Анотації наукових робіт

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PREVENTION OF NEONATAL HERPES IN WOMEN WITH PRIMARY AND RECURRENT FORMS OF GENITAL HERPES INFECTION

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The aim of the research: to study the results of the usage of Valavir in the prevention of neonatal herpes in women with primary and recurrent forms of herpes infection (HI).
Material and methods: clinical, immunoenzymatic, statistical methods.
Results: It has been shown in this research that prophylactic application of antiviral drug Valavir in patients with primary and recurrent forms of genital herpes in late pregnancy term reduces the incidence of herpes simplx virus (HSV) infection in newborns in 3 times.
Conclusions: Abdominal operative delivery in a case of premature rupture of membranes and the lack of application of specific antiviral therapy is not totally effective in the prevention of the development of neonatal herpes. Carrying out specific preventive antiviral therapy on the eve of birth can reduce the incidence of HI in the newborn in 3 times.

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STUDY OF HEALTHCARE PROFESSIONALS KNOWLEDGES REGARDING PHARMACOVIGI-LANCE SYSTEM ACTIVITY AND DRUG SAFETY IN UKRAINE

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The aim of the research: to study the learning of employees with higher medical or pharmaceutical education regarding pharmacovigilance in Ukraine and the main issues of drugs safety.
Materials and methods: The research was carried out through the anonymous questionnairing by 2 types of forms. In the study took part 215 doctors of different specialties and 205 specialists with pharmaceutical education (pharmacists and clinical pharmacists).
Results: Questionnairing of specialists with higher medical and pharmaceutical education in terms of awareness of the pharmacovigilance and drug safety. The main types of doctor's and pharmacist's/clinical pharmacist's interventions were determined when complications of pharmacotherapy appear for improving the safety of pharmacotherapy.
Conclusion:

1. The results of the study showed that only 79,0% of the healthcare professionals aware about pharmacovigilance in Ukraine, with statistically significant difference in this indicator among doctors (86,0%) and pharmacists/clinical pharmacists (96,1%) ($\chi 2 = 12,88$, $p<0.05$). However, almost all respondents (92,1% of doctors and 93,2% of pharmacists/clinical pharmacists) need additional information about issues of drug safety.
2. It was established, that among workers with medical or pharmaceutical education who identified complications of pharmacotherapy, only 39,6% and 12,4% respectively filled the reports about adverse drug reaction to notify the State Enterprise «State Expert Center of the Ministry of Health of Ukraine». In our opinion, one of the main causes of this situation is low awareness of physicians (69,3%) and pharmacists/clinical pharmacists (53,2%) with respect to professional interventions that primarily provided by industry standards in Ukraine.
3. Most health professionals – 83,3% of doctors and 87,8% of pharmacists/clinical pharmacists expressed a desire to receive information about drug safety in format databases of drugs and their adverse drug reactions. Therefore, the promising area of modern health care system of Ukraine, in our opinion, is the development of these information resources with mandatory involving clinical pharmacist.

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VISUALYZING METHODS IN THE COMPREHENSIVE TREATMENT OF THE PATIENTS WITH URGENT ABDOMINAL SURGICAL PATHOLOGY: CLINICAL SPECIAL FEATURES AND ECONOMACAL ASPECTS

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The aim of the research: to estimate the place and significance of miniinvasive surgery in the treatment of patients with acute appendicitis (AA) and acute cholecystitis (AC); based on analysis of the duration of treatment (leaf disability) to evaluate the clinical and economic aspects of the methodology videolaparoscopic surgical intervention as a method of complex surgical treatment.

Materials and methods: The statistical analysis of patient records with AA and AC receiving comprehensive surgical treatment in the one of the clinical establishments of Lviv during the 2013 have been conducted. Totally the 782 cards of hospitalized patients including with a clinical diagnosis of AA (415) and AC (calculous) (367) were processed.

Results: In order to estimate the duration of the surgical treatment of patients with AA and AC, the terms of preoperative and postoperative management of these patients have been analyzed. The economic benefit of using miniinvasive surgical technologies as a method of complex surgical treatment was proved.

Conclusion:

1. Miniinvasive operating procedures is the «gold» standard of medical assistance for patients with urgent surgical diseases of the abdominal cavity and provides optimal approach to surgical treatment of these patients.
2. Inclusion in the treatment standards videolaparoscopic technologies allows to reduce the time patients stay in hospital with AA to the 8,07±0,93 days and AC – to the 9,1±1,23 days.
3. Results of the economic evaluation of the process of treating patients with AA and AC allows to assert that the including a miniinvasive technology of surgical treatment contributes to a significant decreasing costs for each patient (with AA on 347,7 UAH, for patients with AC – on 495,7 UAH).

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HISTORICAL ASPECTS OF PHYTOPHARMACY IN GALICIA THE FIRST HALF OF THE XX CENTURY

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The aim of the recearch: systematization historical evidence data of phytopharmacy in Galicia first half of XX century.

Materials and methods: systemic historical, bibliographical, analytical, comparative analysis have been used in investigation.

Results: The main problems of phytopharmacy development in Galicia in the first half of the XX century were determined. The acquisition and analysis of information on medicinal plants used for treatment was fulfilled on the basis of evidence-based historical sources. In general, according to the analysis data, including those represented in pharmacopoeia purveyed wild and cultivated medicinal plants in 20s of the last century not less

than 170 of botanic kinds of local plants were used in pharmaceutical practice of Galicia. The assortment of medicinal plants which were used in pharmacy was usually wider than pharmacopoeia lists of appropriate periods for the account of not listed medicinal plants from the previous pharmacopoeia issues.

Conclusions:

1. The phytopharmacy was an integral component of pharmaceutical and medical practice of Galicia the first half of the XX century. The phytopharmacy based on long historical experience of traditional medicine, European and local traditions, scientific knowledge about medicinal plants, manufacture, sale and use of drugs of plant origin.
2. Joining the former German, Austrian and Russian empires in the common information space Polish state contributed to the development of pharmacy of Galicia. This led to the generalization of scientific knowledge, and pharmaceutical practice for the creation of Polish pharmacopoeia.

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PROSPECTS OF PHARMACEUTICAL CARE INTRODUCTION AND REALIZATION AS INSURANCE PHARMACEUTICAL SERVICE

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The aim of the research:the study of pharmaceutical specialists' opinion on pharmaceutical care (PC) elements and possibilities of its use as a prospective insurance pharmaceutical service in a drugstore.

Materials and methods: The standardized algorithm of the survey has been used according to the only protocol what allowed to achieve equality within the groups. In the process of the survey 500 questionnaires have been received. During further processing 34 questionnaires filled with less than 15% of information have been excluded. The statistical processing of the findings has been carried out in terms of the statistical analysis R 2.15.2.The criterion xi squared has been applied to define the statistical significance of relations between respondents' answers, and Wilcoxon-Mann-Whitney criterion (the comparison of 2 groups) and Kruskal-Wallis criterion (more groups) have been applied for relations between age and responses since the distribution of respondents' age varied from the norm. Applied methods: the method of system approach, anonymous survey according to the only protocol, statistical method.

Results:The study of the drugstore workers' (pharmacists, clinical pharmacists, druggists) opinion on the elements of PC and possibility of its use as a prospective insurance pharmaceutical service in a drugstore has been conducted.There has been provided the essential prove that only 66,7% of respondents, in particular pharmaceutical specialists consider PC as their responsibility. On the other hand, the majority, 64,2% of respondents, are convinced that the insurance PC is to be provided by the experts on the insurance pharmacy issues offering new prospects on the realization and development of such a pharmacist's activity under conditions of medical (pharmaceutical) insurance introduction in Ukraine.

Conclusions:

1. There has been provided the essential prove that only 66,7% of respondents, in particular pharmaceutical specialists consider pharmaceutical care as their responsibility although 47,0% of respondents are ready to provide it to the insured customers of a drugstore. The negative response is met less among the residents of Lviv (6,1% vs 19,8% for residents of other localities), and the respondents' age and type of ownership of a drugstore do not influence on the response to an indicated question.
2. The majority, 64,2% of respondents, consider that the insurance pharmaceutical care is to be provided by the experts on the insurance medicine or pharmacywhat offers new prospects on the realization and development of such a pharmacist's activity under conditions of medical and pharmaceutical insurance introduction in Ukraine.
3. To our concern, under conditions of current healthcare reformation in Ukraine it is appropriate to unite functional obligations of an expert on pharmaceutical insurance and clinical pharmacist since the training of the latest, in particular in Danylo Halytsky Lviv National Medical University, allows to realize pharmaceutical insurance in a drugstore.

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ANTIBACTERIAL AND ANTIFUNGAL ACTIVITIES OF DERIVATES OF QUINAZOLINES, TRIAZOLES AND THEIR CONDENSED ANALOGUES

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The aim of the research:synthesis of novel heterocyclic compounds with quinazoline, triazole and triazoloquinazoline fragments and evaluation of their antibacterial and antifungal actions. Obtained data were used for understanding «structure-activity» relationships that improve methodology of searching biologically active compounds with antibacterial and antifungal actions among mentioned compounds.

Materials and methods: The objects of our investigation were *N*'-[quinazolin-4(3*H*)-yliden]arylhydrazides, [2-(3-aryl-1*H*-1,2,4-triazole-5-yl)phenyl]amines and 2-aryl[1,2,4]triazolo[1,5-*c*]quinazolines, which were synthesized according to known methods.Sensitivity of microorganisms to synthesized compounds was evaluated on Mueller-Hinton medium by two-fold serial dilution of compound in 1 ml, after that 0,1 ml of microbial seeding (10^6 cells/ml) was add. Minimal inhibit concentration of compound was determined by absence of visual growth in test tube with minimal concentration of substance; minimal bactericide/fungicide concentration was determined by absence of growth on agar after inoculation of microorganism from transparent test-tubes. Dimethylsulfoxide was used as a solvent, initial solution concentration was 1 mg/ml. For a preliminary screening the mentioned ahead standard test cultures were used: *St. aureus* ATCC 25923, *E. coli* ATCC 25922, *P.aeruginosa* ATCC 27853 and *C. albicans* ATCC 885-653.

Results: Conducted microbiological screening showed that *N*'-[quinazolin-4(3*H*)-yliden]arylhydrazides exhibit moderate antimicrobial action. Minimal inhibiting concentrations of mentioned compounds ranged between 50-200 μg/ml, and were less comparing to Trimetoprim and Nitrofural. Among studied compounds, our attention was drawn to 2-chloro-*N*'-[quinazolin-4(3*H*)-yliden]benzohydrazide. Mentioned compound showed activity against *St. Aureus*at the same level comparing to Nitrofural (MIC=6,25μg/ml). Also *N*'-[quinazolin-4(3*H*)-yliden]arylhydrazides exhibited moderate action against *C. Albicans* (MIC=62.5 μg/ml). 2-aryl[1,2,4]triazolo[1,5-*c*]quinazolines also showed moderate antimicrobial and antifungal activities. Among this class, the most active compound was 2-(2-methoxyphenyl)-[1,2,4]triazolo[1,5-*c*]quinazoline, which showed significant action against *St. Aureus and C. Albicans.* Nucleophilic cleavage of pyrimidine cycle led to the [2-(3-aryl-1*H*-1,2,4-triazole-5-yl)phenyl]amines with high antimicrobial and antifungal action. We noted that introduction of halogen in molecules of [2-(3-aryl-1*H*-1,2,4-triazole-5-yl)phenyl]amines in most cases increase their antimicrobial and antifungal activities.

Conclusions:

1. Antimicrobial and antifungal activities of N`-[quinazolin-4(3H)yliden]arylhydrazides, 2-aryl[1,2,4]triazolo[1,5-c]quinazolines [2-(3-aryl-1H-1,2,4-triazol-5-yl)phenyl]amines against gram-positive (*S. aureus*), gram-negative (*E. coli*, *P. aeruginosa*) bacteria and fungus (*C. albicans*) were studied. It was established that [2-(3-aryl-1H-1,2,4-triazol-5-yl)phenyl]amines are the most perspective class of antibacterial agents with high activity against *St. aureus* (MIC=3,125-12,5 μg/ml) and*C. albicans* (MIC=12,5-50 μg/ml). Our findings may be used as experimental basis for further chemical modification of listed above compounds aimed at the search of new effective chemotherapeutic medications.
2. The correlation analysis of «structure-activity» for [2-(3-aryl-1H-1,2,4-triazol-5-yl)phenyl]amines showed that their antibacterial properties are defined as basic heterocycle and the nature and position of a substituent in phenyl group.
3. Our findings may be used as experimental basis for further chemical modifications of listed above compounds aimed at the search of new effective chemotherapeutic medications.

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METHODS OF SILDENAFIL ISOLATION FROM BIOLOGICAL MATERIAL

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The aim of the research: Elaboration of robustness, reproducible, and express techniques of sildenafil isolation from objects of biological origin.

Materials and methods: sildenafil was isolated from biological material with water acidified by oxalic acid, sulphate acid, ethanol, and mixture of acetinitrile with 70% perchlorate acid (1:1). Sildenafil was extracted from obtained solutions by 1,2-dichloroethane at pH 8. Sildenafil in the samples was determined UV-spectrophotometricaly at 292 nm and by extraction-photometricaly on reaction with bromocresole green. Sildenafil was identified by thin-layer chromatography on solvents systems ethylacetate-acetone-diethylamine (15:10:1) and chloroform-acetone-diethylamine (6:5:1).

Results: limit of sildenafil detection on TLC plates is 1 μg with Dragendorf's reagent and 15 μg at 264 nm. Limit of sildenafil determination is 8 μg in 15 ml end solution. Water acidified with oxalic acid isolates 25-28% of sildenafil, water acidified with sulphate acid isolates 34-38%, and acidified ethanol – 33-36%. Acetonitrile with 70 % $HClO_4$ isolates 45-48% of sildenafil.

Conclusions:

1. Dependence of efficiency of sildenafil isolation from liver with different solvents is studied. 45-48 % of sildenafil are isolated from biological sample by mixture of acetonitrile with 70% perchloric acid (1:1).
2. Two solvents systems for TLC-express detection of sildenafil are proposed: ethylacetate-acetone-diethylamine (15:10:1) and chloroform-acetone-diethylamine (6:5:1).
3. UV-spectrophotometry and extraction-photocolorimetry based on reaction with bromocresole green are proposed for quantitative termination of sildenafil.

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POISSON REGRESSION IS THE METHOD OF CHOICE FOR COUNT DATA ANALYSIS (ON THE EXAMPLE OF COLORECTAL CANCER MORBIDITY IN TRANSCARPATHIAN REGION)

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The aim of the research: to compare Poisson regression versus multiple linear regression as possible approaches to count data analysis using colorectal cancer morbidity data (Transcarpathian region) as a working example.

Materials and methods: The method of multiple linear regression is based on the assumption that model residuals are uncorrelated and have constant dispersion (Gauss-Markov theorem). Additionally, the calculation of p-values for regression coefficients requires the distribution of residuals to be close to normal. Since the number of events is a discrete value, it cannot follow normal distribution apriori. Moreover, the dispersion of such data is growing up with the number of events. The distribution that expresses the probability of a given number of

events occurring in a fixed interval of time and/or space is known as Poisson distribution, and the method that assumes the response variable has Poisson distribution is called Poisson regression. So, there are enough strong theoretical arguments to use Poisson regression when modeling count or rate data. The data for case study represents colorectal cancer morbidity in Transcarpathian region from 1995 to 2010 grouped by age and gender.

Results: Poisson regression resulted in higher determination coefficients compared with multiple linear regression (R^2=0,967 versus 0,940 for counts and R^2=0,959 versus 0,767 for rates). All p-values obtained with Poisson regression were lower, supporting stronger evidence. Unlike multiple linear regression, Poisson regression does not predict negative counts or rates for morbidity. Regression coefficients for Poisson regression have easy interpretation – their exponents are odds ratios (relative risks).

Conclusions: Poisson regression has significant advantages over multiple linear regression when modeling count data. Besides correct modeling of epidemiologic indicators, using of Poisson regression leads to higher accuracy and evidence. Thus Poisson regression is the method of choice for count data modeling during medical research.

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SCIENTIFIC AND METHODICAL ASPECTS AND ANALYSIS OF DISCIPLINE «BIOPHARMACY» TEACHING EXPERIENCE

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The aim of the research: to outline the role of biopharmacy in the system of higher pharmaceutical education; to generalize teaching experience for this discipline; to determine interdisciplinary relations of biopharmacy with other disciplines.

Materials and methods: the object of the research is teaching system for discipline «biopharmacy»; the subject of the reserch involves theoretical issues of complex teaching many related disciplines. The methods of modeling, analysis and formalization were used.

Results: generalization of teaching experience for discipline «biopharmacy» proves that scientific and methodical approaches should involve educative purposes: to help students to realize importance of requirements to drug production and to teach them pharmacist functions as technologist and researcher; to help mastering professional skills for confirmation of optimal technology of extemporal medical forms, as well as in a choice of researches structure in creation of new preparations. The developed flowchart of specialists training in medical higher educational institutions allows tracking interrelations between basic and professional disciplines during educational process. It is recommended to apply such instruments for assessment of students' mastering training material: test tasks, examinations, case tasks, carrying out educational researches with assessment of their results, control of practical skills etc.

Conclusions:

1. Therefore, the level of professional training of specialists in the biopharmacy sphere is an important efficiency factor of carrying out world pharmaceutical practice of preclinical and clinical trials in creation of new medicines which include biopharmaceutical screening.
2. Formation of the new educational system focused on integration into world educational space needs essential innovative changes in training future pharmacists.

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