Анотації наукових робіт

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A CLUSTER APPROACH IN THE MODELING OF EYE CARE SERVICE IMPROVEMENT

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The aim of the research: The creation of medical and social innovation cluster for improving the eye care quality in the center.

Materials and methods: The center is a clinical and scientific research base. The object of the research: a professional activity of the center modeled in a cluster format. The methods applied: a system approach, a comparative analysis, a bibliosemantic approach, modeling, a cluster approach.

Results: The developed medical and social cluster model for improving the eye care quality has proved a really effective way for cooperation of health care institutions of different ownership, directions, locations, including those which are situated abroad.

Conclusions:

1. The cluster approach in creating the optimization model for Zagursky Eye Surgery Center activity enables: 1) cluster operation as a system for obtaining the synergy manifested by significantly greater clinical and economic effects than functioning of individual components (health facilities and institutions); 2) simplifying the access of institutions, i.e. cluster members to the resources; 3) improving the efficiency of services (health, teaching, etc.) through more sustainable logistics links between institutions within the cluster; 4) facilitating planning and forecasting of information technology innovations, new medical technologies, the creation of registers and databases, etc.
2. The developed cluster model of health care quality improvement, particularly in ophthalmology, has proved a really effective way for cooperation of health care institutions of different ownership, directions, locations, including those which are situated abroad.

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CURRENT ISSUESOFURGENTLAPAROSCOPICDEPARTMENTORGANIZATION

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The aim of the research: improvement of treatment quality for patients with acute surgical pathologies and abdominal traumas by facilitating diagnosis verification, due to videolaparoscopic treatment efficiency analysis, comparative estimation of endovideosurgical and conventional surgical methods, as well as expediency evaluation of the urgent video endoscopic department establishment at the Lviv Emergency Hospital.

Materials and methods: The study of urgent video laparoscopic operations' quantity, their sensitivity, reliability, and informational content, as well as economical expediency during 5 years (2011-2015) was conducted.

Results: The statistic analysis of urgent mini-invasive operations for the last 5 years revealed the following results: there were 160 operations in 2011, 134 – in 2012, 201 – in 2013, 187 – in 2014; 46 operations – in the 1st quarter of 2015, with therapeutic laparoscopies being prevalent. Surgical treatment in the specialized urgent endovideosurgical department enabled to decrease costs for diagnostics, therapy and rehabilitation (to 34%) as well as increase in 1,8 times the effectiveness of using hospital beds.

Conclusions: The developed model of the urgent endovideosurgical aid organization and studying its functioning proved that implementation of video laparoscopic technologies into the diagnostic and therapeutic standards is reasonable and facilitates prompt verification of the diagnosis, decreases the number of unnecessary laparotomies, as well as the morbidity and mortality rates, improves the treatment results of acute surgical pathologies and abdominal trauma patients', reduces the length of hospitalization, and therefore, is economically expedient.

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ASSESSMENT OF PHARMACOTHERAPY QUALITY IN CURRENT CLINICAL PRACTICE DUE TO THE RESULTS OF THE QUESTIONNAIRE SURVEY (ON EXAMPLE OF PARKINSON'S DISEASE)

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The aim of the research: to estimate quality of Parkinson's disease pharmacotherapy, to assess rationality of Antiparkinsonian agents administration, to determine patients' adherence to pharmacotherapy in current clinical practice.

Materials and methods: Research objects were questionnaires of patients with Parkinson's disease (n=37) compiled according to specially designed protocol, National drug register, instructions for drug administration. The survey was carried out at a Lviv hospital during September 2013 – February 2014. Methods applied: questionnaire survey, statistical, analytical and comparative, bibliographic.

Results: adherence to pharmacotherapy was estimated in patients with Parkinson's disease in current clinical and neurological practice. The rationality of prescribing medications, real and potential drug-related problems were identified. The quality of Parkinson's disease pharmacotherapy was evaluated. The necessity of providing neurologists and patients suffering from Parkinson's disease with pharmaceutical care regarding administration of medications was grounded.

Conclusions:

1. The results of the study proved adequate quality of prescribed pharmacotherapy, though there were cases of self-treatment (40,5%), missing a dose (16,2%), non-adherencetoadiet (86,5%), non-adherence to treatment regimen on the whole (16,2%).
2. The obtained data of the questionnaire prove lack of patients' responsibility concerning diet and prescribed medications, as well as non-adherence to treatment regimen. One should improve physician's control concerning patients' adherence to pharmacotherapy, particularly in case of Parkinson's disease.
3. We believe that providing patients who constantly use certain medications (including Antiparkinsonian agents) with information about the risks of serious and dangerous interactions between medications for basic pharmacotherapy and other means (drugs for concomitant treatment, nutritional supplements, homeopathic agents, food, etc.) requires further study and development of appropriate guidelines.
4. The results of the study prove the necessity of providing physicians and patients with special clinical pharmacists' recommendations concerning rational prescribing and administration of Antiparkinsonian agents, especially in cases of comorbidity and combined pharmacotherapeutic correction. This clinical and pharmaceutical intervention, in our opinion, is reasonable and may help to prevent drug-related problems.

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PHARMACOTHERAPY OF UTERINE DYSFUNCTION IN PRETERM LABOR

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The aim of the research: to search, analyze and systematize the information on available treatment regimens for uterine dysfunction in preterm labor.

Materials and methods: The analysis of Internet resources, Ukrainian professional scientific periodicals, foreign professional publications, medical database of Medline. Information search, bibliographical, analytical and comparative methods have been used.

Results: 30% of preterm labor are characterized by abnormal course. Rapid and precipitate labors are commonly encountered. Numerous agents have been advocated as suppressors of uterine contractions. Those in current use include beta-agonists, calcium channel blockers, oxytocin receptor antagonists, prostaglandin synthetase inhibitors, nitric oxide donors and magnesium sulphate. Beta-adrenergic agonists have been studied in several randomized controlled trials. Hexoprenalin is the most commonly used in preterm labor. Terbutaline and salbutamol are applied for the management of acute tachysystole with an abnormal fetal heart-rate pattern. The oxytocin receptor antagonists (atosiban) have not been studied in trials as an intranatal tocolytic due to their expensiveness. Calcium-channel blockers are used for acute tocolysis. The studies of intranatal using magnesium for regulation of uterine contractility can be considered perspective. Nitroglycerin (nitric oxide donor) can be applied for treatment of intranatal uterine dysfunction as well.

Prolonged labor is rarely encountered. However, it does occur. The oxytocin and misoprostol can be used for augmentation of labor. Since misoprostol is not approved in Ukraine for administration in labor, intravenous oxytocin is more acceptable for augmentation.

Conclusions: The reliable and safe methods for labor activity regulation in cases of uterine dysfunction in preterm labor have not yet been developed.

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RATIONAL CHOICE OF EXCIPIENTS FOR IMPROVING THE COMPOSITION AND TECHNOLOGY OF «AMIZONE» TABLETS

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The aim of the research: Improvement of formulation and technology of «Amizone» tablets. This paper presents the first stage of development.

Material and methods: Tablets are prepared by wet granulation. 16 excipients of 4 groups were selected: fillers, disintegrants, binders and lubricants. Greek and Latin square was applied to study the influence of 4 factors on 4 levels. Model granules and tablets were studied by main pharmacotechnological parameters using the methods of the State Pharmacopoeia of Ukraine (SPU). The results of experimental studies were evaluated by analysis of variance, rows of advantages and column diagrams were formed for visual demonstration.

Results: Composition of «Amizone» tablet-cores were improved by adding new excipients. Improvement of composition and technology of «Amizone» tablets involved 3 stages. The qualitative composition of tablet-cores was substantiated at the 1st stage of developing film-coated tablets. The optimal composition and technology of tablet-cores were elaborated at the 2nd stage. The composition and film coating technology were worked out at the 3rd stage. Due to the results of previous studies, it was determined that «Amizone» tablets should be produced by wet granulation. It was necessary to choose appropriate excipients: fillers, disintegrants, binders and lubricants. According to the analysis of variance and average significant factors levels, rows of advantages and column charts were formed to study the impact of factors on the basic parameters of quality in model mixtures and tablets. Sucrose or lactose blend of microcrystalline cellulose 101 were selected as appropriate fillers for further experiment. The following disintegrants: croscarmellose sodium and crospovidone XL 10 revealed the most significant effects on the general index – the desirability function. Croscarmellose sodium was selected as proper disintegrant for further research to develop the optimal composition of «Amizone» tablet.

Conclusions: The outcomes of the study enabled rational choice of excipients for further study for elaboration and manufacturing of optimal composition of «Amizone» coated tablets. The following excipients were selected for further experiment due to the results of the 1st stage of the study: lactose blend of microcrystalline cellulose 101, croscarmellose sodium, polyvinylpyrrolidone 17 PF and calcium stearate.

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METHODICAL PRINCIPLES OF PHARMACEUTICAL CARE FOR PATIENTS WITH ORPHAN DISEASES IN EMERGENCY SITUATIONS

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The aim of the research: Development of approaches to pharmaceutical care organization for patients with orphan diseases in peacetime and wartime emergencies.

Materials and methods: The study used methods of observation and generalization, synthesis and formalization of content analysis. The subject of the study involved clinical protocols of treatment for orphan diseases, normative and legal acts and documents concerning social and economic principles of state adminis-tration on pharmaceutical care of the population.

Results: The conceptual model of the pharmaceutical care for patients with orphan diseases in peacetime and wartime emergencies was developed. The necessity of creation of State Medical-Genetic Center, State registry of patients and the development of national interactive telemedicine network was substantiated with the aim of adequate pharmaceutical care due to the formed list of medicines and foodstuffs for patients with rare diseases.

Conclusion: A methodical approach and the conceptual model of pharmaceutical care for patients with rare diseases in conditions of peacetime and wartime emergencies were elaborated. The necessity of creation of the State Medical and Genetic center and a network of regional medical and genetic centers was substantiated.

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DYNAMICS OF MORPHOMETRIC PARAMETERS OF RENAL DAMAGE IN BURN INJURY IN RATS AND THEIR CORRECTION BY HAES-LX-5%INFUSION SOLUTION

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The aim of the research: to analyze the dynamics of morphometric features of renal injury and their correction by HAES-LX-5% infusion solution in conditions of experimental skin burn of rats.

Materials and methods: The skin burn was caused by placing 4 copper plates (two plates to the each side), which were preheated for 6 minutes in water with constant temperature 100°C, on the lateral surfaces of the animal bodies. The total area of burn in rats of specified body mass was 21-23% during 10 sec. exposition; that was enough for causing the 3rd degree burn and the development of a medium level state of shock. The infusion therapy (for 380 rats) was performed by comparison of three correction diagrams: 0,9% NaCl, Lactoproteinum and Sorbitol (reference-medicine) and the medicine on the basis of Hydroxyethyl starch, by means of intravenous injection into catheterized femoral vein for 7 days of observation, at the rate of 10 mg/kg body mass of rats, once a day.

Results: Obtained results have indicated that the 7-day course of HAES-LX-5%complex solution administration effectively corrected the renal state, provided cytoprotective action. It was proved by measuring renal structure indices and by the evidence of healing processes.

Conclusion:

1. It has been determined for the first time that, according to morphometric indices, a severe heat injury in rats is accompanied by disorders of all renal structural elements, epithelial tissues and vessels, even in case of protective administration of normal saline 0,9% NaCl solution, including the most conspicuous manifestations during three days of observation.
2. Pharmacological correction of the disorders for seven days with the infusion solution on the basis of Hydroxyethyl starch HAES-LX-5% significantly diminished the pathological symptoms of renal structure.
3. The obtained results may indicate expediency of new infusion solution administration for protectting renal functions due to its cytoprotective activity.

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SHORT-TERM AND LONG-TERM OUTCOMES OF TREATMENT IN PATIENTS WITH BLEEDING COLORECTAL CANCER

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The aim of the research: to study the immediate and long-term outcomes of patients with colon cancer complicated by bleeding.

Materials and methods: A retrospective analysis of treatment outcomes in 85 patients with bleeding colorectal cancer operated in 2008-2012 has been carried out.

Results: Right-side localization of the bleeding tumor was found in 33 (38,8%) patients, left-side – in 52 (61,2%), 9 (10,5%) of patients had a tumor of the rectum. Simultaneous cancer was diagnosed in one patient (a combination of sigmoid colon tumors and left flexure of the colon). According to the TNM (7 edition, 2009),the Ist stage of tumor was found in 1,2% of patients, the IInd stage – in 37,6%, the IIIrd and the IVth stage – in 31,7% and 29,4% of patients, respectively. The operation type was chosen due to the general state of the patient, complications and stage of the neoplastic process. The postoperative mortality rate in patients with colorectal cancer was 9,3% and depended on blood loss severity and concomitant pathology. Radical surgery with adjuvant chemotherapy enabled to reach 5-year survival in 64,8% patients with the IInd stage and in 48,1% of patients with the IIIrd stage.

Conclusions:

1. Intestinal bleeding in almost 1/3 of patients (29,1%) was caused by colorectal cancer.

2. Bleeding occurred at all stages of colon cancer. It was the first symptom in 41,2% patients that prompted them to seek medical care.
3. Radical surgeries in case of colorectal cancers complicated by bleeding enabled to reach 5-year survival in 64,8% of patients.

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CLINICAL IMPLEMENTATION OF DIAGNOSTIC AND THERAPEUTIC ALGORITHM FOR TREATMENT OF PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE COMPLICATED BY HEMORRHAGE

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The aim of the research: to evaluate the clinical implementation of diagnostic and therapeutic algorithm for treatment of complicated gastroesophageal reflux disease.

Materials and methods: the treatment outcomes of 105 (64 men, 41 women) patients operated in the clinic of surgery and endoscopy during 2009-2014 were analyzed. Patients ranged in age from 26 to 72 years (average age was 49±5,2 years).The diagnostic and therapeutic algorithm of complicated GERD (model of clinical protocol for medical care in complicated GERD) was elaborated. *Los Angeles*-based classification was applied to describe the changes in the esophagus with reflux esophagitis. Videoendoscopy, chromoscopy, targeted biopsy were performed to identify areas of intestinal metaplasia of the epithelium in the lower third of the esophagus. *Likert* questionnaire was used with adding nocturnal atypical symptoms and standardized survey by *DeMeester* scale in addition to common GERD complaints. Quality of life index calculation was performed using Gastro Intestinal Quality of Life Index. The following methods were used: modeling, clinical, analytical and comparative, standardization, questionnaires, tools.

Results: The complications of GERD involved: peptic ulcer of the esophagus was diagnosed in 9 (8,6%), peptic esophageal stricture – in 2 (1,9%), *Barrett's* esophagus – in 4 (3,8%), esophageal-gastric bleeding – in 15 (14,3 %) patients, *Malory-Weiss* syndrome – in 8, erosive and ulcer bleeding – in 7 patients. Hiatal hernia was diagnosed in 95 (90,5%) patients (sliding hernia – in 85 (89,5%), paraesophageal hernia – in 2 (2,1%) mixed hernia – in 8 (8,4%) cases). 105 patients were operated by videolaparoscopic method. *Nissen* fundoplication was performed in 89 (84,7%) patients, *Toupe* fundoplication – in 12 (11,4%), *Nissen-Rosetti* fundoplication – in 4 (3,8%). A combined hemostasis (coagulation argon + injection) with infusional hemostatic, antiulcer therapy was performed in 10 patients with acute bleeding of the upper gastrointestinal tract. *Blackmore* probe was successfully applied in 2 patients with *Malory-Weiss* syndrome with recurrent bleeding. Operations were performed in 1,5-2 months. All patients with peptic ulcer of the esophagus received proton pump inhibitors (PPIs) and prokinetics. Videolaparoscopic antireflux surgery was made in 4-16 weeks of conservative treatment. Balloon dilatation and conservative treatment was carried out for 12 weeks in 2 patients with peptic stricture of the esophagus. Then the patients were operated. Argonoplasmous coagulation was applied in 3 patients with verified *Barrett* esophagus. Proton pump inhibitors were administered for 8-12 weeks before surgery and for 2 –after it. There was no recurrence of GERD in any case in 12 months following operations. Epithelial regeneration occurred in 3 months following operations in all patients with *Barrett* esophagus. There were no cases of adenocarcinoma in 12 months. quality of life index increased in comparison with preoperative indicator (from 75 to 97 ± 6,4 ± 5,2.)

Conclusion:

1. The complications of GERD included: esophageal-gastric bleeding was diagnosed in 15 (14,3%) patients; hiatal hernia was diagnosed in 95 (90,5%) patients (sliding hernia – in 85 (89,5%), paraesophageal hernia – 2 (2,1%), mixed hernia – in 8 (8,4%) cases).
2. Performing combined hemostasis (injection + argon coagulation) with infusional hemostatic, antiulcer therapy enabled to stop the bleeding and to prepare patients for routine surgery.
3. Developed diagnostic and therapeutic algorithm facilitated systematization and objectification of changes in complicated GERD, facilitated prompt diagnostics and choice of differentiated treatment tactics and improved QOL of patients.

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CURRENT ASPECTS OF ULCERATIVE GASTRODUODENAL BLEEDING TREATMENT

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The aim of the research: to analyze the results of implementing modern treatment strategy for ulcerative gastroduodenal bleeding at Lviv city center of treatment and prevention of gastrointestinal bleeding.

Materials and methods: We analyzed the treatment of 7667 patients with the pathology, including 6278 (81,9%) patients receiving conservative treatment and 1,389 (18,1%) undergoing surgery. During the last 15 years, we have applied pharmacotherapeutic and endoscopic tactics according to international guidelines for the treatment of nonvaricosal gastrointestinal bleeding (2009). The following methods have been used: system analysis, clinical and instrumental investigation, statistical analysis.

Results: The tactics for management of nonvaricosal gastrointestinal bleeding enabled to achieve significant results, namely: number of surgeries was decreased from 44,7% to 6,7%, total mortality rate reduced from 30% to 3,4%, mortality rate from gastric or duodenal ulcer complicated by bleeding diminished from 14% to 1,5%, rebleeding rate – from 21,9% to 8,1%.

Conclusion:

1. Peptic ulcer is the main cause of upper non-varicosal gastrointestinal bleeding.
2. Pharmacotherapeutic and endoscopic approach according to international recommendations on the management of patients with nonvaricosal upper gastrointestinal bleeding is predominantly applied.
3. Surgery can be used after ineffective endoscopic hemostasis and pharmacotherapy.
4. Urgent angioscopy embolization of bleeding vessels is a promising method and can be an alternative for surgery.

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ORGANIZATIONAL AND LEGAL PECULIARITIES OF CIRCULATION ORDER FOR CERTAIN CLASSIFICATION AND LAW GROUPS OF CONTROLLED MEDICINES IN UKRAINE DUE TO THE PRINCIPLES OF PHARMACEUTICAL LAW

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The aim of the research: was to substantiate classification of certain medicines containing controlled active pharmaceutical ingredients on the basis of studying organizational and legal peculiarities of circulation order for medications comprising small amounts of narcotics, psychotropic substances and precursors as active pharmaceutical ingredients in Ukraine due to the principles of pharmaceutical law.

Material and methods: The UN Convention, EU Directives, Laws of Ukraine, legislation concerning rules circulation of combined drugs with controlled active pharmaceutical ingredients; 10 judgments of district courts regarding convicted persons, who have committed drug illegal circulation; sources of scientific literature; Internet resources have been used. Research was conducted using legal, forensic and pharmaceutical, documentary and system analysis methods.

Results: The classification of combined medicines due to the content of controlled active pharmaceutical ingredients was offered on the basis of studying organizational and legal peculiarities of their circulation order in Ukraine. It was determined that there are no rules in Ukraine for importing and exporting combined medicines containing narcotic and psychotropic ingredients for individuals. This stage of circulation requires regulation and improvement.

Conclusions: It was recommended to use the principle of attributing combined drugs to a separate category of controlled drugs in developing legal documents (laws, regulations, directives, guidelines), as well as in compiling lists of narcotic (psychotropic) combined drugs containing small quantities of controlled active pharmaceutical ingredients.

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