

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

**TOPICAL ISSUES OF NEW MEDICINES
DEVELOPMENT**

МАТЕРІАЛИ
XXVI МІЖНАРОДНОЇ НАУКОВО-ПРАКТИЧНОЇ
КОНФЕРЕНЦІЇ МОЛОДИХ УЧЕНИХ ТА СТУДЕНТІВ

10-12 квітня 2019 року
м. Харків

Харків
НФаУ
2019

Редакційна колегія: проф. Котвицька А. А., проф. Черних В. П., проф. Загайко А. Л., Данильченко С. Ю.

Укладачі: Матерієнко А. С., Безкровна К. С., Халавка М. В., Сурікова І. О., Немировський С. А., Добрава А. О., Смелова Н. М.

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 pharmacoeconomics 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.

70% of travelers suffer that disease. In the United States, of the 1,000 cases of travelers who returned from travel, 335 cases are related to diarrhea.

Aim. Studing of modern standards of medical care for travelers with diarrhea.

Materials and methods. We conducted an analysis of articles, an adapted clinical guideline based on evidence, a unified clinical protocol providing medical care for patients with travelers' diarrhea.

Results and discussion. The main way of symptomatic treatment of diarrhea is rehydration. For most patients with mild or moderate dehydration (loss of $\leq 9\%$ of body weight), rehydration may be performed orally in outpatient settings. For this purpose, an oral glucose-electrolyte rehydration solution is used – Rehydron, Gastrolit, Orsol. Severe dehydration (loss $> 9\%$ of body weight) or symptoms of hypovolemic (dehydration shock) is an indication for immediate hospitalization and conduction of intravenous infusions of crystalloids – Acesol, Disol, Ringer solutions, Trisol. As a symptomatic therapy for patients with travelers' diarrhea are advised to use anti-diarrheal drugs. Among them are the drugs that suppress intestinal peristalsis – loperamide, which is considered as an additional remedy in patients with watery diarrhea, which runs without a fever or with a slight fever. Anti-diarrheal microbial agents containing probiotic microorganisms such as *Lactobacillus rhamnosus* GG, *Saccharomyces boulardii* may be useful adjunct to the treating of watery diarrhea with confirmed or possibly viral etiology. Empirical antibiotic therapy is recommended for patients with moderate or severe diarrhea, and in the absence of the result of symptomatic treatment (fluoroquinolones: levofloxacin, ciprofloxacin, ofloxacin, macrolides: azithromycin, antimicrobials used in intestinal infections, antibiotics: rifaximin.) Antibiotic prophylaxis is recommended for patients who are burdened with high risk of bacterial diarrhea and its complications, or people traveling for a short time in important cases.

Conclusion. Thus, we have learned and analyzed the current standards of medical care for patients with travelers' diarrhea according to which symptomatic treatment and empirical antibiotic therapy are recommended for patients.

MODERN PHARMACOTHERAPY OF HELMINTIC INFECTIONS

Hrytsai N.F.

Scientific supervisor: PhD, associate prof. Kashuta V.E.

National university of Pharmacy, Kharkiv, Ukraine

nadya.gritsay.1998@ukr.net

Introduction. Helminthic infections are parasitic diseases of a person caused by different representatives of lower worms (helminthes). The prevalence of these diseases is very high all over the world. Ascariasis and Enterobiasis is one of the most common diseases. An estimated worldwide prevalence of 804 million people had ascariasis. In Ukraine there are about 1100 cases per 100 thousand people had enterobiasis. Preferably these are children.

Aim. Study of modern standards of medical care for patients with helminthic infections.

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 ascariasis and enterobiasis.

Results and discussion. Early symptoms of ascariasis include cough, dyspnea, wheezing, urticaria, hemoptysis, and chest pain. Abdominal pain, distension, colic, nausea, anorexia, and intermittent diarrhea may be manifestations of partial or complete intestinal obstruction by adult worms. Pruritus ani and pruritus vulvae are common presenting symptoms of enterobiasis. Enuresis may be a symptom in children with pinworms.

The goals of pharmacotherapy are to eradicate infestation, to prevent complications, and to reduce morbidity. Albendazole 400 mg one dose orally is the drug of choice for ascariasis in stable patients older than 12 months with uncomplicated infection. Alternative therapy is mebendazole (100 mg bid for 3 days). Albendazole and mebendazole is not recommended during pregnancy. Pyrantel pamoate is the drug of choice in these cases. As an alternative to albendazole and mebendazole, ivermectin can be given in a dose of 150-200 micrograms/kg bodyweight.

An antihelminthic medication such as pyrantel pamoate, albendazole, mebendazole, ivermectin should be prescribed to patients with enterobiasis. Application of an antipruritic ointment or albendazole may help control scratching.

Thorough and regular handwashing is effective in preventing disease transmission.

Conclusion. Thus, we have studied and analyzed the current standards of medical care for patients with ascariasis and enterobiasis according to which antihelminthic medication are recommended for patients.

SUCH MEASURES TO THE PHARMACOTHERAPY OF CHRONIC OBSTRUCTIVE DISEASES

Kondakova A.

Scientific supervisor: associate prof. Savohina M. V.
National University of Pharmacy, Kharkiv, Ukraine
marinadoc10@gmail.com

Introduction. Chronic Obstructive Pulmonary Disease (COPD) is a disease characterized by a sustained limitation of the rate of air flow that progresses and is associated with an increased chronic inflammatory response in the respiratory tract and lungs to the action of harmful particles or gases. COPD affects between 8% and 22% of adults aged 40 and over.

The prevalence of COPD is significantly higher in people who smoke tobacco than non-smokers; in men versus women. The World Health Organization (WHO) reports that 3.17 million people died worldwide in COPD in 2015, and in 2016, 251 million patients were diagnosed with the disease.

Changes in the concept of COPD, eventually changed approaches to the diagnosis of the disease, changed the concept of pharmacotherapy for COPD.

Aim. The aim of the study was to study the experience of modern COPD therapy in international medical practice.

Materials and methods. The exploration was held by the analysis of the literature sources – European guidelines, treatment protocols of for the treatment of chronic obstructive pulmonary diseases.

Results and discussion. The ultimate goals of treatment of COPD are to prevent and control symptoms, to reduce the severity and number of exacerbations, to improve respiratory capacity for increased exercise tolerance, and to reduce mortality. There is a stepwise approach to therapy.

Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines state that all group A (few symptoms and low risk of exacerbations) patients should be offered bronchodilator treatment based on its effect on breathlessness. This can be either a short- or a long-acting bronchodilator. The effect of the bronchodilator should be evaluated. Depending on the response, it should be continued or stopped or another class of bronchodilator should be tried.

Long-acting muscarinic antagonists (LAMA) or long-acting beta-2 agonists (LABA) can be used as first-line therapy in this group B of patients (more symptoms and low risk of exacerbations). Initial treatment in group C should be a single long-acting bronchodilator.

GOLD guidelines recommend starting with a LAMA in patients group C (few symptoms but higher risk of exacerbations). Patients in group C with persistent exacerbations may benefit from dual therapy with a LABA and a LAMA. Umeclidinium/vilanterol (inhaled: (62.5/25 micrograms/dose inhaler) 1 puff once daily), glycopyrronium/formoterol fumarate (inhaled: (14.4/9.6 micrograms/dose inhaler) 1 puff twice daily), indacaterol/glycopyrronium (inhaled: (110/50 micrograms/capsule inhaler) 1 capsule once daily) and tiotropium/olodaterol (inhaled: (2.5/2.5 micrograms/dose inhaler) 2 puffs once daily) are combinations of a LABA and a LAMA approved for use in COPD.

GOLD guidelines recommend starting treatment with a LABA and LAMA combination in group D. This is because the LABA/LAMA combinations showed superior results compared to the single drugs in studies with patient reported outcomes as the primary endpoint. In group D patients (more symptoms and high risk of exacerbations) who develop further exacerbations on LABA/LAMA therapy, the GOLD guidelines suggest two alternative pathways: escalation to LABA/LAMA/ICS or switch to LABA/ICS.

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