline or amoxicillin plus furazolidone 100 mg TID or tetracycline (if not already selected) or metronidazole plus bismuth potassium citrate 220 mg BID for 7 days. Rifabutin triple regimen consisting of a proton pump inhibitor, amoxicillin, and rifabutin for 10 days is a suggested rescue therapy or high-dose dual therapy consisting of a proton pump inhibitor and amoxicillin for 14 days.

**Results and discussion.** Whenever *H. pylori* infection is identified and treated, testing to prove eradication should be performed using a urea breath test, fecal antigen test or biopsy-based testing at least 4 weeks after the completion of antibiotic therapy and after proton pump inhibitor therapy has been withheld for 1–2 weeks.

**Conclusions.** Bismuth-containing quadruple therapy following the development of a galenic formulation including bismuth salts, tetracycline and metronidazole in the same pill (Pylera). PreVPac: Lansoprazole 30mg (2 caps containing granules), clarithromycin 500mg (2 tabs), amoxicillin 500mg (4 caps) per pack. Helidac: bismuth subsalicylate 262.4mg; metronidazole 250mg; tetracycline hydrochloride 500mg. Symptomatic pharmacotherapy: antacids (sodium bicarbonate), aluminum hydroxide/magnesium hydroxide (maalox), calcium carbonate/ magnesium hydroxide (rolaids), histamine 2 blockers (famotidine, ranitidine).

## MODERN PHARMACOTHERAPY OF DYSMENORRHEA

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**Introduction.** Dysmenorrhea is one of the most common illness among young women. Dysmenorrhea is defined as difficult menstrual flow or painful menstruation. Pain may occur with menses

or precede menses by 1 to 3 days. Pain tends to peak 24 h after onset of menses and subside after 2 to 3 days. The statistic in the USA says that dysmenorrhea may affect more than 50% of menstruating women, and its reported prevalence has been highly variable (45-90%). In the world it is 15,8 – 89,5%. Ukraine has 43 – 90%.

**Aim.** Study of modern standards of medical care for patients on dysmenorrhea.

**Materials and methods.** We conducted an analysis of articles, an adapted clinical guideline based on evidence, a unified clinical protocol providing medical care to patients with dysmenorrhea.

**Results and discussion.** Symptoms of dysmenorrhea include abdominal pain, headache, nausea, sometimes vomiting; diarrhea; pain at the bottom of the back; accelerated urination. By degree of severity, the following forms of the disease are distinguished: light, moderate, heavy.

Treatment of dysmenorrhea is aimed at providing symptomatic relief as well as inhibiting the underlying processes that cause symptoms. To date, pharmacotherapy has been the most reliable and effective treatment for relieving dysmenorrhea. For the treatment of dysmenorrhea are used NSAIDs, combined contraceptives, analgesics, vitamin therapy and antioxidants. In patients with refractory symptoms, a multidisciplinary approach may be indicated.

The most popular in this list are diclofenac, indomethacin, ibuprofen, nimesulide. Among analgesics are paracetamol and aspirin.

The use of combined estrogen-progestogen-containing monophasic contraceptives and contraceptives containing only progestogen leads to a decrease in the concentration of estrogen, and hence GHG, and the disappearance or reduction of the severity of symptoms of dysmenorrhea. Surgery is done when patients do not respond to drug therapy.

**Conclusion.** Thus, we have studied and analyzed the current standards of medical care for patients who have dysmenorrhea and came to the conclusion which groups of drugs are most effective in combating this disease and understood that modern pharmacotherapy is aimed at eliminating the symptoms of the disease.

## THE MODERN DIRECTIONS OF BREAST CANCER MEDICATION

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**Introduction.** Breast cancer is the most frequently diagnosed life-threatening cancer in women and the leading cause of cancer death among women. WHO statistic shows that breast cancer is the most widespread cancer worldwide. In Ukraine it is also the leader among women's oncological disease and has a steady tendency to grow. According to the Cancer Institute, every 7-8 woman has some problems with the breast. At the first examination a fourth of women has metastatic disease stages that are extremely difficult to treat. Early detection of the disease will help to change the situation as at the first stage of breast cancer 95% of women are cured. Furthermore breast cancer can affect men too, but it is rare cases. According to the National Chancellery in 2017 a diagnosis of breast cancer was established in 14170 Ukrainians. Every week 110 Ukrainians die from this disease.

**Aim.** The major aim was studying modern directions of medication and prevention methods of breast cancer in women.

**Materials and methods.** Research was carried out by studying foreign scientific medical sources and generalization of the studied information.

**Results and discussion.** Research has shown that nowadays there are more modern methods of screening such as magnetic resonance imaging, nuclear imaging, positron emission tomography, which are more sensitivity and specificity than traditional methods such as mammography and ultrasonography.

The main types of pharmacotherapy are used in the treatment of breast cancer: chemotherapy (CDK-inhibitors, oral fluoropyrimidines, antimicrotubules, anthracyclines, PARP-inhibitors, monoclonal antibodies, antimetabolites) and hormone therapy (tamoxifen, anastrozole, letrozole, exemestane, fulvestrant, megestrol).

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