Psychopathological disorders in people married to HIV-infected injecting drug users.

Introduction. At the end of the 20th century psychological descriptions of the state of the people residing together with a chemically dependent person appeared for the first time. This can be his/her parent family or a family created by him (her) with a husband (wife) and children, this states are defined as codependency. The objective of the present research was to study clinical-psychopathological manifestations of the state of codependency in the people married to HIV-infected injecting drug users.

Materials and methods of the research. 113 people – spouses of HIV-infected injecting drug users were examined, they were married no less than 3 years, that is, were codependent, among them there were 98 women (86.7%) and 15 men (13.3%). The clinical-psychopathological method was used in the work and processing of the statistical data and their analysis were carried out taking into account the Student's t-test.

Results. Out of 98 codependent women narcological diseases were observed in 21.4% (21 persons) and mental disorders in 97.9% (96 persons). Out of 15 men married to HIV-infected women - injecting drug users 2 men (13.3%) suffered from alcoholism; 7 men (46.7%) had a recurrent depressive disorder and 4 men (26.7%) - hysterical personality disorder. The total number of diseases exceeded the total number of patients as one and the same person could have several diagnoses (comorbidity). A peculiarity of the codependency clinical manifestations in men was absence of the neurotic register disorders while comorbidity could be observed both in men and women.
Conclusion.
The analysis of the above-stated data proves that codependency in people married to HIV-infected opium drug users is manifested by four disorder categories: mental and behavioural disorders due to use of psychoactive substances; affective behavioural disorders; neurotic ones connected with stress and somaform disorders; mature personality disorders and behavioural disorders in adults.
It should be mentioned that codependent women have all the above-mentioned disorders while codependent men do not suffer from neurotic register disorders. The codependency is most often manifested by psychoactive substance abuse and affective disorders, besides their comorbidity observed both in men and women is also typical.
**Key words:** codependency, women, men, HIV infection, injecting drug users.

**UDC:** 616.341:616.341-007.272

**Burkov M.V.**

**Changes in the wall of small intestine in the dynamics of acute intestinal obstruction in the experiment**

Vinnitsa National Pirogov Memorial Medical University (56 Pirogov st., Vinnitsa, 21018, Ukraine)

**Introduction.** Acute intestinal obstruction is a topical problem of emergency surgery. In the structure of urgent surgical diseases of the abdominal cavity the intestinal obstruction holds 4th-5th place and is associated with high mortality.

**Materials and methods.** The experiment was conducted on dogs with weight 10-15 kg. Animals were divided into control and 3 experimental groups. On the animals of all experimental groups were performed model of acute intestinal obstruction. Histological material was taken from the animals on the 3, 4 and 5 day, respectively. Also blood sampling was performed to determine the level of endogenous
intoxication.

**Results. Discussion.** On the third day we saw decreasing of villi height and intestinal epithelial desquamation on their apex, disorder of the circulation in the form of plethora. Villi cells of mucosal epithelium were enriched by goblet cells. On the fourth day we saw destruction and desquamation of the epithelium at the apical portion of the intestinal villi. Lamina propria was in edematous condition, with some areas of hematomas. The number of goblet cells decreased. In the muscularis externa necrotic changes in the smooth muscle cells were dominative. On the fifth day edema of intestinal villi and crypts was maximal. A large number of villi were destroyed. In the intestinal wall was a large amount of hematomas. Necrotic changes in the smooth muscle cells dominated in the muscularis externa. In the dynamics of intestinal obstruction development, the level of molecules with average weight of blood serum raised daily.

Conclusions and recommendations for further research
1. Endogenous intoxication initiates the development of circulatory disorders, the development of hypoxia, edema of the villi, hematoma formation and development of parenchymatous myositis.
2. With increasing observation period observed deterioration of the small intestine condition until formation of necrotic changes.

**Summary.** The article presents results of research of the small intestine condition by acute intestinal obstruction. Results of histological studies of the small intestine wall on the third, fourth and fifth day from the moment of intestinal obstruction modeling are described. Values of the level of endogenous intoxication in a specified time of the experiment are given.

**Key words:** intestinal obstruction, small intestine, structure, endogenous intoxication.

**UDC:** 616.12 – 073.97 – 053.7;796.071

Sarafynuk L. A., Kyrychenko Y. V., Kyrychenko I. M.

Eatures amplitude of ecg parameters in young people and athletes
Summary. This paper established amplitude electrocardiographic parameters in the total group of persons involved and not involved in sports of different somatotypes.

Key words: electrocardiography, amplitude indexes, athletes, nonsportsmen, somatotype, adolescence.

Influence of normal saline solution on indices of energy metabolism in the rats’ brain on model of acute cerebral ischemia

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Introduction

One of the trigger mechanisms of ischemic damage of the brain is disorder of the energy supplying processes. Quite obvious that efficiency of the neuroprotective remedies mostly is determined by their ability to normalize metabolism of adenyl nucleotides and associated with it biochemical processes in the brain.

For thorough determination of presence in the 0,9% NaCl solution protective influence on the brain by acute disorder of the cerebral circulation it was interesting to investigate influence of the given preparation on condition of the energetic metabolism in the ischemic brain.

The aim of this research was to characterize influence of isoosmolar 0,9% NaCl solution on condition of the energetic metabolism of the rats’ brain on the model of ischemic stroke (ADCC).
**Materials and methods.** ADCC was modeled by means of bilateral ligature of internal carotid arteries in the rats. 0,9% NaCl solution was introduced intravenous in conditionally effective dose 2,5 ml/kg 2 times a day (5,0 ml/kg a day). First injection was conducted in 30 minutes after ADCC and further every day in every 12 hours during 7 days. Animals of the control pathology group didn’t get any therapy (ADCC without treatment).

Content of adenyl nucleotides was determined in the deproteinized trichloroacetic extract of the brain tissues 1:10 (10% solution of trichloroacetic acid) by chromatographic method. Obtained results were processed by method of multivariate statistics by using Student t-test. Changes of data was statistically significant by p≤0,05.

**Results and discussion.** During estimation of adenyl nucleotides metabolism in the brain tissues it was revealed that in the rats with ischemic damage of the brain dysbalance was observed between level of adenyl nucleotides, namely developed deficiency of main ATP macroerg and accumulated mono- and diphosphates of adenosine. It indicates inhibition of oxidative phosphorylation and disorder of its connection with tissue respiration.

Injection of 0,9% NaCl solution to the rats with ADCC during 7 days was accompanied only by insignificant changes of content of adenyl nucleotides comparing with group of control (untreated) animals.

Investigation of lactate, pyruvate content and their correlation have shown that on condition of the ischemic insult process of aerobic oxidation of glucose inhibited and lactate acidosis in the brain tissues developed.

Injection of 0,9% NaCl solution on condition of brain ischemia caused little but statistically significant increasing of pyruvate level, decreasing of lactate level and ratio lactate/pyruvate comparing with untreated animals on 4th and 7th day of therapy. Thereby, 0,9% NaCl solution which was used for rats treatment in the acute period of ADCC comparing with untreated animals caused sufficiently expressive influence on processes of aerobic and anaerobic oxidation of carbohydrates and consequently contributed increasing of neurons energy potential.
Conclusions.

Treatment of rats with model of cerebral ischemia by 0,9% NaCl solution in some degree contributes renewal of disordered energy metabolism processes and eliminates metabolic acidosis in the ischemic brain. Therapeutic effect which was obtained in the experiment through infusion therapy 0,9% NaCl solution is the basis for studying protective influence of other groups of infusion preparations by acute disorder of the cerebral circulation.

**Key words:** ischemic stroke, infusion therapy, normal saline

**UDC:** 572.512:616.853-053.7(477.44)

**Shevchuk Yu. G**

**Differences of total, longitudinal and ral body size between healthy and diseased epilepsy younkers and girls podolya**

Vinnitsa National Pirogov Memorial Medical University (56 Pirogov st., Vinnitsa, 21018, Ukraine)

**Summary.** We investigated the differences of total, longitudinal and ral body size between common groups of patients with epilepsy and healthy young men and women and between the groups of patients with epilepsy and healthy boys and girls - brachycephalic. Found that most of the young men of comparative parameters has no statistically significant differences or trends differences. The girls are statistically significant differences or trends established for the majority of differences of total (except for the length of the body) and ral (except ral sizes in the lower third of the forearm wrist and chest as you exhale) body size. The above figures were greater in girls with epilepsy.

**Key words:** body size, epilepsy, juvenile age.

**UDC:** 1616.12 - 008.3:546.41

**Bandurka N.M.**

**Experimental study of cardiac arrhythmias mechanisms in overload of**
cardiomyocytes with calcium ions and methods of its correction
Vinnitsa National Pirogov Memorial Medical University (56 Pirogov st., Vinnitsa, 21018, Ukraine)

Annotation: The article presents the results of experimental investigations on 158 laboratory rats, which triggered cardiac arrhythmia with calcium -dependent mechanism of arrhythmogenesis and studied the effect of Amiodarone, Rhythmokor, Trymetazidin and their combinations on the course of cardiac arrhythmias in these conditions. In membranedestruktive models arrhythmias it is detected that Rhythmokor combination with Amiodarone antiarrhythmic had (62% (p<0,01)), antyfibrylation (75% (p<0,001)) and cardioprotective effects (75% (p<0,001)). Antiarrhythmic effect and antifibrylation showed Rhythmokor (43% (p<0,05) and 51% (p<0,05)), and cardioprotective Rhythmokor, and the combination of Amiodarone with Trymetazidin (71% (p<0,001) and 57% (p<0,01), respectively). In caffeine-strophanthin models arrhythmias recovery of sinus rhythm was observed in the application of Amiodarone (50% (p<0,05)), Rhythmokor (43% (p<0,05)) and Rhythmokor combination with Amiodarone (100% (p<0,001)). In calcium chloride models arrhythmias was detected antiarrhythmic effect of Amiodarone (62% (p<0,01)), Rhythmokor (50% (p<0,05)) and the combination of Amiodarone and Rhythmokor (75% (p<0,001)). It is concluded that the combined use of Amiodarone and Rhythmokor as antiarrhythmics has the prospects.

Key words: mechanisms arrhythmogenesis, calcium, antiarrhythmic drugs, Amiodarone, Rhythmokor, Trymetazidin.

Introduction. Worth of interest are the questions of cell permeability membranes of cardiomyocytes for Ca2+. It is proved that damaged cardiomyocytes accumulate Ca2+ ions. It is proved that regardless of the cause of pathological conditions (ischemia, toxic injury of cardiomyocytes, etc.) - the final result is the same - the cells are loaded with ions Ca2+. Although the mechanisms of accumulation in the cells of arrhythmgogenic ion is established and studied by researchers, but the possibility of pharmacological correction of these violations are investigated insufficiently.
**Materials and methods.** Experiments were performed on 158 laboratory rats, which previously anesthetized (nembutal 40 mg / kg in peritoneum). ECG was performed in standard lead II. In studies were used membranadestructive, caffeine and strophanthin - calcium chloride experimental models of cardiac arrhythmias. According to the quantity of drugs that were introduced, all the animals were divided into 7 groups: I - control; II group - Amiodarone (10 mg / kg); III - Amiodarone (5 mg / kg); IV - Trymetazidin (50 mg / kg); V - Rhythmokor (100 mg / kg); VI group - Trymetazidin (50 mg / kg) in combination with Amiodarone (5 mg / kg); VII group - Rhythmokor (100 mg / kg) and Amiodarone (5 mg / kg). The obtained data were treated statistically using computer programs Microsoft Excel XP software package of Microsoft Office XP.

**Results.** By playing membranadestructive models arrhythmias it is detected that Rhythmokor combination with Amiodarone antiarrhythmic had (62% (p<0,01)), antyfibrilation (75% (p<0,001)) and cardioprotective effects (75% (p<0,001)). Antiarrhythmic effect and antifibrilation showed Rhythmokor (43% (p<0,05) and 51% (p<0,05)), and cardioprotective Rhythmokor, and the combination of Amiodarone with Trymetazidin (71% (p<0,001) and 57% (p<0,01), respectively). In caffeine - strophanthin models arrhythmias recovery of sinus rhythm was observed in the application of Amiodarone (50% (p<0,05)), Rhythmokor (43% (p<0,05)) and Rhythmokor combination with Amiodarone (100% (p<0,001)). In calcium chloride models arrhythmias was detected antiarrhythmic effect of Amiodarone (62% (p<0,01)), Rhythmokor (50% (p<0,05)) and the combination of Amiodarone and Rhythmokor (75% (p<0,001)). It is concluded that the combined use of Amiodarone and Rhythmokor as antiarrhythmics has the prospects.

**Conclusions:** 1. The combination of ion channel blocker Amiodarone with antiarrhythmic Rhythmokor has high efficiency in overload cardiomyocyte calcium ions through synergetic action.

2. Membranaprotektin drug Rhythmokor showing a protecting and adjustment effects on membrane function kationtransporting (mainly for Ca2 +) is able to increase the antiarrhythmic efficacy of Amiodarone.
3. Combination of Amiodarone with Rhythmokor the potential to be used in a clinical setting in patients with cardiac arrhythmias.

**UDC**: 616.34-007.272-07+611-42

**Bulko M.P.**

**Macro and micro peculiarities lymphoid nodes of the small intestine in the development of high acute intestinal obstruction**

Vinnitsa National Pirogov Memorial Medical University (56 Pirogov st., Vinnitsa, 21018, Ukraine)

**Summary.** The macro-and microscopic features of the lymphoid follicles of the small intestine in the dynamics of high obstructive acute intestinal obstruction (AIO) was investigated. It was found that both the peripheral and the central portions of the small bowel lymph follicles high obstructive AIO reduced volume fraction of small lymphocytes in 1,2-1,3 times. In the peripheral zone of follicles in 4,9-5,3 fold increase in the concentration of disrupted cells and macrophages appear in the central portions decreases 1,9-2,1 times the content of mitotically dividing cells, and increases the proportion of disrupted cells (p<0,05).

**Key words:** intestinal obstruction, the immune system, lymphoid follicles of the small intestine.

**UDC**: 616-073.7:611.98-053.7

**Ivanitsa A.O.**

**Gender differences of shin hemodynamic parameters in healthy city boys and girls of different age**

Vinnitsa National Pirogov Memorial Medical University (56 Pirogov st., Vinnitsa, 21018, Ukraine)

**Summary.** Rheovasographic shin parameters of 335 healthy individuals adolescence of Podilskiy region of Ukraine (167 girls aged 16-20 years and 168 boys aged 17-21
years) were investigated. It is shown that takes place statistically significant difference between rheogram parameters tone of the shin arteries among girls and boys of different somatotype. Indicator of the tone of the all shin arteries was significantly smaller in boys than in girls, those with mesomorphic, ecto-mesomorphic and middle intermediate somatotype. At the same time, indicators of the shin arteries of the large, medium and small caliber significantly lower only in youths with mesomorphic somatotype than girls mesomorphs.

**Key words:** реограмма голени, производные показателей реовазограммы, пол, соматотип.

**UDC:** 582.282.23:57.085:615.28

Sorocoumova L.K., Shevchuk N.M., Zaderey N.V.

**Affection the antiseptic medicine oftalmodek on to tissue of the makroorganism**

Microbiology, virology and immunology department of Vinnitsya national medical university named after M.I.Pyrogov (Pirogov str., 56, Vinnitsya, Ukraine)

**Summary.** Morphological assay of certain of eye, assistant apparatus and parenchymatous organs were investigated after applying of antiseptic medicine oftalmodek with decametoxine.

**Key words:** antiseptics, decametoxine, oftalmodek.

**Introduction**

The development of the modern pharmaceutical industry has led to the creation of new antiseptic medicines. Annually on the pharmacy market of hundreds of drugs, a dozen of them in ophthalmology. Lack of information about new medicines complicates their rational use.

**Materials and methods**

The antiseptic effect of the drug oftalmodek 0,02 % on the structure of visual organ and parenchymatous organs studied in rabbits of chinchilla breed.

**Results**

*Conjunctiva.* Microscopic examination established that the conjunctiva in this group
of animals in its structure was not different from that in comparison with the control. 

*The cornea.* Macroscopic research of the cornea showed that the application of antiseptic drug ophtadek visible lesions were found. The microscopic structure of the cornea is not broken. *Iris.* Structure parents-stromal elements of the iris in this group of animals did not differ from that in comparison with the control group. *The heart.* The muscle fibers of the myocardium is well expressed. Transverse and longitudinal striation saved. Kernel cardiomyocytes rounded, normohromnaja. In muscle fibres no destructive and dystrophic changes. *The liver.* The structure of the liver is not violated. Hepatocytes normal size. Cell nuclei of different sizes. Meet small, medium and large kernel. *The kidneys.* Macroscopic structure of the authority is not broken. Microscopic examination of the glomerulus of the correct form. Stroma body without pathological changes.

When applying eye drops oftalmodek in constituent elements auxiliary apparatus of the eye, the eye and parenchymatous organs detected changes, which do not differ from those in the comparison with the control group of animals. Antiseptic drug oftalmodek has no irritating effect, does not cause the tissues of the development of degenerative, inflammatory changes.

**Conclusions**

1. In clinical practice, purulent-inflammatory diseases of the eye take a leading role in the structure of morbidity of the organ of vision. The main role in treatment and prophylaxis of pyo-inflammatory processes belongs to antimicrobials.
2. Eye drops oftalmodek containing decamethoxin, have no irritating effect, does not cause in the tissues of dystrophic changes, as evidenced by the structure parenhимatosny-stromal elements of the studied objects.

Further investigated planned preclinical study of the creation of new antiseptic preparations, for use in ophthalmology.

**UDC:** 615.28:616-078

Palii V.G., Suhlyak V.V., Bereza B.M., Gonchar O.O., Kryzhanovskaya A.V., Burkot V.M., Zaderey N.V., Oleiynyk D.P., Kordon Y.V.
Study of antimicrobial properties of antiseptics in different experimental conditions

Microbiology, virology and immunology department of National medical university named after M.I.Pirogov (Pirogov str., 56, Vinnitsa, Ukraine)

Summary. The article presents the results of a study of antimicrobial properties of antiseptics (gorosten, decamethoxin, dekasan, septefril) in various unfavorable conditions of the experiments. It is proved that the pH of the culture medium, serum proteins change antiseptic antimicrobial activity.

Key words: antiseptics, properties, gorosten, decamethoxin, dekasan, septefril, pH, protein load.

Introduction

In microorganisms continuously operating factors of the environment to ensure their growth, reproduction, formation of enzymes, toxins. Terms constantly depend on the composition of the nutrient medium, temperature, aeration, radiation, changes in pH, pressure, causing damage to cellular structures, accompanied by metabolic disorders. A number of adverse factors violate growth, bacteria, define them as a bacteriostatic effect. The purpose of this study - to examine the impact of adverse conditions on antimicrobial activity of antiseptic drugs dekasanum, decametoxine, horostenum, seftefryl.

Materials and methods

The study was performed on 20 strains of staphylococci isolated in patients with inflammatory diseases. The antimicrobial activity of the drug in terms of different hydrogen ion concentration was studied in media of pH 7.2; 6.0; 8.0. Study of antimicrobial properties was performed by serial dilutions. Antimicrobial activity of antimicrobials was determined by adding to the culture medium of 5 %, 10 % protein load.

Results

Established that at pH 6.0 antistaphylococcal activity of antiseptics studied decreased within one dilution of drugs and remained an effective doses to achieve local
therapeutic effect. At pH 8.0 horostenum, Decametoxin, dekasan, septefryl kept high bactericidal activity against clinical antibiotic-resistant variants of Staphylococcus. Medicinal antiseptic preparations exhibit stable bactericidal activity against antibiotic-resistant strains of Staphylococcus aureus in nutrient media containing serum in the order of 5 %, 10 %. It is proved that the increase in whey protein twice (10 %) 4-8 times increased MIC of antiseptic drugs over MIC in culture medium without serum. In our experiments found that antiseptics retain high bactericidal activity against antibiotic-resistant strains of Staphylococcus aureus, and may provide sufficient therapeutic efficacy for topical use in dental patients.

**Conclusions**

Antiseptic drugs horosten, Decametoxin, dekasan, septefryl retain high antimicrobial activity in adverse physical and chemical conditions. Antistaphylococcal activity of drugs in culture medium with a pH of 6.0 is shown at a concentration of 0.48 mg/ml to 3.9 mg/ml, while remaining efficient enough to pathogens of various inflammatory diseases. In nutrient medium, pH 8.0 antistaphylococcal activity at a high level of 0.24 mg/ml to 1.95 mg/ml. In the presence of 5 %, 10 % serum proteins in culture medium increases bactericidal antiseptic dose for strains of Staphylococcus aureus compared with controls and ranged from 0.48 mg/ml to 7.8 mg/ml.

**UDC:** 616.343 – 002.2 + 618.36 – 001.18 – 089.843] – 092.9

Shepitko K.V.

**Morphometric characteristics of rats’ jejunum wall in single subcutaneous introduction of cryopreserved placenta**

**Summary.** The experimental study has been carried out on 60 senior male rats. Dynamics of changes of morphometric parameters of total wall thickness, thickness of mucosa, submucosa, muscular and serous coats of jejunum has been shown. Single subcutaneous introduction of cryopreserved placenta causes changes of studied morphometric parameters. In this way indices of total wall thickness, thickness of mucosa and submucosa coats reacted by significant increase of their index maximum
on the 5th day with their recovery on the 30th day of the experiment to the values of intact group. The metric index of muscular coat thickness was at most significantly increasing from the 1st to 7th days with recovery to control values at the 30th day. The thickness of serous coat reacted by the significant thickening on the 5th day of observation. Its full recovery was observed on the 30th day of the experiment.

**Key words:** jejunum, cryopreserved placenta, morphometric, rats.

The purpose of the research was to establish changes in morphometric parameters of rats’ jejunum wall in subcutaneous introduction of cryopreserved placenta.

**Object and methods of research.** The object of the experimental study was the wall of the small intestine, extracted from 60 Wistar senior male rats. Rodents were divided into three groups: intact animals were included into Group I (5); Group II included controlling animals (10), which were made and sewed incision on the external surface of the thigh; 45 animals, which were one-time subcutaneously introduced with cryopreserved placenta, were included into Group III.

**The results of the research and their discussion.** So, single introduction of cryopreserved placenta fragment causes the increase of parameter from the 1st to 5th day \( p>0.05 \). From the 7th to 30th day insignificant reduction of overall thickness was discovered \( p>0.05 \). The analysis of indices of intact group and Group III showed that from the 1st to 10th day of the study the reliability of differences was significantly greater \( p<0.05 \) as compared with intact group. Starting from the 14th to 30th day of the study the reliability of differences was insignificant as compared with Group I \( p>0.05 \).

The analyses of jejunum mucosa thickness during the experiment showed the following changes. It has been established that between the terms of study from the 1st to 5th day the index was growing, but reliability of differences was not significant, though the difference was discovered while comparing the 1st and the 5th day of the study. From the 7th to 30th day this parameter was decreasing \( p>0.05 \). The analysis of mucosa thickness between the intact group and Group III showed its thickening right from the 2nd to 7th day with maximum value on the 5th day as compared with similar index in intact group \( p<0.05 \). Starting from the 10th to 30th day thickness of mucosa was reducing, but such
reduction was not significant as compared with intact group in (p>0,05).
The average index of submucous coat thickness between terms of study varied during the experiment. In this way, this index was increasing right on the 1st day with its maximum value on the 5th day of the experiment, but the reliability of the difference was not significant p>0,05. The analysis of interval between the 7th and 30th day showed no significant decrease of this index during this period of time. While comparing index of submucous coat thickness in Group III with intact group it should be emphasized that from the 2nd to 5th day of the experiment the index was significantly higher in (p<0,05). Starting from the 7th to 30th day no significant difference between Group I and Group III has been detected p>0,05.

Morphometric analysis of muscular coat thickness showed the growth of such index from the 1st to 5th day, but no significant difference has been detected (p>0,05). Starting from the 7th to 30th day muscular coat thickness was reducing, but this thickening was not significant between terms of study. Having considered this parameter relative to intact group, starting from the 1st to 7th day it was significantly higher in (p<0,05), and from the 10th to 30th day this index was higher relative to intact group, but the difference was not significant in p<0,05.

The analysis of jejunum serous coat indices between terms of study showed the growth of the index from the 1st to 5th day, but no significant difference has been detected. Starting from the 7th day serous coat thickness was reducing and the index was significantly lower as compared with 2nd, 3rd and 5th days. Further analysis of the 10th-30th day has not showed significant changes and was similar to the index, stated on the 7th day. Comparison of this index with intact group showed that on the 1st to the 5th day it was significantly higher in (p<0,05).

From the 7th to 30th day this index was scarcely similar to intact group (p<0,05).

**Conclusion.** The experimental study has been carried out on 60 senior male rats. Dynamics of changes of morphometric parameters of total wall thickness, thickness of mucosa, submucosa, muscular and serous coats of jejunum has been shown. Single subcutaneous introduction of cryopreserved placenta causes changes of studied morphometric parameters. In this way indices of total wall thickness, thickness of
mucosa and submucosa coats reacted by significant increase of their index maximum on the 5th day with their recovery on the 30th day of the experiment to the values of intact group. The metric index of muscular coat thickness was at most significantly increasing from the 1st to 7th days with recovery to control values at the 30th day. The thickness of serous coat reacted by the significant thickening on the 5th day of observation. Its full recovery was observed on the 30th day of the experiment.

**Perspectives of further research.** It is planning to study the dynamics of morphological and metrical changes in ileum during introduction of cryopreserved placenta to identify the patterns of this process.

**UDC:** 572.087-055.26

**Tarasjuk S.A.**

**Anthropologic examinations in assessment of mother’s and child’s physical state and its role**

Vinnitsa National Pirogov Memorial Medical University (56 Pirogov st., Vinnitsa, 21018, Ukraine)

**Summary.** The features of physical development of newborns at the Vinnitsa town clinical maternity hospital №2 they were born at physiology births for somatically healthy women are examined in this article. Both new born and pregnant were conducted with the help of anthropometric research, defining the component composition of mass of body for the women of different constitutional groups. For determination of various constitutional types we also used the index of Quetelet, Mass-length coefficient for the new born who were born in the women with stenoplastic somatotype which was approached to 58,92 it was considerably below the norm. This index was one of major, which specifies on the possible foetus hypotrophy.

**Key words:** pregnancy, newborns, women’s somatotypes, anthropometry.

**UDC:** 615.28:615.015.8
The study of antiseptics in the formation of drug resistance in microorganisms

Vinnitsya national medical university named after M.I. Pyrogov (Pirogov str., 56, Vinnitsya, Ukraine)

Summary. The aim of the research was to study the formation of resistance in clinical strains of S. aureus, E. coli, Salmonella enteritidis spp, S. typhimurium spp., S. haifa spp to antiseptic medicines dekasan®, aurisan®, decamethoxin, miramistin, atoniy. It is proved that the formation of the resistance of the different types of Salmonella to dekasan®, aurisan®, decamethoxin, miramistin, atoniy were slow and did not reach high values (2 - 4 times). It is established that dekasan meets modern demands made antiseptics exceeds antimicrobial action miramistin, atoniy.

Key words: antiseptics, resistance, aurian, deka san, aurisan, decamethoxin, miramistin, atoniy.

Introduction

The consequences of application of antibiotics in medicine appeared effective. They are a to reduce death rate from infectious diseases, decreased the amount of the used for setting fire complications.

The next mechanisms of forming of resistance are set transformation inactivation of molecule of antibiotic. Such mechanism is in basis of forming of firmness to the antibiotics. Modification of structure of molecule of antibiotic as a result is lost him biological activity. R- of plasmide, encode proteins that cause various modifications of enzymes. Formation of spill-way of metabolism bacteria for a biosynthesis it appeared insensitive to this preparation. Such mechanism is the basis of firmness to sulfanilamidums.

Antimicrobial facilities have molecular structures in a bacterial cage, what it is not in a cage: new mechanism of transport in a bacterial cage; firmness is to the protective enzymes. Research aim. To learn forming of proof variants at clinical strain.

Results
Research of influence of antiseptic preparations: decamethoxin, dekasun, aurisan, miramistin, aethoniy showed table. 1 that forming of proof is in colon bacillus, a staphylococcus to decamethoxin passed slowly. It is well-proven that firmness of Salmonella was formed slowly. After twenty arcades on optimal environments the sensitiveness of Salmonella grew to dekasun in four times. In researches, forming of firmness is studied at strain of bacterium.

**Conclusions**

1. Decamethoxin, aurisan to apply for the prophylaxis of the festering-used for setting fire diseases of different localization, by the caused persistence to antibiotics strains of bacteria. In future it is expedient to define forming of resistance at other types of microorganisms to DKM, DK MR.

**UDC:** 615.28:616-078

Paliy V.G., Suhlyak V.V., Bereza B.M., Gonchar O.O., Kryzshanovskaya A.V., Burkot V.M., Zaderey N.V., Oleiynyk D.P., Kordon Y.V.

**Study of antimicrobial properties of antiseptics in different experimental conditions**

Microbiology, virology and immunology department of National medical university named after M.I.Pirogov (Pirogov str., 56, Vinnitsa, Ukraine)

**Summary.** The articl presents the results of a study of antimicrobial properties of antiseptics (gorosten, decamethoxin, dekasun, sepetfril) in various unfavorable conditions of the experiments. It is proved that the pH of the culture medium, serum proteins change antiseptic antimicrobial activity.

**Key words:** antiseptics, properties, gorosten, decamethoxin, dekasun, sepetfril, pH, protein load.

**Introduction**

In microorganisms continuously operating factors of the environment to ensure their growth, reproduction, formation of enzymes, toxins. Terms constantly depend on the
composition of the nutrient medium, temperature, aeration, radiation, changes in pH, pressure, causing damage to cellular structures, accompanied by metabolic disorders. A number of adverse factors violate growth, bacteria, define them as a bacteriostatic effect. The purpose of this study - to examine the impact of adverse conditions on antimicrobial activity of antiseptic drugs dekasanum, decametoxine, horostenum, septefryl.

**Materials and methods**

The study was performed on 20 strains of staphylococci isolated in patients with inflammatory diseases. The antimicrobial activity of the drug in terms of different hydrogen ion concentration was studied in media of pH 7.2; 6.0; 8.0. Study of antimicrobial properties was performed by serial dilutions. Antimicrobial activity of antimicrobials was determined by adding to the culture medium of 5%, 10% protein load.

**Results**

Established that at pH 6.0 antistaphylococcal activity of antiseptics studied decreased within one dilution of drugs and remained an effective doses to achieve local therapeutic effect. At pH 8.0 horostenum, Decametoxin, dekasan, septefryl kept high bactericidal activity against clinical antibiotic-resistant variants of *Staphylococcus*. Medicinal antiseptic preparations exhibit stable bactericidal activity against antibiotic-resistant strains of *Staphylococcus aureus* in nutrient media containing serum in the order of 5%, 10%. It is proved that the increase in whey protein twice (10%) 4-8 times increased MIC of antiseptic drugs over MIC in culture medium without serum. In our experiments found that antiseptics retain high bactericidal activity against antibiotic-resistant strains of *Staphylococcus aureus*, and may provide sufficient therapeutic efficacy for topical use in dental patients.

**Conclusions**

Antiseptic drugs horosten, Decametoxin, dekasan, septefryl retain high antimicrobial activity in adverse physical and chemical conditions. Antistaphylococcal activity of drugs in culture medium with a pH of 6.0 is shown at a concentration of 0.48 mg/ml
to 3.9 mg/ml, while remaining efficient enough to pathogens of various inflammatory diseases. In nutrient medium, pH 8.0 antistaphylococcal activity at a high level of 0.24 mg/ml to 1.95 mg/ml. In the presence of 5%, 10% serum proteins in culture medium increases bactericidal antiseptic dose for strains of *Staphylococcus aureus* compared with controls and ranged from 0.48 mg/ml to 7.8 mg/ml.

**UDC:** 579.22:579.24:579.61:616.08

**Vlasenko I.G., Novytskyi A.O., Vlasenko V.V.**

**Diagnostic medium for helicobacter pylori detection in the gastro-intestinal diseases**

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**Summary.** The work is dedicated to investigation of new proposed rapid urease test for *Helicobacter pylori* diagnosis, which allows simultaneously detect pH of gastric mucosa. The report showed that specificity, sensitivity, positive and negative prognostic values and accuracy compared with urea breath test were 91.4% (confident intervals (CI) 85.3 - 94.4%), 94.4% (CI 88.1 - 96.5%), 95.8% (CI 88.6 - 97.1%), 88.9% (CI 79.9 - 94.1%), 93.5% (CI 89.3 - 95.6%) respectively. Positive correlation of moderate strength of proposed rapid urease test results with intragastric pH-metry was observed.

**Key words:** Helicobacter pylori, rapid urease test, intra-gastric pH-metry.

**Introduction**

According to the literature the proportion of *Helicobacter pylori* (H. pylori) in chronic gastritis, gastric ulcer and duodenal ulcer reaches 70-95%. There are several methods for H. pylori diagnosis. They are divided into direct, based on direct detection of the pathogen, and indirect – the products of metabolism definition. The latter applies particularly rapid urease test (RUT). It is based on the determination of urease activity of H. pylori in biopsies of gastric mucosa by immersing it in a liquid or gel-like medium containing urea, pH indicator and phosphate buffer. In the presence of
urease, urea is hydrolyzed to ammonia, which changes the pH of the environment that changes color of indicator.

The test gives false negative results at a low level of contamination of tissue ( <1000 cells in the biopsy piece) when the total urease activity is low, when various enzymatic activity of bacteria and uneven distribution of bacteria in gastric mucosa are present. In the available literature, we did not find the investigation of the correlation between the assessment of mucosal piece pH and the data of endoscopic pH metry.

The aim of this study was to increase the sensitivity of the rapid urease test for H. pylori detection, reduce time for endoscopic examination, reduce the cost of resources for pH meters, and study the correlation between the pH level of gastric mucosal biopsy piece and endoscopic pH meter data.

**Materials and methods**

To solve the problem diagnostic medium for the rapid urease test was constructed. It contained a mixture of indicators dimethyl orange, methyl red and bromtymol blue, instead of indicator phenol red, which has a pH color transition 6,6 – 8,0.

The resulting mixture was grind in a mortar and measured for 0.02 g in microtiter wells or glass bottles with a capacity of 10 - 15 ml, such as in vials from the antibiotics, closed by rubber stopper and aluminum caps. To prepare the medium one must open the bottle, add 0,5-1,0 ml of saline and mix to dissolve. Thus, the following working concentrations of indicators dimethyl orange - 0,015 – 0,03 % methyl red - 0,005 – 0,01 % bromtymol blue – 0,02 – 0,04 %.

The method was performed as follows. During endoscopy we took 2 biopsies of the mucous membrane of the stomach (antrum and body). Placed them in bottles with the medium setting for rapid urease test. We started the countdown, watching the color change of the medium. This made it possible to record the pH biopsy piece within a wide range - from pH less than 1,5 to 7,0 or more. The color change of the reagent reflects mucosal pH data sections, and the color change to green showed the biopsy urease activity due to the presence of a H. pylori.

*Urea breath test (UBT).* We used ammonia breath test "Helic - test" (AMA - med ,
The color of reagent indicated the pH of biopsy sample by the color change that occurred immediately. Discoloration of the environment that characterized the shift of pH to the alkaline side showed the presence of H. pylori in the same piece. This color change took place during the first 5 - 40 minutes. Thus 107 patients that underwent fibrogastroduodenoskopy (FGDS) but the urease breath test (DUT) as a control. The proposed urease test gave 68 true positive results in 3 false positive and 32 true negative results at 4 false negative compared with DUT.

The next step of the study was to compare the proposed test with the results of intragastric pH-metry. For more convenient interpretation of the results, we compared a pH value obtained with the proposed test with functional interval (FI) pH meter. Analysis of the data showed that the patients surveyed in the vast majority (74 persons, 69,2 %) were characterized with hyperacidity (lowering the pH to 1,3 +0,23). However, in 23 (21,5 %) pH of gastric contents meet normoacidity condition (pH meter data).

When analyzing the state of the acid-production function, we found that increased acidity often observed in patients with duodenal ulcer (49,3 ± 3,3) %, slightly less with erosive gastroduodenitis (31,3 ± 3,0) %, φ * = 1,29, p > 0,05 and significantly less in chronic gastroduodenitis (19,4 ± 2,0) %, φ * = 1,89, p < 0,05.

When comparing the results intragastric pH meter and the proposed method found a positive correlation of moderate strength (r = 0,65).

Conclusions

1. The proposed urease test showed high sensitivity, specificity and accuracy of detection of Helicobacter pylori in gastric mucosal biopsy specimens.
2. Studies have shown that the proposed urease test can be an alternative for intragastric pH measuring when one needs to perform the research on both Helicobacter pylori and gastric secretory function during gastroscopy.
3. In the future, it would be possible to determine the pH of the mucosal sites,
depending on the presence of Helicobacter pylori, and research pH of the duodenal mucosa.

**UDC:** 579.2:615.28:615.454.1]:616-001.4-022

**Sthanyuk Y.A., Minukhin V.V., Lyapunov M.O., Lysokobylka O.A.**

**Study antimicrobial activity of ointments containing ofloxacin and levofloxacin on the main causative agents of wound infection**

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**Summary.** We have studied the antibacterial activity of 11 ointments containing ofloxacin and 11 ointments containing levofloxacin on the standard strains of *Escherichia coli*, *Pseudomonos aeruginosa* and *Staphylococcus aureus* in experiments *in vitro*. It was noticed that in cases of usage of the ofloxacin water-soluble ointment with 10 % farmasolv the biggest zones of growth retardation of the *P. aeruginosa* strain and a tendency to increase with addition of 10 % DMSO, 5 % - 10 % transkutol P, 0,5 % trilon B have been registered. Significant increase was observed in zones of growth retardation at adding trilon B and 5 % DMSO, 10 % DMSO and a tendency to increase with addition of 5 % DMSO, 5 % farmasolv, 10 % transkutol, 0,5 % trilon B as effect of water-soluble ointments containing levofloxacin.

**Key words:** ointments, ofloxacin, levofloxacin, *E. coli*, *P. aeruginosa*, *S. aureus*.

**Introduction**

According to the world and national literature a tendency of quantitative reduction of effective antimicrobials for the treatment of pyoinflammatory wound complications is being observed currently. The resistance to prevalent antibiotics developed in many common pathogens makes conventional therapy ineffective.
Severe septic complications are often caused by gram-negative bacteria including *Pseudomonas aeruginosa* and *E. coli, Staphylococcus aureus* leads in the structure of the wound infectious agents.

The purpose of this study is to investigate antibacterial activity of the water-soluble ointments containing ofloxacin and levofloxacin concerning *Escherichia coli, Pseudomonos aeruginosa* and *Staphylococcus aureus*.

**Materials and methods**

Experimental study of antibacterial activity of 22 ointments was carried out on *E. coli* ATCC 25922, *P. aeruginosa* ATCC 27853 and *S. aureus* ATCC 25923 standard strains.

The examined ointments included ofloxacin and levofloxacin antibiotics as active antibacterial substances (in 11 ointment samples in each group). Every experimental group included one sample ointment produced on polieyleny oxide base (PEO) which all were randomly designated with number number 0, LO, the other ten samples (from number 1 to number 10 and number 11 to number 20) – on poloxameric base from that contained many auxiliary substances (propylene glycol, dimethyl sulfoxide, farmasolv, transcutol P or trilon B) in varying amounts.

To determine antibacterial effect of ointments the agar diffusion method ("wells") was used according to the Guidelines for the study of the specific activity of antimicrobial drugs.

**Conclusions.**

1. Experiments in vitro of antibacterial activity of ofloxacin ointment on poloxameric base with 10 % farmasolv demonstrated significantly larger areas of growth retardation compared to those of *P. aeruginosa* ATCC 27853 and a tendency to their increase on with adding 10 % DMSO, 5 - 10 % transcutol P, 0,5 % trilon B.
2. The study of levofloxacin antimicrobial activity in ointments on poloxameric base concerning *P. aeruginosa* ATCC 27853 demonstrated a significant increase in the diameter of the growth retardation areas at adding trilon B and 5 % DMSO, 10 % DMSO.
3. Composition base and solvents in ointments with ofloxacin and levofloxacin do not
affect significantly on the growth retardation areas of *E. coli* ATCC 25922 and *S. aureus* ATCC 25923 standard strains.

UDC: 579.8: 615.281:615.33:616.24-002.363


Against causative agents of upper respiratory tract infections in experiments in vitro

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Summary. The synergy of antibacterial action of manuka oil and some antibiotics against opportunistic pathogens - causative agents of upper respiratory tract infections was found in the experiment. The most effective was its combination with azithromycin, doxycycline, cefoperazone and cefotaxime.

Key words: manuka essential oil, antibiotics, respiratory tract infections.

Introduction

Antimicrobial therapy of respiratory tract infections is complicated by the increasing resistance of pathogens to antibiotics. The use of antimicrobial compositions containing medicines with different mechanisms of action, is a priority of searching new ways to influence the bacteria in order to prevent the formation of antibiotic resistance.

The aim of the study was to investigate the effectiveness of combined use of Manuka essential oil and antibiotics in relation to causative agents of infectious respiratory diseases in experiments in vitro.

Materials and methods

As a test cultures reference strains of microorganisms were used: Staphylococcus aureus ATCC 25923, Staphylococcus epidermidis ATCC 14990, Escherichia coli
ATCC 25922, Klebsiella pneumoniae ATCC 5505, Pseudomonas aeruginosa ATCC 27853, Pseudomonas aeruginosa ATCC 9027, Proteus vulgaris XZ 4636, Proteus mirabilis HISK 160208, Candida albicans VKPHu 401/NCTC 885-653, as well as clinical strains isolated from patients treated at «Kharkiv municipal clinical hospital № 30».

Antibacterial and antifungal activity of essential oil of Manuka in experiments in vitro was studied by serial dilution and agar diffusion methods according to Ministry of Healthcare of Ukraine Order № 167 of 05.04.2007 and recommendations of the International Committee of Clinical Laboratory Standards (NCCLS, 2002).

**Results**

The investigation of antibacterial and antifungal activity of Manuka Oil by serial dilution and agar diffusion methods showed that both Gram-positive and Gram-negative bacteria and fungi of the genus Candida were sensitive to this substance. Moreover, both standard and clinical strains of Gram-positive bacteria were sensitive to much lower MIC (from 0.02 to 0.16 volume percent.) than Gram-negative bacteria. Among the latter the most sensitive were standard strains of E. coli ATCC 24923 and P. aeruginosa ATCC 27853 with MIC of 2.56 volume percent. Other investigated standard and clinical strains of Pseudomonas aeruginosa, Klebsiella and Proteus were sensitive up to MIC 5.12 volume percent. The standard strain of C. albicans 401/NCTC 885-653 characterized by sensitivity up to 0.64 volume percent.

The synergy of action of Manuka oil with azithromycin, cefuroxim and cefoperazone was found to S. aureus. Significant increase in activity of cefoperazone was found in case of all investigated strains, except P. vulgaris and P. mirabilis. Manuka Oil also potentiated the effect of cefotaxime against all studied Gram-negative organisms. Doxycycline and ofloxacin were more effective in combination with Manuka oil on E. coli, K. pneumoniae and P. vulgaris. Synergism of action was observed in combination of amikacin with Manuka oil on K. pneumoniae, P. mirabilis and P. vulgaris. The effective was also combination of azithromycin with Manuka oil to P. aeruginosa, P. vulgaris and P. mirabilis.

**Conclusions**
1. Manuka oil is highly active against Gram-positive bacteria and fungi of the genus Candida and has moderate activity against Gram-negative facultative anaerobic bacteria.

2. Manuka oil potentiates the antimicrobial properties of a number of antibiotics, such as azithromycin, cefuroxime, cefoperazone, doxycycline against gram-positive and gram-negative pathogens of the respiratory tract.

**UDC:** 615.8 + 616-03

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**Effects by electromagnetic fields using "scs-bars" on infectious agents**

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**Summary.** Influence of own spectra of electromagnetic fields of extremely low power in the very low frequency band leads to the inhibition of growth / reproduction of the studied strains of microorganisms and viruses in vitro and in humans. The data obtained showed promising future studies on the study of these mechanisms, as well as in the development of approaches to the treatment of infectious diseases using the disclosed methods.

**Key words:** infectious agents, "KSK-BARS" impact midget power fields in the frequency range of extra-long waves.

**Introduction**

Some researchers revealed a high sensitivity of different microorganisms to weak fields. Examination of particularly nonthermal (informative) action of very low frequency waves on infectious agents is of some interest. The aim of this research was studying influence of own spectra of electromagnetic fields of extremely low power in the very low frequency band on microbial growth and viruses replication by
Material and methods

Objects of research are *Staphylococcus aureus ATCC 25923*, *Staphylococcus aureus 2781*, *Escherichia coli ATCC 25922* strains, influenza A/Hong Kong/1/68 (H3N2) virus and patients with hepatitis C virus. Experiments with influence on the microbial culture in the liquid bouillon by the spectra of the S-markers data-base program of were conducted on strains *S.aureus ATCC 25923 “SCS-BARS”*, recorded before, and objects autospectral, recorded right before the effect. A single influence by S-markers spectra was conducted during 30 min, autospectrum in the inversed mode during 5, 15 and 30 min. *S.aureus 2781* strains were influenced by autospectrum in the inversed mode during 5 and 15 min, *E.coli* ATCC 25922 strain — during 15 min. For the studying influence of electromagnetic fields of extremely low power on influenza A/Hong Kong/1/68 (H3N2) virus replication *in vitro* there were used the generally accepted methods on determination of antiviral activity for influenza viruses on the chorionallantoic membrane (CAM) tissue culture. Quantitation of hepatitis C virus was conducted by the method of the polymerase chain reaction (PCR) “Real-Time” hepatitis virus RNA. RNA virus PCR fragments were selected and an original S-marker was created by the above-described method. The patient was effected ones a week in the inversed mode during 30 mines. In the process of exposure quantitation of hepatitis C virus was conducted with one month interval and after the end of exposure – in two months. Antiviral medical treatment was not conducted at the test period.

Results

The greatest distinctions in microbial growth were registered in 24 hrs after the exposure and by the point of 48 hrs the difference in microbial number between the control and experiment. The average indices of optical density of control samples of *S.aureus ATCC 25923* and *S.aureus 2781* in 24 and 48 hrs were lower than the control at average by 0,57 ± 0,10 and 0,75 ± 0,13 optical density units (ODU) by the McFarland. It corresponds to 4,1 ± 0,1 × 10^8 colony-forming units, ml (CFU/ml) and 4,7 ± 0,1 × 10^8 CFU/ml correspondently. The difference between the control and
experiment *S. aureus ATCC 25923* averaged 0.87 ± 0.12 EOP or 5.1 ± 0.1 × 10⁸ CFU/ml. The *E. coli ATCC 25922* response to exposure was similar to staphylococcal. Average indices of optical density of control samples in 24 and 48 hrs were lower than the control at average by 0.19 ± 0.10 and 0.16 ± 0.10 ODU, that is 0.57 ± 0.02 × 10⁸ and 0.48 ± 0.05 × 10⁸ CFU/ml correspondently. The exposure of the autospectral electromagnetic signal of extremely low power on the extracellular virus, which leads to decrease of A/Hong Kong/1/68 (H3N2) strain on the tissue culture CAM by 0.25 lg TID₅₀ in 8 and 48 hrs in comparison with the control unprocessed sample. After 24 hrs viral infective titers in experiment were less on 1.0 log₁₀ TID₅₀ than in control. The study on the possibility of effects on hepatitis C virus replication in a human organism included 6 patients with RNA HCV detected in blood plasma. The “viral load” was registered from 3.1 × 10³ to 7.6 × 10⁶ IU/ml. An increase of RNA HCV PCR-fragments by 1.15 × 10⁶ IU/ml was detected within the first month of conducting research, and then this index was falling down to the 3rd month up to 3.0 × 10⁴ IU/ml with initial values 6.3 × 10⁵ IU/ml or by 1.32 lg. The HCV S-marker and RNA HCV volume change according to the spectral-correlation test data during the first two months was differently directed.

**Conclusions**

1. Influence of own spectra of electromagnetic fields of extremely low power in the very low frequency band leads to the inhibition of growth / reproduction of the studied strains of microorganisms and viruses in vitro and in humans. The data obtained showed promising future studies on the study of these mechanisms, as well as in the development of approaches to the treatment of infectious diseases using the disclosed methods.

**UDC**: 616.24-002.1-0023.3/.4-053.2-085.281

**Davydenko N. V., Mishina M. M., Pachshenko U. V., Davydenko V. B.**

**Targeted antibiotic therapy of acute destructive pneumonia in children**

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Summary. The article highlights the results experimental and clinical study of addressable antibiotic therapy of acute destructive pneumonia in children. The advantages of antibiotic therapy on the basis of intratissue electrophoresis of antibiotics and local treatment by video-assisted thoracoscopic surgery of the focus of inflammation using ultrasound and ozone therapy are shown.

Key words: acute destructive pneumonia, intratissue electrophoresis video-assisted thoracoscopic surgery, ultrasound.

Introduction
Treatment of acute destructive pneumonia in children is difficult because of the virulence of the microorganisms and the ability to form biofilm formation that is most pronounced form of resistance. Moreover, the inflammation pronounced swelling and infiltration of tissues, microcirculatory disturbances, which makes it difficult the penetration of antibiotics in the area of inflammation, lowering effect of antibiotic therapy.

Therefore, nowadays it is important the finding ways to improve the effectiveness of antibiotic treatment of acute destructive pneumonia in children using the targeting of antibiotics into inflammatory treatment to strengthen local treatment.

Materials and methods
Experimental and clinical study experiment were carried out to explore the possibility of targeting antibiotics using intratissue electrophoresis. The technique of the intratissue electrophoresis is that antibiotics are mobile in the electric field of the electrochemical current. The antibiotic injects intravenously and the influence of the electrophoresis makes it movement is directed from the main channel of blood circulation and concentrated in the space between two electrodes.

Thus, if the focus of inflammation positioned between the electrodes, the local concentration of antibiotic in the area of inflammation will be higher. Experiments have shown that this method of antibacterial treatment increases concentration of the
antibiotic in the lung tissue by 2.7 times and fixing it for 8 hours longer than for the conventional method of treatment.

Local treatment of inflammatory focus is an integral part of a medical complex. We have developed a technique of local treatment by video-assisted thoracoscopic surgery with treating inflammatory focus using ultrasound and ozone therapy.

**Results**

After this technique have applied into clinical practice the results of treatment of acute destructive pneumonia in children are improved, the number of complications are reduced, treatment time is shortened.

**Conclusions**

1. Experimental studies of the address electrophoresis of antibiotics showed the ability to make maximum intertissue concentration of antibiotic in the tissues of the lungs in 2.7 times higher than in the control series. In the main series the antibiotic was determined in tissues of 8 hours longer in comparison with the control, and the rate of decrease in concentration was uniform and was 0,78 mg/g/h, which is 1,5 times lower than in the control series.

2. Video-assisted thoracoscopic surgery using ultrasound and ozone therapy can effectively remove the inflammatory exudate and necrotic tissue, remove adhesions that promoting to unfold lungs rapidly, improve aeration, inhibit of biofilms formations.

3. This medical complex for the treatment of lobitis has reduced the number of complications by 13,5 %, to prevent the development of destructive forms of pneumonia, reduce the pill burden 1,4 times, reduced treatment time by 2,8 days.

4. Medical complex developed for the most severe forms of acute destructive pneumonia (pyothorax, lobitis, lung abscess) in children has enhanced the effectiveness of antibiotic therapy, resulting in improved treatment outcomes of the source of inflammation, in case of pyothorax - reduction of drug burden to 1,2 times, while lobite – 1,4 times and to reduce the number of complications 13,5 %.

**UDK:** 165.28:546.33+547.43
Research of antimicrobial properties of sodium hypochlorite solution and taurine

DZ the «Dnepropetrovsk medical academy of MOH of Ukraine», Department of microbiology, virology, immunology and epidemiology (Sq. October 4, Dnepropetrovsk, Ukraine, 49000)

Summary. In medicine, remedies on the basis of sodium hypochlorite are used for prophylactic disinfection of surfaces and items of medical purpose, high level disinfection of probes and intravenous catheters. The experimental study of antimicrobial activity of hypochlorite with taurine was conducted according to the method of the deferred antagonism and also the influence of wound healing properties of solutions. The results of experiments indicate that the observable solution reveals higher antimicrobial activity to S. aureus, S. epidermidis, E. soli, than solution of NACIO, as for P. aeruginosa and P. albicans testify the absence of antagonistic action of NACIO, in contrast with hypochlorite with a taurine. The observable preparation is more stable at storage and its antagonistic activity is saved. Hypochlorite solution with taurine has the comparably expressed tendency to potentiation of reparative processes in an organism.

Key words: hypochlorites, taurine, disinfectant, antiseptic, antimicrobial activity.

Introduction

In medicine, remedies on the basis of sodium hypochlorite are used for prophylactic disinfection of surfaces and items of medical purpose, high level disinfection of probes and intravenous catheters. The experimental study of antimicrobial activity of hypochlorite with taurine was conducted according to the method of the deferred antagonism and also the influence of wound healing properties of solutions.

Materials and methods

The experimental study of antimicrobial activity was conducted according to the method
of the deferred antagonism. In experiments on rats influence of wound healing properties of solutions is considerable: 0.06 % sodium hypochlorite solution with taurine and solution of comparison (NACIO), used topically in the form of application during 15 days on the processes of regeneration on damaged skin.

Results
Experimental solution shows higher antimicrobial activity to S. aureus, S. epidermidis, E. soli than solution of NACIO, as for P. aeruginosa and C. albicans testify the absence of antagonistic action of NACIO in contrast with hypochlorite and taurine. It was established that solution of hypochlorite and taurine during 10 days saved more stable indicators of antagonistic activity, than reference solution of sodium hypochlorite. It was noted that on the 10th and 15th day of experiment, intensity of decreasing area in wound surface of animals, to whom was brought experimental solution of hypochlorite made up 38 % and 65 % accordingly. For groups, to which the applicators of solution of comparison NACIO were carried out, the area of wound surface also decreased on 38 % and 65 % on 10 and 15 days accordingly. In the control group of zoons the processes of reparation were characterized by decrease of defeated area on 25 % and 55 % on 10 and 15 days accordingly as compared to an initial background.

Conclusions
The results of experiment showed that the observable solution had higher antimicrobial activity to S. aureus S. epidermidis E. soli, than solution of NACIO, and as for P. aeruginosa and C. albicans testify the absence of antagonistic action of NACIO in contrast with hypochlorite and taurine. The observable preparation is more stable at storage and its antagonistic activity is saved. Hypochlorite solution with taurine has the comparably expressed tendency to potentiation of reparative processes in an organism.

UDC: 615.28:616.9
Paliy G. K., Kovalchuk V. P., Fomina N. S.
Characteristics of modern store of disinfection medicines and problems of
**disinfectology**
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**Summary.** The main groups of disinfectants, which are used in modern medicine and their deficiency are characterized in the manuscript. Authors’ thinking about unsolved problems of disinfectology which restrain the development of disinfection science in Ukraine, were presented.

**Key words:** disinfection medicines, effectiveness, unsolved problems of disinfectology.

**Introduction**
Disinfectology is one of the most important branches in the complex of sciences directed on providing epidemiologic wellbeing of people. It’s the most important task is known to be the development of effective measures of whole of selective eradication of pathogens of infectious diseases on the ways of their propagation. It is difficult imagine preventive trend in medicine without this task.

**Main part**
Modern period characterizes by enhancing of evolution processes of adaptation to chemical influences, forming of populations with high resistance to antiseptics and disinfectants, in the world of microorganisms. Imperfection of existing disinfectants and their ungrounded use in practice of medical institutions is on the reasons, stimulating alike processes. Some groups of chemical substances, which only partly meet the requirements of disinfectants, limit modern arsenal of disinfectants. The absence of specialized communicative sources, reflecting the development disinfectology, dynamics of update of disinfectants’ arsenal, change of rules of medicines’ development and registration, is the problem of domestic disinfectology.

**Conclusion**
Not all account of problems of disinfectology attests the necessity of concentration of significant scientific potential and attention of state government for their resolution.
This branch such important component of the system of preventive and antiepidemic activities as sanitary and hygienic, vaccination prophylactic branches are. The development of universal disinfecting agents needs efforts of bacteriologists, virologists, toxicologists, hygienists and other scientists to be united.

UDC: 576.851.48; (615.849.19+615.33):616.31

Panas M.A., Korniychuk O.P.

The combine effect of low-level laser radiation and antibacterial drugs on the model of escherichia coli

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Summary. The aim of our study to examine the effectiveness of a combination of antibacterial drugs and low-level laser radiation on Escherichia coli with periodontitis. We examined the age group 30 - 45 years of 40 people with periodontitis. Dedicated 7 E. coli strains and the reference strain E. coli ATCC № 25922 was used to examine the effect of laser radiation, when used in conjunction with antibacterial (AB) preparations for 5 min. and without using laser light. With simultaneous application of LLLT and rifampicin observed lack of growth indicators, while the use of amoxicillin / clavunate and laser radiation, the figure was 8,0 ± 0,8 CFU /ml (p <0,001). After irradiation for 5 min. without addition of antibiotic growth stimulation been observed isolates of E. coli. When adding ABP are observed significant inhibition of growth and change in culture properties of E. coli. By use of only AB - drugs there is a slight growth inhibition.

Key words: Escherichia coli, low-level laser radiation, antibiotics, periodontitis.

Introduction

One of the main etiological factors of inflammatory of periodontal diseases is plaque, which consists of the numerous microorganisms that possess high pathogenicity and adhesiveness on the surface of teeth and invasiveness to tissue structures. Escherichia
coli which don’t belong to normal microflora is an indicator of dysbiosis in the above ecological niche and are often sowning in periodontitis.

Materials and methods
We examined the age group 30-45 years of 40 people with a periodontitis. Dedicated 7 E. coli strains and the reference strain E. coli ATCC № 25922 was used to examine the effect of laser radiation, when used in conjunction with antibacterial (AB) preparations for 5 min. and without using laser light.

Results
According to received data found that the complete inhibition of growth of isolates wasn’t observed. Irradiation by LLLT of E. coli for 30 min. amounted 25,7 ± 1,3 CFU / ml (p < 0,001) in patients with periodontitis and reference strains - 17,4 ± 1,6 CFU / ml (p < 0,001). When used LLLT for 5 min. observed the stimulation of growth of as isolates in patients with periodontitis and reference strains because this indicator stood 52,9 ± 1,2 CFU / ml (p < 0,05) and 40,4 ± 1,4 CFU / ml (p < 0,001). With combined application LLLT for 5 min. with antibacterial agents there was a significant inhibition of growth of microorganisms, and in combination with rifampicin LLLT - complete the lack of growth of selected isolates. When used only rifampicin microbial count of E. coli was 8,3 ± 1,0 CFU / ml (p < 0,001) in patients with periodontitis and reference strains - 9,5 ± 1,7 CFU / ml (p < 0,001). At combined application cephalexin with the laser radiation on E. coli from periodontal pockets microbial count was - 6,7 ± 1,7 CFU / ml (p < 0,001), and in the absence of LLLT this indicator amounted - 13,1 ± 1,4 CFU / ml (p < 0,001). The intensity of the growth indicators of reference strain was 15,3 ± 1,7 CFU / ml (p < 0,05) and 6,9 ± 1,0 CFU / ml (p < 0,05). When using amoxicillin/ clavunat to study strains of E. coli this indicator constituted - 21,4 ± 1,2 CFU / ml (p < 0,001) and for the reference strain - 20,4 ± 1,62 CFU / ml (p < 0 05), and the combined application this figure decreased to 8,0 ± 0,8 CFU / ml (p < 0,001) in periodontitis and 7,7 ± 1,1 CFU / ml (p < 0,05) in the reference strain. The isolated application of cefotaxime increase of E. coli in periodontitis was at - 13,2 ± 1,3 CFU / ml (p < 0,001) in periodontitis and 15,4 ± 1,1 CFU / ml (p < 0,05) for the reference strain . As combined this index decreased in
periodontitis to $2.6 \pm 1.0 \text{ CFU / ml} \ (p < 0.001)$ and reference strains - $2.0 \pm 0.8 \text{ CFU / ml} \ (p < 0.05)$. In the application with the laser radiation to number of microbial cells of E. coli by lincomycin amounted $7.3 \pm 1.0 \text{ CFU / ml} \ (p < 0.001)$ in patients with periodontitis and by the action to the reference strain - $7.7 \pm 1.08 \text{ CFU / ml} \ (p < 0.05)$. In the absence of laser light this indicator constituted in periodontitis - $19.7 \pm 1.8 \text{ CFU / ml} \ (p < 0.05)$ and to the reference strain - $19.0 \pm 1.5 \text{ CFU / ml} \ (p < 0.05)$.

**Conclusion**

In combined application of LLLT for 5 min. with the antibacterial drugs on isolates of *E. coli* which are selected in patients with periodontitis, a significant effectiveness on growth and cultural properties. At combined application rifampicin and LLLT observed lack the growth of indicators of for strains of *E. coli*. When using only antibacterial drugs, their performance is significantly lower. So, LLLT may cause as stimulating influence with length of exposure of 5 min. and depressing effect on combined using with the antibiotics.

**UDC:** 541(183.12+64):542.944

**Toropin V.N., Burmistrov K.S., Kremenchutskiy G. N., Toropin N.V.**

**Preparation of disinfectant and aseptic solutions through the use of modified polymers**

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**Summary.** The emission of the active chlorine from immobilized sodium N-chlorsulfonamides under the action of amine type activators has been studied. It has been found that the concentration of active chlorine in the solution is determined by the stability of chlorinated activator forms.

**Key words:** N-chlorosulfonamide, polymers, hypochlorite, activation.
It is known that solutions of hypochlorous acid exhibit antimicrobial, antifungal properties and the majority of pathogens do not exhibit habituation to such solutions. Therefore, in medicine there has recently been a tendency to replace antibiotics with solutions containing the "active chlorine". Sodium N-chloraryl/sulfonamides have been used as a source of "active chlorine" for treatment of infected wounds and preparation of disinfectants. However, a significant disadvantage of chloramines is getting the contaminating molecules which are the carriers of active chlorine (arylsulfonamides), into the prepared antimicrobial solution. It was of interest to explore the possibility of using immobilized sodium N-chlorsulfonamides on the polymer substrate for the preparation of disinfectants and disinfecting solutions. Unlike the conventional sodium N-chloraryl/sulfonamides, sulfamide remains attached to the matrix and does not get into the prepared solution while using immobilized N-chlorsulfonamides. Such sulfonamide can be re-transformed into sodium N-chlorsulfonamide after appropriate preparation and treatment. There has been no data about the emission of the active chlorine from immobilized N-chlorsulfonamides in the references.

Materials and methods

The purpose of this study was to investigate the emission of the active chlorine from sodium N-chlorsulfonamides immobilized on the copolymer of styrene-divinylbenzene into aqueous solutions using various activators of amine type, such as ammonium chloride, KU2-8 cation exchanger in an ammonium form, aqueous ammonia, sulfaminic acid, and taurine.

It has been shown that the activation with ammonium chloride and KU2-8 cation exchanger gives the concentration of active chlorine in the solution of 60 - 70 mg/dm³. The solution being activated with aqueous ammonia, the concentrations are 220 - 280 mg/dm³. The highest active chlorine concentration of 500 - 900 mg/dm³ in the solution is achieved through the activation by sulfaminic acid and taurine. These activators provide the above active chlorine content due to the formation of stable compounds in the solution viz. N-chlorotaurine and N-chlorsulfamine acid. As a result, chlorinated forms of activators of varying stability degrees are formed. The
immobilized sodium N-chlorsulfonamide of macroporous structure evolves the active chlorine faster than the gel, due to differences in their structures. This indicates that the rate-limiting phase of the process is diffusion. Some of the solutions obtained have been microbiologically tested for antimicrobial properties. A hypochlorous acid solution of 30 mg/dm$^3$ concentration was tested, the acid being obtained from immobilized sodium N-chlorsulfonamide of macroporous structure. The tests were conducted on the test cultures of opportunistic pathogens taken from the funds of the Culture Museum at the Department of Microbiology, Virology, Immunology and Epidemiology at Dnepropetrovsk Medical Academy.

**Results**

The microorganisms of E.coli and K.Pneumoniae test cultures were completely inactivated after 5 minutes. The microorganisms of B.subtilis and A.viridans test cultures were completely inactivated after 20 minutes. These results confirm the high antimicrobial activity of dilute solutions of hypochlorous acid. A N-chlorotaurine solution of 450 mg/dm$^3$ concentration prepared from sodium N-chlorsulfonamide of gel structure was tested for suppressing microorganisms of Staphylococcus aureus (MRSA) test culture. It was found that N-chlorotaurine of the above concentration inhibits 85 % of this type microorganisms. Unlike hypochlorous acid, N-chlorotaurine exhibits antimicrobial activity at higher concentrations, due to its lower oxidizing power. At the same time, N-chlorotaurine does not produce any negative impact on healthy tissue and possesses an additional property viz. the ability to inhibit collagenase.

**Conclusions**

Thus, it has been shown that it is expedient to use sulfaminic acid and taurine for the preparation of disinfectant solutions through the use of modified polymers.

**UDC:** 615.281:579.84

Kovalchuk V.P., Kondratyuk V.N., Trofimenko Yu.Yu.

The results of the comparative study of the sensitivity to antiseptics of the film and planktonic forms of the bacterias
Summary. In this work was studied the species composition of the microflora that colonizes in the biofilm form endotracheal intubation tube surface while providing respiratory support to the patients of the intensive care departments. Were showed the data of the sensitivity of the microorganisms to antibiotics. Were determined value of minimum bactericidal concentrations of hydrogen peroxide, povidone-iodine and of the others surface-active antiseptics for film and planktonic forms of selected strains of bacteria.

Key words: bacterial biofilms, sensitivity to antiseptics.

UDC: 579.862.1:615.33:615.37:616-022.7-076-092.9


Effect of combined therapy on indicator enzymes activity in experimental generalized enterococcus infection

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Summary. As a result of the research it was found that in serum of infected mice was observed a statistically significant increase in total activity of lactate dehydrogenase (at 41 %), in the heart – raise of its isoform at 84 % together with a significant increase in creatine phosphokinase (at 198 %), aspartate aminotransferase (at 95 %), alanine aminotransferase (at 195 %) and raise of liver indicator enzymes activity: aspartate aminotransferase (at 61 %), alanine aminotransferase (at 94 %), alkaline phosphatase (at 225 %) and γ – glutamyltranspeptidase (at 73 %) in comparison with controls. Determining of combined therapy effectiveness on the activity of indicator enzymes in the body of infected mice found that in serum a decrease in total lactate dehydrogenase activity up the level of control indexes was observed under influence
of combinations of drugs such as Amoxiclav + Cefepim + Polyoxidonium, Amoxiclav + Cefepim + Timalin and Amoxiclav + Ciprofloxacin + Polyoxidonium. Regarding the activity of heart isoforms of lactate dehydrogenase and alkaline phosphatase, only the combination of Amoxiclav + Cefepim + Polyoxidonium resulted in changes up to the level of control values. The activity of aspartate aminotransferase and γ-glutamyltranspeptidase in serum of infected mice tended to decrease under Amoxiclav + Cefepim + Polyoxidonium, Amoxiclav + Cefepim + Timalin and Amoxiclav + Ciprofloxacin + Polyoxidonium. Reduced activity of alanine aminotransferase up to the control indexes was observed under treatment with Amoxiclav + Cefepim + Polyoxidonium and Amoxiclav + Cefepim + Timalin. In the liver of infected mice aspartate aminotransferase activity decreased under all investigated combinations of drugs, while alanine aminotransferase – only by using of Amoxiclav + Cefepim + Polyoxidonium. The same dynamics was detected for cardiac creatinephosphokinase activity. So, treatment of generalized enterococcus infection with combinations of Amoxiclav + Cefepim + Polyoxidonium and Amoxiclav + Cefepim + Timalin led to normalization of indicator enzymes activity.

Key words: indicator enzymes, experimental study, enterococcus.

UDC: 576.22/.24:618.15]:576.88

Lavryk G., Tymchuk I., Kornijchuk O., Kostyuk L.

Antagonistic properties of lactobacilli isolated from the vaginale relative to opportunistic microflora

Danylo Halytsky Lviv National Medical University Department of Microbiology (69 Pekarska str., Lviv, 79010)

Summary. It is established that probiotic preparations containing L.plantarum R17630 have expressed antagonistic activity against fungi of the genus Candida isolated from almost-healthy women and from patients with candidiasis vulvovaginitis more than twice reduced antagonist activity. For products containing L.acidorhilus KS 400 absolute value areas of stunted growth is significantly lower than the values
set for the fungus. Antagonistic activity of Lactobacillus clinical isolates of Candida relative is virtually absent. The highest antagonistic activity of probiotic Lactobacillus strains is showing L. plantarum P17630, L. acidophilus KS 400 i L. plantarum 8P-A3 on the museum E.coli ATCC 25922 and P. aeruginosa ATCC 27853 (F-51). Areas of growth retardation of the clinical isolates of the opportunistic microorganisms E.coli, P. aeruginosa were a little bit lower when compared to the museum.

**Key words:** Lactobacillus, Candida species fungi, opportunistic microorganisms, antagonism.

**Introduction**

Biological diversity of microbial landscape the genitourinary system can be violated in response to changes in local and general immunity, the effect of adverse external factors after chemotherapy measures in infectious and somatic diseases. It is known that changes in the state of microbiocenosis found in reproduction conditionally pathogenic microorganisms.

The aim of our research was to investigate the antagonistic properties of Lactobacillus relatively opportunisticy bacteria and fungi of the genus Candida isolated from the vagina of the almost healthy women and manifestations of vulvovaginal candidiasis.

**Materials and methods**

To select strains lactobacilli, fungi, material from the vagina were plated in semiliquid thioglycolic environment subplanted in dense medium MRS ("Biokompas", Russia) and Saburo. When you take into account the species identification of morphological, cultural, biochemical properties.

As an indicator of bacteria cultures were used S. aureus ATCC 25923 (F-49), S. epidermidis 191, P. aeruginosa ATCC 27853 (F-51), E.coli ATCC 25922, B. licheniformis C, K. pneumoniae 43 and genus Candida. Antagonistic properties were studied by the method of delayed antagonism by Frederick. Account of the results, stunted growth of fungi was performed 24-48 hours after exposure in an
Statistical analysis of the results was performed using the software Excel.

Results

In this research was established that probiotic drugs containing *L.plantarum* P17630 on average delay growth of fungi of the genus Candida from almost healthy women at 37,89 ± 2,32 mm, *L. plantarum* 8P-A3 at 26,43 ± 2,80 mm and isolated from patients with candidiasis vulvovaginitis – 34,85± 2,32mm, 14,28 ± 3,37 mm. Medications containing *L.acidophilus* KS 400 accordingly 5,6 ± 2,24 mm and 7,28 ± 2,29 mm. Antagonistic activity of Lactobacillus clinical isolates of Candida relative is virtually absent. The highest antagonistic activity of probiotic Lactobacillus strains is showing *L. plantarum* P17630 on the museum E.coli (36,75 ± 0,9mm), P.aeruginosa (22,25 ± 1,1mm), similarly *L.acidophilus* KS 400 - (34,25 ± 2,2mm), (20,5 ± 0,6mm), *L. plantarum* 8P-A3 - (34,75 ± 1,0mm), (40,25 ± 1,7mm). Areas of growth retardation of the clinical isolates of the conditionally pathogenic bacteria were a little bit lower when compared to the museum: *L. plantarum* P17630 - *E.coli* (25,25 ± 0,9mm), *P.aeruginosa* (17,25 ± 0,5mm), *L.acidophilus* KS 400 - (22,5 ± 1,0mm), (13,75 ± 1,1mm), *L. plantarum* 8P-A3 - (22,5 ± 1,0mm), (13,75 ± 1,1mm).

Conclusion

Clinical isolates of lactobacilli almost did not show antagonistic activity relative to fungi of the genus Candida (isolated from the vagina of healthy women and manifestations of vulvovaginal candidiasis) in contrast to probiotic strains that have expressed antagonistic activity. All probiotic lactobacilli strains have significant activity against opportunistic bacteria.

Therefore, to restore the vaginal flora and prevent vulvovaginal candidiasis it is recommended to use the vaginal probiotic preparations containing lactobacilli after using the antibiotics.

**UDC:** 615.28:616-002.7

**Kordon Y.V., Paliy I.G.**

**Before application of antimicrobial antiseptic preparations which contain**
fourvalency nitrogen

Microbiology, virology and immunology department of Vinnitsya national medical university named after M.I.Pyrogov (Pirogov str., 56, Vinnitsya, Ukraine)

Summary. In-process the brought results over of research of antimicrobial properties of antiseptic medicinal preparations which contain fourvalency nitrogen. Origins generalized given in relation to reasons and principles of fight against hospital infections.

Key words: antiseptics, decasan, horosten®, miramistin, chlorhexidine.

Introduction

Hospital infections - problem of health protection entire countries of the world. Hospital infections which are caused by causative agents proof to the antibiotics more spread. The of prophylaxis of hospital infections requires heavy material tolls. In of the prophylaxis of hospital infections all measures are important. Tide of of illness is stemmed the a barrier by realization of sterilization or disinfection. The of choice of facilities for disinfection must kennels self - weighted. the spectrum of antimicrobial action is taken into account. Advantage all more frequent gives oneself up to low - toxic modern antiseptic facilities to which microorganisms form resistance of slowly.

Research purpose. To compare antimicrobial properties of antiseptic preparations which contain fourvalency nitrogen.

Materials of and methods

Research of of antimicrobial activity of 4 antiseptics: decasan, horosten®, miramistin, chlorhexidine it is conducted on 252 museum and clinical stamms of microorganisms, distinguished from patients with different festering diseases. Microbiological of diagnostics included microscopic, bacteriological, biochemical research methods.

Results of researches and their discussion

In a table. 1-2 brought results over of study of sensitiveness of museum and clinical stamms of microorganisms to decasan, horosten®, miramistin, chlorhexidine.
The sensitiveness of staphylococci is investigational to 25 antimicrobial preparations. Results over of study of sensitiveness of microorganisms to antimicrobial facilities are brought in a table.3.

Conclusions and prospects of further developments
Antiseptic preparations of decasan, horosten®, miramistin, chlorhexidine is shown high antimicrobial activity to the museum and clinical stamms of S. aureus, E. coli. Expediently their application is for a fight against hospital infections, caused proof to the antibiotics stamms. According to research results - antiseptics have high antimicrobial activity, powerful disinfectant properties.

UDC: 579.741:616.24-002:615:28577.18
Trofimenko Yu.Yu., Paliy I.G
The sensitivity of gram-negative unfermentiert bacteria and other vap pathogens to the antibiotics and antiseptics
Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

Summary. In article were showed results of the investigations of the properties of the microflora isolated from tracheostomy tubes at the intensive care departments of Vinnitsa. Were studied the sensitivity of isolated microorganisms to a wide range of modern antibiotics. The results of the quantitative determination of bacteria sensitivity to polyhexamethyleneuguanidine, chlorhexidin bigluconat, benzalkonium chloride, dekasan, octenisept, povidone-iodine and hydrogen peroxide
Key words: The unfermentiert bacteria, antibiotic resistance, sensitivity to antiseptics.

UDC: 579.861.2.004.12:616.71
Churkina L.N., Avdeeva L.V., Lutko O.B, Oserjanskaja N.M., Voychuk S.I., Makushenko A.S.
Morphological and ultrastructural variations of atypical forms of
**staphylococcus aureus (SSCVs), isolated from patients with chronic osteomyelitis**

**Summary.** Results of our researches showed that hemin - and timidin-dependent S. aureus SCVs have unusual morphology of colonies and atypical physiologo-biochemical characteristics which are interconnected with the considerable structural changes of a cell leading to impaired cell separation.

**Key words:** atypical forms of staphylococci (SSCVs), auxotrophy, electron microscopy.

**UDC:** 615.28:615.454.2

**Kovalenko I.N.**

**Research antiseptic properties of suppositories deseptol, hexicon**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

**Summary.** The work contains the results of the study of antimicrobial activity of antiseptic suppositoriev deceptor and lexicon. Their high activity in relation to the Museum and clinical strains of micro-organisms was proving. The study of their activity at different pH environment showed no significant decrease antimicrobial activity of drugs. The results allow using antiseptic suppositories with decamethoxinum in treatment of purulent inflammatory diseases.

**Key words:** purulent diseases, decamethoxine, antiseptics, suppositories.

**UDC:** 612.336.3:612.014.6/.015.111

**Hural’ A.R., Fomenko I.S., Shykula R.G., Panasyuk N.B., Sklyarov A.Ya., Korniychuk O.P.**

**Characteristic of intestinal microflora and changes of no-synthase system under combined action of acute stress and cyclooxygenase blockage**

Danylo Halytsky Lviv National Medical University Department of Microbiology (69 Pekarska str., Lviv, 79010)
Summary. In experiments on rats with modeled water-restrained stress it was studied the influence of nonsteroidal anti-inflammatory drugs on changes of NO-synthase system parameters, processes of lipoperoxidation and the status of microflora in small and large intestines. It was shown, that the water-restrained stress was accompanied by the considerable increase of iNOS activity and the rise of lipoperoxidation processes intensity. The increase of *Escherichia coli* content and the decrease in *Enterococcus* spp. concentration in the small intestine with their simultaneous rise in the large intestine was notices under these conditions. Proliferation of opportunistic enterobacteriae in iliac was marked. Cyclooxygenenase blockage with naproxen prior to water-restrained stress model was accompanied by the decrease of iNOS in small and large intestines with the synchronous rise of cNOS activity in the large intestine as compared with indexes in stress. The moderate increase in *Enterococcus* spp. content in duodenum with the rise of *Escherichia coli* concentration in the ileum was shown. *Escherichia coli* decreased in the proximal part of the large intestine and decreased in its distal part. Disbiosis, intensification of lipoperoxidation processes and changes in NO-synthase system parameters under condition of simultaneous action of stress and cyclooxygenase blockage can create preconditions for the development of destructive changes and enteropathias.

**Key words:** stress, NSAIDs, nitric oxide, microflora.

**UDC:** 616.37-031.64-018.1:616-097[616.379-008.64]-092.9

**Putilin D.A., Kamysny A.M., Konovalova O.O., Kamyshnaya V.A.**

The peculiarities of the expression of tlr2 and tlr4 adipocytes of parapancreatic connective tissue of experimental diabetes mellitus

Summary. It is researched the influence of experimental diabetes mellitus on the expression of TLR2 and TLR4 by adipocytes of parapancreatic fibrous in the rats of Wistar line. It is detected that the development of EDM increased the number of TLR2⁺- and TLR4⁺- adipocytes and increased the density TLR2⁺- and TLR4⁺-
receptors on their membran. The introduction of metformin to the diabetic rats reduced the general number of TLR2\(^+-\) adipocytes in 16 % (EDM1) – 22 % (EDM2), TLR4\(^+-\) adipocytes in 36 % (EDM1) accompanied by the decrease of the density TLR2\(^+-\) and TLR4\(^+-\) receptors of the surface of adipose cells.

**Key words:** experimental diabetes mellitus, adipocytes, TLR2, TLR4.

**UDC:** 616.002.51

**Babiichuk I.V.**

**Intracellular development of the tuberculosis causative agent in the blood system**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

**Summary.** Tuberculosis is an urgent medical and social problem both in Ukraine and worldwide today. The new diagnostic method is based on studying of the blood smear and determination of the development stage of the TB causative agents in the blood system and if necessary bacteriological blood tests are performed using VLAKON medium in which the colony growth can be achieved in 2-3 days. The objective of our work was to improve the express method of determination of the TB causative agent in the blood system using digital microscopy.

**Key words:** polymorphism, experimental tuberculosis, digital microscopy, erythrocyte, intracellular development.

**UDC:** 616.12-008.3-079.96:572.037:616-071.3

**Cvintarnii A.V.**

**Age features of time and amplitude indicators reovasography of thigh in healthy urban boys and girls**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)
Summary. In 148 healthy boys aged from 17 to 21 years and 160 women aged from 16 to 20 years, in the third generation residents of Podolsk region of Ukraine established age and gender features of amplitude and time reovasography of hip. In healthy girls with age increasing blood supply arteries of large and medium and small caliber (as indicated by higher values of baseline systolic impedance and amplitude of the wave). In healthy young men is statistically significant age differences in performance reovasography thigh virtually no set, which underlines definitive establishment of functional maturation hemodynamic hip. Between boys and girls overall and corresponding age groups established sex differences of amplitude and time parameters reovasography of hip.

Key words: reovasography of hip, healthy young men and women, age and sex features.

UDC: 612.014.2 : 612.532 : 615.31

Ivanova T.G., Lyuty R.Y., Troshina M.V., Tsublova E.G.

The effect of new benzothiazole derivatives on the morphological indicators of some mice organs under the influence of physical exercise

Summary. Salts of ethoxy- and aminobenzothiazole derivatives have a pronounced actoprotective effect on the mice in the treadmill running test. At the same time in effective doses they contribute to the adaptation of organs and tissues to the exhaustive effect of physical exercise.

Key words: antioxidants, benzothiazoles, organs morphology.

Introduction

The stimulating effect of new benzothiazole derivatives on the animals’ physical efficiency in the treadmill running test under normal conditions comparable and/or exceeding those in the degree of bemithyl and bromantan expressiveness is revealed in the experiments on white nonlinear mice.

While investigating changes in some mice organs and tissues it was revealed that under normal conditions and after the influence of physical exercise new compounds
have unequal effect on the morphological organs parameters. So against the influence of ABTI-1 and GABTI-3 background no changes in the structure of the investigated organs were recorded. MABTI-1 under normal conditions influenced the structure of hepatocytes, adrenal medulla and cardiomyocytes. These changes indicate the increase in the intensity of the processes of carbohydrate metabolism. EABTI-1 in itself affected only the changes in the adrenal medulla cells parameters, forwarding the increase of the of body's cells sensitivity to glucose against the background of the reduced catecholamines concentrations. When exposed to physical exercise MABTI-1 enhanced changes in the organs observed under normal conditions. EABTI-1 along with a similar MABTI-1 action contributed to the increased glycogenolysis in the muscle fiber.

**UDC:** 615.011:547.56

**Shevchuk N.M., Sorokoumova L.K.**

**Antimicrobial activity of combinations nitrones**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

**Summary.** Investigation of antimicrobial activity of chemical combinations, which fall into nitrones N-arilhinolilazometin. In activity conducted the microbiologic tests and the comparative analysis of antiseptic drugs of nitrones, dekametoxin, unguentums Palisept.

Proved experimentally antimicrobial activity of Unguentum with dekametoxin, drug of a nitrone 1. Highly sensitive of museum and isolated from patients strains of microorganisms remain to these drugs.

**Key words:** antimicrobial activity, nitrones, dekametoxin, Palisept

**UDC:** 579.86:579.262:616.76

**Romanya I.V., Yunusova O.L.**
Non-diphtheric corynebacteria located in microbiocinosis of pathologically changed mucosa
Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

Summary. In this article, there are presented the results of biological features investigation that made for non-diphtheric corynebacteria, which were isolated from different patients with signs of inflammation in their respiratory tract. It is shown that opportunistic corynebacteria, which were isolated from patients of intensive care units (ICUs), had demonstrated high resistance to antibiotics.
Key words: non-diphtheric corynebacteria, antibiotic susceptibility.

UDC: 616.333-006.6.-089
Lukavetsky N.
Clinical prognostic factors of advanced esophageal and gastric cardia cancer surgery
Danylo Halytsky Lviv National Medical University Department of Microbiology (69 Pekarska str., Lviv, 79010)

Summary. The aim of our study is detection of prognostic factors in esophageal and gastric cancer surgery. Grade of tumor differentiation and Borrmann classification did not influence survival.
However elderly patients have statistically significant better survival (median 20,2 month) compared with younger patients (median 15,4 month) radical surgery can be performed at acceptable risk in elderly patients.
Extended gastrectomy with thoracotomy is the better choice of surgical treatment of gastric cardia cancer compared with standart abdominal gastrectomy.
Key words: esophageal cancer, gastric cardia cancer, prognosis of clinical outcome.

UDC: 616.127-005.8-036.11
Solyeyko O.V., Chernykh M.O.

Intracardial hemodynamic features in patients with q- myocardial infarction based on undifferentiated connective tissue dysplasia

Vinnytsia National M.I. Pyrogov Memorial Medical University, Department of Internal Medicine № 2 (Pyrogov street, 56, Vinnytsia, Ukraine, 21018)

Summary. A comparative analysis of Doppler echocardiographic indexes in 62 patients (31 – with UCTD syndrome and 31 – without UCTD) with first diagnosed Q- MI. The features of intracardial hemodynamic disorders in patients with Q- MI based on UCTD are symptomatic reducing in contractive myocardium function of the of the left ventricle and predominant II type of diastolic dysfunction of the left ventricle (DD LV) – pseudonormalization.

Key words: myocardial infarction, undifferentiated connective tissue dysplasia, intracardial hemodynamic.

Introduction

Blood circulatory system diseases (BCSD) and, in particular, coronary artery disease (CAD), are now the leading cause of mortality, morbidity and disability of adult population of the world, being the most important problem for doctor and their patients, but also for society in a whole. The proportion of deaths from CAD makes 64,4 % (urban areas – 61,4 %, rural areas – 65,5 %), from CAD – 70,2 % in Ukraine for the last years, which is significantly higher than similar indexes in the developed countries of Europe. Diseases of heart and took first place as a cause of death of working population in 2004 in the history of our country.

Materials and methods

The study involved 62 patients aged of 36 to 84 years old (average age 58,08±1,37 years old), who live in Vinnytsia and Vinnytsia region, with first diagnosed Q- MI, admitted to in-patient department on the first day of disease. They were supervised while their stay at in-patient department. According to the number of phenotypic and
visceral stigmas of USTD patients were divided into 2 groups. The basic group included 31 patients with USTD syndrome (number of phenotypic and visceral stigmas of USTD was 6 or higher). Comparison group consisted of 31 patients without the USTD syndrome (number of phenotypic and visceral stigmas of USTD was 5 or less).

**Conclusions and recommendations for further development**

1. The features of disorders of intracardiac hemodynamics in patients with Q-MI based on UCTD is significant reduction in contractile ability of myocardium of the left ventricle and dominate of II type LVDD (pseudonormalization).
2. UCTD affection on the course of Q-MI partly connected with the development of structural and functional changes in the heart and the formation of LV DD, indicating on the role of genetic characteristics of connective tissue skeleton of the heart in the formation of pathophysiological mechanisms of adaptation at postinfarction atherosclerosis.

In-depth analysis of structural and functional features of myocardium and mechanisms of development of LV DD among patients with MI based on UCTD allows further improving treatment and quality of life of the patients, and is a prospective area for cardiac research.

**UDC**: 616.61 – 002:616.62 – 008.22


**Pathological changes of the urinary system in experimental hydronephrosis single kidney, in poor flow of urine**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

**Summary.** At present in the literature there are quite contradictory data of hydronephrosis that occurs on the background of prolonged violation of the outflow of urine, no single methodological approach to the assessment of structural and functional changes in the kidneys and urinary tract. Determining the feasibility of
organ operations for hydronephrosis is difficult due to the complexity of the true state of the affected organ during obstruction. Among all surgical diseases of the kidneys, leading to renal function hydronephrosis is 35-40 % and is almost always accompanied by dysplasia manifested violation of the structure of kidney tissue and the formation of secondary sclerotic changes. A fundamentally important point, as in determining treatment strategy and in determining the prognosis of the disease is to assess the degree of preservation of functional renal parenchyma, which depends on the intra-organ blood flow. The paper presents the main morphological changes of the urinary system in experimental hydronephrosis in solitary kidney conditions in poor flow of urine by morphological criteria compensatory-adaptive reactions.

**Key words:** urinary system, hydronephrosis, poor flow of urine, dysplasia of gloms, hyalinosis, vessels of microcirculation of bed.

**UDC:** 616.37-002-071-08:616.33:616-08-039.57

**Fedzhaha I.V.**

**Indicators of effective action of different doses of pantoprazole in the complex treatment of patients with chronic pancreatitis in acute stage**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

**Summary.** Objective: To determine the efficacy of PPI pantoprazole in the treatment of exacerbation in patients with chronic pancreatitis with different levels of intragastric acidity.

**Key words:** chronic pancreatitis, exacerbation, treatment, pantoprazole.

**Materials and methods.** We studied 117 patients who, after examination and establishment of diagnosis of chronic pancreatitis (CP) were in outpatient treatment. All the patients in this group were divided into 3 groups, representative in quantity, age and sex. Patients of the first group (31 persons) were treated only with compulsory treatment. The patients of the second group - 40 patients with CP, which
in addition to compulsory treatment received famotidine. The patients of the third group - 46 patients with CP, which in addition to compulsory treatment received pantoprazole. In the study we used the following research methods: data collection history, clinical monitoring of patients, laboratory techniques, rapid method of computer intragastric pH - metry, and hours of daily monitoring of the pH of the stomach, ultrasound of the organs of abdominal cavity. The intensity of pain was estimated by international ball-rank scale and was ranged in 10 points.

**Results.** Following the appointment of pantoprazole positive dynamics of pain and dyspeptic syndromes were observed. Till the end of treatment, the pain was eliminated in 83.3% of patients with a dosage of pantoprazole 40 mg 1 time a day the pain disappeared in 72.7 % of patients and with a dosage of pantoprazole 40 mg 2 times a day - in 95 % of patients. The results showed that the reduction in pain intensity was greater in patients with CP with severe and moderate gastric hyperacidity than in patients with normal gastric acidity and moderate hypoacidity. However, the rate of pain intensity decrease under PPI pantoprazole was higher in severe and moderate hyperacidity of stomach. The effectiveness of pantoprazole is significantly higher (P <0,05) at a dosage of 40 mg 2 times a day in all study groups. In patients with CP with gastric normacidity pain when using famotidine decreased further (by 32.8 %), while the application of pantoprazole (40 mg 1 time per day) reduced pain by 10.4 %, while the use of pantoprazole (40 mg 2 times a day) – by 25.0 %.

Analysis of the results shows that in the early periods (1-3 days) famotidine is best in the reduction of pain, starting from the fourth day increases analgetic effect of pantoprazole.

All patients with dyspeptic syndrome marked positive effect of treatment. By the end of the first week (pantoprazole 40 mg 2 times a day) or during the second week of treatment (pantoprazole 40 mg 1 time per day) in all patients of this group dyspeptic symptoms such as nausea - in 16 patients, vomiting - in 11 patients, heartburn - in 5 patients disappeared.

**Conclusions.**
This study demonstrates the high clinical efficacy of pantoprazole in the complex treatment of patients with chronic pancreatitis in the acute stage.

Based on the obtained data differentiated assignment of proton pump inhibitor - pantoprazole is recommended under pH- metry control during exacerbation of CP. In patients with chronic pancreatitis with severe and moderate hyperacidity and normal acidity of stomach pantoprazole 40 mg 2 times a day can be recommended, and in patients with moderate hypoacidity of stomach - 40 mg 1 time per day.

**UDC:** 615.472.5:615.28

**Rymsha E.V.**

**Characteristics of effective use of urethral catheters with antimicrobial coating**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

**Summary.** Objective to study the antimicrobial effectiveness of urethral catheters with antiseptic coating and ability to resist colonization of microorganisms. In the experimental group, the patients underwent catheterization urinary catheters with antimicrobial coating on the basis of polivinilbutiral with decametocsin and gidroperit. A control group patients catheterisation conventional catheters. Catheters, protected antimicrobial composition based on decametocsin and gidroperit subjected to contamination by bacteria.

**Key words:** microbial contamination, antimicrobial coating, urethral catheters, control and the basic group.

**Introduction.** The cause of purulent-inflammatory complications in urology is the presence of a catheter all prevention efforts are aimed at preventing the penetration of microbes on the catheter, the reduction of colonization designated catheter and struggle with the reproduction of microorganisms which have got to its surface. Application of antimicrobials on the surface of the catheter for a long time creates zone of antimicrobial influence in the surrounding tissues and performs the role of
local long-term allocation of an antimicrobial agent. Aim of study was investigation the spectrum of microorganisms that infect urethral catheters in the patients.

**Materials and methods.** Were examined 110 patients, in the control group (n=55) patients underwent catheterization urinary catheters with antimicrobial coating on the basis of polivinilbutiralium with decametocsinum and hidroperitum. The control group (n=55) is consisted of patients catheterization conventional catheters. The study of the nature of microbial contamination of urethral catheters conducted by planting the dense nutrient medium. Determined the species composition of microorganisms and spent counting on $1\text{cm}^2$.

**Results.** When sowing of urethral catheters were allocated 63 strains of microorganisms. Often control catheters infected *E. coli* 31,7%, *S. aureus* 14,8%, aerobic gram-negative sticks (*Pseudomonas* 6,35 %, *Acinetobacter*, *Burkholderia*, *Moraxella at* 3%). Share of controlling catheters, contaminated two kinds of microorganisms, amounted to 49.8 %, three and more - 9 %. Catheters coated with antiseptic composition infected not more than two strains of 25.3 % of cases. In cateterizations protected catheters patients clinically significant number of bacteria in the urine was observed in 13,3 % of cases, with the urine were allocated less than 104 CFU/ml In the control group patients in 100 % of cases the number of bacteria in the urine was greater 105 CFU/ml.

**Conclusion.** Catheters with antiseptic coating opposed contamination by bacteria, significantly better than the control. The number of microorganisms isolated from septic catheters was 6 times less as compared with control catheters. Antiseptic coating warned colonization of urethral catheters staphylococcum, streptococcum and enterobakterium.

**UDC:** 615.28:616.31-002.36

**Ivanova M.O.**

The antiseptic effect of dekasan on the bactericidal action of oral fluid of patients with odontogenic phlegmons

Vinnitsya national medical university named after M.I. Pyrogov (Pirogov str., 56,
Summary. Results of definition of bactericides oral fluid of patients with odontogenic phlegmons on the background of the different treatment algorithms. It is proved that an antiseptic dekasan not be adversely affected by the bactericidal action of oral fluid.

Key words: odontogenic phlegmons, dekasan, nonspecific resistance.

Introduction
Antimicrobials are an important component of the dental practice. Increases the need to develop a strategy for the use of preparations with antibacterial effects, which have a negative effect on the immune system of the organism. The state of nonspecific resistance of an organism of the person, the immunity of the oral mucosa that is very important in the development of inflammatory processes, in particular odontogenic phlegmons.

Materials and methods
The definition of bactericides oral fluid was first held healthy people after the mandatory inspection of the oral cavity and, if necessary, its rehabilitation. In a comparison group of patients consisted of patients who have been operated and received treatment. A main group - patients were operated on and treated with antibiotics and dekasan.

Results
The oral fluid destroyed a half (56,7 ± 3 %) of E. coli that were add in the oral cavity. The oral fluid on the third day destroyed 21,6 % (p < 0.05) Escherichia coli, and in the body of the control patients with odontogenic phlegmons 23,0 % (p < 0,05). On the fifth day of the resistance of the organism of patients operated increased, as evidenced by a greater percentage of the victims of coliform bacteria in the oral fluid is observed patients 39,9 % (p < 0,05), in control – 30,8 % (p < 0,05).

On the seventh day increase bactericidal activity of the oral fluid of patients with odontogenic phlegmons – 43,8 %, and in control – 33,9 %. Before discharge the
bactericidal action of oral fluid from the main patients reached 49.1 % (p < 0.01), in the control patients – 40.2 %. The bactericidal action of oral fluid in a healthy person (donor – 56.7 %) The treatment of patients with odontogenic phlegmons is a tendency to increase bactericides oral fluid, which is of great importance in the protection of mucous membranes of the oral cavity.

As have shown results of research, the action of the oral fluid destroyed almost half of bacteria (56.7 ± 3 % at p < 0.001) in a healthy person. In patients with odontogenic phlegmons the oral fluid destroyed 25.1 % of bacteria, that is 2.25 times less than in the healthy human body.

Conclusions
1. The application of an antiseptic used for local treatment of infectious processes aimed at the prevention of generalization of the inflammatory focus, regardless of its location, severity and prevalence. The local treatment process antiseptic dekas in aimed at reducing the number of bacterial species and smothering of organisms and not suppress immunological protection of the organism.

UDC: 579.862:615.33:57.0174:616.321/2-022

Burova Y.D.

The sensitivity to antimicrobial chemotherapy drugs strains *streptococcus B-haemolyticus*, isolated from patients with acute tonsillitis and pharyngitis

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Department of Microbiology (69 Pekarskaia St., Lviv, Ukraine, 79010)

Summary. In the research are represented the results of the study of sensitivity to various antibiotics of 40 isolates of *Streptococcus β-haemolyticus*, isolated from patients with acute tonsillitis and pharyngitis. We found drugs of choice for empirical treatment of patients to establish the antimicrobial sensitivity of pathogens. It is shown that the effective treatment of acute disease states may be recommended a limited set of antibiotics, especially penicillin - amoxiclav for adults and cephalosporins of the 1st generation of children. Other antimicrobials should be used
after installation of susceptibility by the method of standard drives.

**Key words:** *Streptococcus β-haemolyticus*, tonsillitis and pharyngitis, sensitivity to antimicrobial chemotherapeutic agents.

**Introduction**

Acute inflammation of the tonsils and / or pharyngeal area is widespread among people of all age groups. More relevant is the use of the term "acute tonsillitis and pharyngitis" because of inflammation of the tonsils is often accompanied by inflammation of the posterior pharyngeal wall and vice versa. Among the bacterial pathogens of acute tonsillitis and pharyngitis is most important beta-hemolytic streptococcus group A (BGSA), which is activated in the development of infectious and allergic diseases of the body and, above all, rheumatism. Although the etiology and pathogenesis of rheumatic fever can not be completely understood. Determination of antibiotic susceptibility and the monitoring properties of streptococci necessary to prevent complications that can be caused by acute tonsillitis and pharyngitis agent. The aim of the study is to determine and conduct comparative antibiotic sensitivity strains of beta-hemolytic streptococci serogroup A isolated from patients (children / adults) with acute tonsillitis and pharyngitis, who live in Lviv and Lviv region.

**Materials and methods**

Planting material and identification of microorganisms was performed according to current recommendations. Sensitivity to antimicrobial chemotherapeutic agents (AHP) was determined by a disk-diffusion method.

**Results**

During 2013 held biopsy specimens from 158 patients of all ages and 40 strains selected for the study (20 strains isolated from children aged 2 to 9 years and 20 strains isolated from adult patients ). Target was raised not only determine antibiotic sensitivity but also of comparative sensitivity characteristics of the studied isolates from children and adults. In the study of the species composition of the resident microflora of the oral cavity revealed that in 17 cases ( 43%) found in association
Staphylococcus aureus, in 3 patients (8%) - the association of fungi of Candida spp., one of the patients association of Enterobacter cloacae.

In the research is observed the highest percentage sensitivity of strains β-hemolytic streptococcus AHP to penicillin isolated from adult patients if to compare with children. Therefore, effective treatment of children acute conditions can be achieved of cephalosporin drugs of the 1st generation, in severe cases - 2nd-3rd. Most sensitive to cephalosporins were strains isolated from adults. To avoid complications it is advisable to use a combination of penicillin drugs from a number of other groups AHP based of the antibiogram.

**Conclusion**

For timely and appropriate antibiotic therapy of acute tonsillitis and pharyngitis is fundamentally important to have monitoring data on the prevalence and nature of the sensitivity of pathogens to the AHP. Strict selection scheme of the empiric antibiotic therapy based on local data - an important condition for the prevention of antibiotic resistance.

**UDC:** 615.281:616.311.2-002

**Bereza B.M., Nazarchuk O.A., Chepel L.I.**

**Efficiency research of medicinal composition with decamethoxinum for the local treatment of gingivitis**

Vinnitsya national medical university named after M.I.Pyrogov (Pirogov str.,56, Vinnitsya,Ukraine)

**Summary.** This was a study of the clinical efficacy of medicinal composition with decamethoxin for the local treatment of gingivitis. Using standart and special methods of clinical examinations, it was proved that medicinal composition in comparison with the traditional treatment schemes reduces the treatment time of patients, increases the time of remission. Obtained results allow to recommend the investigational medicinal composition for the treatment of periodontium diseases.

**Key words:** gingivitis, inflammation, medicinal composition, treatment
Introduction
This was a study of the clinical efficacy of medicinal composition with decamethoxine for the local treatment of gingivitis. Using standard and special methods of clinical examinations, it was proved that medicinal composition in comparison with the traditional treatment schemes reduces the treatment time of patients, increases the time of remission. Obtained results allow to recommend the investigational medicinal composition for the treatment of periodontium diseases.

Entry
Inflammatory periodontal disease, including gingivitis is an urgent medical problem, which is primarily due to the wide prevalence of this pathology. Among seniors of Ukraine prevalence of gingivitis is 80%. Significant place in the etiopathogenesis of gingivitis belongs to microbial factors. In dentistry for drug treatment successfully are used drugs for a number of quaternary ammonium compounds, particularly Decametoxine.

The aim of our study was to investigate the clinical efficacy of medicinal compositions (MC) in the treatment of gingivitis.

Materials and methods
To achieve the objectives of clinical supervision with the course of treatment covered 46 patients aged 16-18 years with a diagnosis of chronic generalized cataral. F 24 patients of the study group for the topical treatment we used MC, For control group (22 patients) - 0.002 % solution of chlorhexidine digluconate. The structure of the MC: water-based part of Decametoxine (0,1 %), CMS-Na, oxyethylcellulose, polyvinyl variance.

Results
Complete elimination of inflammation in the marginal periodontium in the study group has been achieved after 5-6 days of treatment, in the control 7-8 . In the patients of the main group inflammation was eliminated at 2,2 ± 0,1 days earlier than patients in the control.

Conclusions
The obtained results of the study indicate that MC has expressed decametoxine of clinical efficacy in the treatment of cataral gingivitis.

**UDC:** 616.711-007.54:615.825

**Dniprovskova A.V.**

**Kinesotherapy programs efficacy in patients with scheuermann’s disease and different sagittal spine alignment**

Vinnitsya national medical university named after M.I.Pyrogov (Pirogov str.,56, Vinnitsya, Ukraine)

**Summary.** Different spine sagittal contours in classic and lumbar Scheuermann's disease are associated with various muscle imbalance. A randomized controlled trial of the efficacy of kinesiotherapy programs in patients with Scheuermann’s kyphosis and lumbar Scheuermann’s aged 16-26 years (mean age 20.6±0.3 years) was performed. We associate the efficiency of the kinesiotherapy program with applying a differential approach to prescribing the exercises according to the variation of sagittal spinal alignment.

**Key words:** Scheuermann’s disease, sagittal spine balance, kinesiotherapy programs.

**UDC:** 616.311:616.31-001:611.018

**Gorai M.A.**

**ESTIMATION OF TREATMENT EFFICACY OF THE ORAL MUCOSA LEUKOPLAKIA OF TRAUMATIC GENESIS ACCORDING TO THE CYTOLOGICAL EXAMINATION INDICES**

Vinnitsa National Pirogov Memorial Medical University Department of Therapeutic Dentistry

**Introduction**

A cytological examination of the treatment efficacy of the flat and verrucous forms of the oral mucosa leukoplakia of traumatic nature was performed. Study of the
morphofunctional peculiarities of the epithelium surface layers is required to understand the processes occurring in the oral mucosa in case of chronic mechanical injuries. Performance of qualitative and quantitative cytological examinations allows to determine the methods and approaches of treatment and to estimate its efficacy.

**Research objective**

Estimation of treatment efficacy of the patients with the oral mucosa leukoplakia of traumatic genesis according to the cytological examination indices.

**Materials and methods**

The cytological examination method and its estimation was carried out by recommendation of Vlasova L.F. et al. [2001] and Banchenko G.V. et al. [2001]. First of all the treatment method provided obligatory removal of the traumatic agent. The local treatment of the leukoplakia focus implied application of 2% urea solution for 2 minutes, phonophoresis with 0,1% solution of Galavitum for 10 minutes for the course of up to 4 sessions in case of the flat leukoplakia and 6-8 - in case of the verrucous type. General treatment: "Arginine-Zn", "Decamevitum", licorice root decoction. For hygiene care of the oral cavity the patients were recommended to use hygiene products of the firm PresiDENT.

**Results**

The performed cytological examination was based on the qualitative and quantitative characteristics of the state of the epithelial cell development stages and cytopathological changes of the cell population.

The main component of the cytogram cell line from the oral mucosa leukoplakia areas was keratinized acaryotic cells of the 6th differentiation stage 80,08±0,42% in case of the flat leukoplakia and 92,6±1, 49% in case of the verrucous one. The cell differentiation index made up 565,94±2,97% in case of the flat leukoplakia and 588,6±1,06% in case of the verrucous one. The number of the epithelial cells of the 5th maturity stage increased after treatment in the cytograms of the main group of the patients with keratoses. Reduction of the cells of the 6th differentiation stage and similar reduction of the CDI was observed as well as absence of a significant dynamics of all the indices of the epithelium cell elements in the comparison group of
the examined with the flat and verrucous leukoplakia.

**Conclusion**

1. Influence of a chronic mechanical injury in the oral mucosa leads to the oral mucosa leukoplakia.

2. In the cytograms from the injured areas the keratinized acaryotic cells of the 6th differentiation stage prevailed that testified to derangement of the oral mucosa epithelium maturity processes.

3. During the treatment the number of the epithelial cells of the 5th maturity stage increased 2,6 and 4,6 times (with the flat and verrucous leukoplakia respectively) in the cytograms of the main group of patients with keratoses and the number of cells of the intermediate transformation approximated to the level of healthy persons of the control group.

4. Absence of a significant dynamics of all the indices of the epithelium cell elements in the comparison group of the examined with the flat and verrucous oral mucosa leukoplakia as compared to the primary ones (p>0,05) testified to derangement of the maturity and differentiation processes as well as inefficiency of the performed treatment.

5. A positive dynamics of the cytologic analysis indices and normalization of the physiological state of the oral mucosa after treatment of the patients from the main group testified to a high efficacy of the developed method for treatment of the patients with oral mucosa leukoplakia as compared to the traditional one.

The prospect of the further research is implementation of the proposed method for treatment of leukoplakia of traumatic nature into the dentist's practice with further determination of its efficacy.

**UDC:** 615.015.8:579.62:616-002.3

**Prevar A.P., Kryzhanovskaya A.V., Dzys N.P.**

**Analysis sensitivity clinical microorganism’s strains to antibiotics isolated from the centers of inflammatory processes of soft tissue**

Vinnitsya national medical university named after M.I.Pyrogo (Pirogov str.,56,
Vinnitsya, Ukraine)

**Summary.** This article analyzes the sensitivity of bacteria to antibiotics. The results obtained during the four years of research material isolated from source of inflammatory processes of the soft tissues. It was established that the most common cause of inflammatory processes of the soft tissues were *Staphylococcus aureus, Enterobacter cloace, Citrobacter freundii, Proteus vulgaris* and *Escherichia coli*. Clinical strains of microorganisms showed sensitivity to antibiotics gentamicin, ciprofloxacin, ofloxacin, vancomycin, lincomycin, rifampicin, which must be considered when treating patients with purulent-inflammatory diseases of soft tissues. 

**Key words:** antibiotics, resistance, pyo-inflammatory processes.

**Introduction**

Instable economic, fertility declining and a high level of general mortality make reproductive health problems particularly important. Female reproductive system is the most dynamic biological object. Female genitals are extremely sensitive to adverse environmental factors. That why new adaptation mechanisms, which have in certain circumstances the properties of the pathological process in the future can cause pathomorphological changes.

Urgency of the problem is determined by a wide range of clinical manifestations of dishormonal disorders and by the severity of complications of the disease. Late diagnosis and correction of these disorders lead to the primary function changes in the reproductive system become persistent organic changes such as chronic pain syndrome, infertility of various origins, tumors in the ovaries, endometriosis etc. Subsequently long-term incapacitation or disabilities of reproductive age women are probable. The result of the negative impact on the female reproductive function is the ovarian tumor. In most cases the absence of symptoms and pathogenesis uncertainty complicate diagnosis and effective treatment of this pathological condition.

One of the more serious consequences of female reproductive function is infertility. WHO multicenter study devoted to the causes of infertility founded that it was the
most frequent reason for women have tubal obstruction and pathology. They give rise to ectopic pregnancy rate at which the statistics in recent years has been growing steadily worldwide. According to most scholars, it is a result of inflammatory changes of the fallopian tubes and of ectopic pregnancy in unaffected by inflammation fallopian tubes. Inflammatory processes and their consequences negatively affect reproductive as well as nervous, endocrine system, psycho-emotional status of patients.

Particularly relevant is the problem of chronic pelvic pain. Only 40% laparoscopic surgery for pelvic are conducted because of chronic pelvic pain, and only 30% of them are able to detect infectious, inflammatory or other pain factor. Female reproductive disorders and pain syndrome accompany the chronic venous insufficiency of the pelvic organs as well. Violation of the blood supply of the pelvic organs and deterioration of blood supply to the uterus and appendages background venous stasis lead to the development of ischemic tissues, tissue hypoxia, release of biologically active neurotransmitters. It’s proven that the steroid hormone is involved in the process of degradation of the veins. The difficulty of diagnosis of this pathological condition is that the disease often runs as inflammation of internal genital organs.

Thus, all the above indicates the important role of psychological stress, characteristics of reproductive behavior dishormonal disorders, hypoxic conditions, microbial invasion, immune status, genetic factors in the development of female reproductive function and the need for further scientific research to determine the etiologic factors and features of the mechanism of female reproductive function.

**UDC: 616.155.392.2.-053.2**

**Furman V.G.**

**Herpes-assosiated syndrome of the lymphadenopathy in children**

Vinnitsya National medical university N.I. Pirogov memorial, pediatric department № 2 (Pirogov str., 56, Vinnitsya, Ukraine, 21018)
Introduction. During the last years at the background of the immuneinsufficiency growing we found some changes at the structure of infection diseases in children with prevalence of the opportunistic infection. Especially its connected with infections called by viruses Herpes viridae (cytomegaloovirus (CMV), simplex herpes virus of the 1- and 2-type (VHS 1/2), Ebstein-Barr (EBV). 6 type of the herpes virus. [Долгих Г.І, Соколова Т. Ф. та інш., 2011]. The most common period of the infection of this virus infection is a period of a childhood, especially with input to the pathological process of lymphatic nodes. [Бордий Т.,2011]. Different clinical forms and manifestation of the herpes infection, chronic currency, abilty of the different types of the virus transpassing, quick widespread and high virulency allow to be one of the most popular disease in the world (15,8 %) after influenza (35,8%) as a reason of the death [Корсунская И.М., Флакс Г.А., 2009]. Role of the herpesvirus as one of the most searious factors in the development of the immunopathology is estimated with its unique biological features: high tissue tropic, persistance and latent staying in the organism of the patient [Каї Н. Ю.,2008]. Immuneinsufficiency caused by uncopmlete of the different elements of the immune system and overloading high elimination of the virus from the organism, create abilities for the activation of the latent infection and more severe currency of the disease [Buasson et al.]. Due to these factors appears high scientific interest to the study of the herpes infection at the development of the lymphadenopathy for the evaluation of its role in development of the pathology and carrying of the adequate treatment.

The aim of our study was to estimate patological meaning of the herpes viruses in development of lymphadenopathy in children.

Materials and methods. For the evaluation of the scientific efforts we passed retrospective analyze of the 30 cases of childrens disease with herpes virus, supervised with lymphadenopathy at the age from 3 up to 17 years old that passed treatment at the hematology department of Vinnitsya childrens regional clinical hospital.

Criteria of include to the study was providing of the serological test for immunoenzyme method. Especially we studied levels of IgM and IgG to herpes
simplex virus 1- and 2- types, CMV, IgM and IgG to capside (VCA), earl (EA) and nuclear (EBNA) antibodies of Ebstein-Barr virus according to Buisson et al. Method. Criteria of exclude were presence of the hematological and immune disorders, tuberculosis, AIDS.

Results. Estimation of the sexual and age peculiarities children with herpes infection, connected with lymphadenopathy demonstrated that typical patient is a boy with 7 – 11 years of age.

During the analyze of the clinical data we estimated that syndrom of lymphadenopathy that supervise herpes infection was found in 23 patients (76,6±8,2%), hepatosplennmegaly in 8 pateints (26,6±7,9%), in 3 cases (10,0±2,4%) hepatitis was confirmed, long hypertermic syndrome in 14 (46,6±6,1%) and in 2 patients (6,6±1,4%) injury of the eyes.

19 children were brought (63,3±8,7%) to the group of the frequent ill patients (manifestation of the acute viral infection was observe 6-8 times a years).

Widespreading of the children according to the type of the herpes infection showed that EBV-infection was present in 18 cases (60,0±7,9%), every third child had replication of the EBV. Hepatosplennmegaly was diagnosed in every second case, 12 patents (66,7±6,1%) had signs of the lymphadenopathy syndrome.

Herpes-virus infection of the 6 type was estimated in 6 cases (20,0±5,2%), that clinically manifested with lymphadenopathy, hypertermia, and hepatoplasnnmegaly in third part of all patients.

CMV-infection was diagnosed in 9 patients (30,0±3,3%) at the background of the positive results of the blood tests for the presence of the low evidence IgG and IgA as well as DNA. Clinically syndrome of lymphadenopathy was diagnosed in 7 patients, every third patient had hepatitis, in 6 cases (66,6±6,1%) we found hypertermia. In 4 children (13,3±1,4%) estimated herpes-virus infection of 1- and 2-nd type that clinically manifested with lymphadenopathy syndrome, hypertermia, exantema and enantema at the mucous membranes of lips, nose, skin of the face. Mix-infection (CMV and EBV) was diagnosed in 17 cases (56,7±4,3%). Syndrom of lymphadenopathy was occurred in every third child, supervised with hypertermic
syndrome in 12 patients (70,5±6,8%) and hepatopleenmegaly in 11 cases (64,7±6,3%).

**Conclusion**

1. Passed retrospective analyze of the cases of the diseases demonstrated that herpes-viral infection in children in 76,6±8,2% cases is supervised with lymphadenopathy syndrome.

2. Dividing of the patients with herpes infection, connected with lymphadenopathy syndrome according to the sex and age of the patients showed dominance of the boys at the age from 7 up to 11 years old.

3. At the clinical presentation of the herpes infection except lymphadenopathy we found increasing of the body temperature (46,6±6,1%), hepatospleenmegaly (26,6±7,9%), hepatitis (10,0±2,4%) and exantema (13,3±1,4%).

4. As result of the study we found a group of the children (63,3±8,7%), that can be brought to the group of frequent ill (with clinical manifestation of the acute viral infection 6-8 times a year).

5. In children with EBV syndrom of lymphadenopthy was observed in 66,7±8,7%, in CMV infection - 77,7±6,9% cases and in every third patient mix-infection was estimated (CMV and EBV).

So, we can confirm that carried investigations show important role of the Herpes viridae family in development of the lymphadenopathy in children. So, its very important to study frequency and peculiarities of the clinical currency of the herpes infection in children and its role in development of lymphadenopathy syndrome.

**Key words:** herpes infection, children, lymphadenopathy.

**UDC:** 616.24 - 002 – 053.4

**Garlinska Y. V.**

**Clinical features of community-acquired pneumonia in young children**

Vinnitsya National medical university N.I. Pirogov memorial, pediatric department № 1 (Pirogov str., 56, Vinnitsya, Ukraine, 21018)
Summary. Under supervision there were 40 children with community-acquired pneumonia, aged 1 month to 3 years. Assessment of the severity of pneumonia was performed by point scale developed by the materials of the 12th Congress of Pediatricians of Ukraine in 2010.

Key words: community-acquired pneumonia, children of early age.

UDC: 616.34-005.1

Grebeniuk D.I.

Risk factors of the recurent gastroduodenal ulcer bleeding
Vinnitsya national medical university named after M.I.Pyrogo (Pirogov str.,56, Vinnitsya, Ukraine)

Summary. Prognosis of the recurrence of bleeding is the important factor for choosing of the correct approach to treatment and for course of the disease in general.

The aim of our study was to reveal the risk factors recurrence of gastroduodenal bleeding of the ulcerative origin among the examined patients.

Key words: gastric ulcer, duodenal ulcer, gastroduodenal bleeding, recurrence of the bleeding.

UDC: 579.61:616.001.17

Nagajchuk V. I., Nazarchuk O. A., Paliy V. G., Makatz E. F., Burkot V. M.

The study of qualities of microflora from burn surfaces in patients with burns
Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

Introduction. Infectious complications are essential problems in combustiology. We aimed to study qualitative and quantitative consistency of pathogens of wound infection when burns take place, study the level of resistance to antibiotics and antiseptics.
Materials and methods. We studied microflora isolated from wounds in 236 patients with burns, been treated in combustiological department of Vinnitsa regional clinical hospital named after N. I. Pirogov. We studied microflora of burn wounds before antibacterial administrations, repeating every 7 days during one month of the treatment. There were isolated 417 nosocomial strains of microorganisms during the period of 2011 - 2013 years. There identification was carried out, sensitivity of isolated strains to antibiotics was studied.

Results and discussion. Microbiological monitoring have shown, that *Staphylococcus* (12,5 - 33,7 %), *Pseudomonas* (27,6 - 32,7 %), *Acinetobacteria* (22,4 - 33,8 %), *Proteus spp* (3,8 - 5,1 %) were main causative agents of burns complications. Gram-positive and Gram-negative bacteria were found as in monoculture (31,0 - 58,0 %) so as in associations (21,0 - 40,0 %). There was found high level of resistance of *Staphylococcus spp.*, *P. aeruginosa*, *A. baumannii* to antibiotics, which were used for prophylaxis of wound infection in patients with burns.

Conclusion. To optimize prevention and treatment of purulent-inflammatory complications of wounds in patients with burns regular monitoring of pathogens’ dissemination in combustiological department and their sensitivity to antibiotics are to be held.

Key words: burns, infection, microflora, antibiotics, resistance.

UDC: 616.36 – 008.5: 616 – 089.48

Savoljuk S.I., Vovchuk I.N., Yarmak O.A., Losiev V.O.

Comparative characteristics of the efficacy and safety open methods internal biliary decompression in surgery of complicated noncancer obstructive jaundice

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

Summary. This paper analyzes the early and late results of surgical treatment of 121 patients with complicated noncancer obstructive jaundice which occasion by open
internal biliary decompression (choledohoduodenostomy – 87, choledohoenterostomy – 34). Early results are analyzed from the perspective of risk assessment development and progression postdecompressive liver dysfunction and long-term results – by assessing the biochemical indicators of microbial translocation, tensions regional immunity system and the degree of recovery functional liver into the bile and analysis of quality of life of the operated patients. The conclusion about the priority use choledohoenterostomy as the method of choice open internal biliary decompression in the surgical treatment of patients with complicated noncancer obstructive jaundice.

**Key words:** noncancer obstructive jaundice, the traditional methods of internal biliary decompression, choledohoduodenostomy, choledohoenterostomy, early and late results, liver dysfunction, quality of life.

**UDC:** 616.34-007.43:616-018.2-007.7

Vlasov V.V., Kalinovsky S.V.

**Phenotypic of undifferentiated dysplasia of connecting tissue in patients with umbilical hernia**

**Summary.** Phenotypic of undifferentiated dysplasia of connecting tissue was determined in 208 patients with umbilical hernia. Disturbances in motor function was the most common for this patients (91,4%), incorrect posture (87,02%), lowering the tone of abdominal muscles (86,5%), flatfoot (82,69%). According to the criteria of T.Y. Smolnova (2003) most patients were with undifferentiated dysplasia of connecting tissue of average degree (51,4%). This sign was determined in persons with mesomorphic, endomorphic and endomesomorphic somatotypes. Most patients have MASS-type phenotype (63,5%), 15,9% of patients have marfan – type phenotype and 23,1 of them - Ehlers-type phenotype. The patients with brachimorphic stature (18,28 %) have undifferentiated dysplasia of connecting tissue of weighty degree. Obesity (45,68 %) was the most common feature in patients with undifferentiated dysplasia of connecting tissue of average degree.

**Key words:** umbilical hernia, undifferentiated dysplasia of connecting tissue,
somatotype, type of stature, hernia defect.

**UDC:** 616.33 – 006 : 611.018.7 :[ 616 - 052]

Kharchenko A.V.

**Dysplastic changes of gastric mucosa detected by the issr-pcr method in patients with gastric cancer**

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**Introduction**

The main cause of death in developed countries, along with mortality from cardiovascular processes and their complications, is mortality from malignant tumors, the number of which is constantly growing.

In Ukraine in 2009, gastric cancer has taken the III (9.0%) place in the structure of male oncopathology and the VI (5.6%) place in female one; in the structure of the oncomortality it takes the II (11.8 and 9.3%) in both groups.

Severe dysplasia is characterized by cell atypia, caries, nuclei’s hyperchromatosis, dramatic growth of nuclear-cytoplasm ratios and common pseudostratification.

The relative genome saturation with one or another microsatellite sequences is the result of many factors, among which the major is the level of stability of the microsatellite DNA. Intense extension of microsatellite sequences due to replication errors is called microsatellite expansion.

The nature and patterns of microsatellites’ distribution in the genome is of particular interest because of the role they play in the development of oncologic diseases.

*The purpose* of the research is detection of changes in gastric mucosa in patients with ulcerative- infiltrating gastric cancer by the ISSR-PCR method.

**Materials and methods**

Samples of gastric mucosa with signs of dysplasia of different stages have been examined to study changes in DNA by means of polymerase chain reaction (PCR).

Individual DNA- typing (genetic typing) of samples of gastric mucosa has been
performed by DNA amplification in PCR, using the S2 ISSR-primer with \((\text{AGC})_6\) G structure.

**Results**

Genetic typing of gastric mucosa epithelium in patients with ulcerative- infiltrating gastric cancer found the sufficiently stable DNA – profiles, presented by the expansion of fragments, measured 520 and 620 p.n. (pairs of nucleotides) in all observations that were completely different from the profile of normal marker.

Considering the fact, that in all observations, as a result of genetic typing, DNA – profiles with evident expansion of fragments, measured 520 and 620 p.n. have been obtained, the latter can be considered as the marker of tumor occurrence in patients.

Among 18 patients, who have been given a diagnosis of early gastric cancer without metastases into lymph nodes, disseminated tumor cells have been detected in five cases, where: one case of low-grade differentiated adenocarcinoma and one case of low-grade differentiated adenocarcinoma with transition to signet ring cell cancer, two cases of undifferentiated cancer and one case of signet ring cell cancer.

However, in all cases, where metastases into lymph nodes were evident, disseminated tumor cells of peripheral blood have also been detected by the ISSR-PCR method.

The presented data makes it evident that in peripheral blood of patients with ulcerative- infiltrating gastric cancer, who are conventionally given a diagnosis of M_0, tumor cells have been detected in 27.8% of cases, using the ISSR-PCR technique.

**Conclusions**

In ulcerative- infiltrating gastric cancer the genetic typing of gastric mucosa found the stable DNA – profiles, presented by the expansion of fragments, measured 520 and 620 p.n. (pairs of nucleotides). This makes its genetic identicita evident with the possibility to use them as the malignancy marker.

DNA- typing of tumor samples of patients with ulcerative- infiltrating gastric cancer without visual metastases, as well as their peripheral blood samples, detected the sufficiently stable DNA – profiles in the tumor material and were presented by the expansion of fragments, measured 520 and 620 p.n.; however, amplificated profiles of peripheral blood samples of these patients were positive only in 27.8% of cases.
This indicates the ability of primary tumor to dissemination and risk of early metastasizing.

The marker is further planning to study in practice to diagnose neoplastic changes of gastric mucosa epithelium in patients with chronic atrophic gastritis.

**Key words:** DNA, amplicones, phenotype.

**UDC:** 616.89:613.9:616.33 – 008.3

**Yushchenko L.O.**

**Emotional condition of adolescents with functional dyspepsia**

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Functional dyspepsia (FD) refers to the most common gastroenterological diseases. Very often the first symptoms manifest themselves in the childhood. The research objective was to reveal peculiarities of the psychoemotional condition of adolescents with FD.

**Materials and methods** The research involved 120 children (14-18 years old) whose diagnosis at the in-patient hospital was established as FD according to the Rome III criteria [Tack, Talley, 2013]. There were 30,83% of children with an epigastric pain syndrome (EPS), 27,50% with a postprandial distress-syndrome (PDS) and 41,67% having both EPS and PDS. The control group consisted of 66 apparently healthy adolescents. All the examined were tested using Eysenck Questionnaire (1975) and Buss-Durkee Inventory (1957).

**Results.** The level of the extraversive indices of the adolescents with FD did not significantly differ from the indices of the healthy ones (15,97±2,84 and 13,77±2,50 scores). The values characteristic of the average indices according to the extraversion–introversion scale prevailed (60,83 and 73,33%, respectively) both among the ill and healthy children. The specific weight of the indices of extraversion–introversion high level in the children of the main and control group made up 39,17 and 26,67%.
The neuroticism level of adolescents with EPS and with PDS and EPS combination was considerably higher (18,59±2,63 and 18,10±3,02 scores against 10,08±2,70) than of the apparently healthy ones. The specific weight of the indices typical of neuroticism made up 30,30% in the adolescents with PDS, 75,68% — in the children with EPS and 66,00% in case of EPS and PDS combination. The rest of the indices (69,70; 24,37; 34,00%, respectively) were characteristic of the emotional stability. Among the apparently healthy adolescents the specific weight of the emotional stability values made up 75,00% that significantly exceeded the indices of the main group (p<0,05). The main characteristics of the frankness degree confirm the reliability of the received results of the examined (4,53±1,24 to 3,12±1,21 scores). While estimating the physical aggression indices it was established that its level among the healthy adolescents was significantly higher, (p<0,05). The data quite similar to the previous ones were registered on estimation of peculiarities regarding division of the verbal and mediate aggression indices.

**Conclusion.** The received data revealed psychoemotional peculiarities of adolescents with FD that requires creation of interdisciplinary alliances for provision of qualified assistance to such categories of patients.

**Key words:** functional dyspepsia, adolescents, emotional condition.

**UDC:** 615.451:616.346.2-002

Arseniuk V.V., Bartosh A.M., Zarytsky O.O., Nazarchuk S.A., Grinyv O.M.

**Influence of antiseptic medicine decasan® on appearance of adhesion process in abdominal cavity when peritonitis happens**

**Summary.** In the article data of antimicrobial qualities of decasan® had been presented. High sensitivity of gram-positive and gram-negative microorganisms, pathogens of purulent-inflammatory diseases of abdominal organs, had been found. According to the data of retrospective analysis there had been found high effectiveness of antiseptic medicine decasan® in prophylaxis of adhesion illness in postoperative process.
**Key words:** peritonitis, antiseptic medicines, adhesive disease, abdominal cavity, decasan®.

**UDC:** 579.86: 616.662-002

**Tretjakov M.S.**

**Characteristic properties of enterococci that are involved in the development of balanoposthitis**

**Summary.** The results of bacteriological inspections of patients with balanoposthitis are expounded in the work. It is shown increase in the etiologic structure of this disease of role of enterokokus. It is given the results of learning sensitivity of causative agents of balanoposthitis to the antibiotics, antiseptics and antifungal means.

**Key words:** balanoposthitis, microflora, sensitivity to antimicrobial means.

**UDC:** 001.891.5:579.2

**Kolodii S.A.**

**Experience of application of test control for study of microbiology, virology and immunology**

Vinnytsya National Pirogov Memorial Medical University, microbiology, virology and immunology department (Pirogova str, 56, Vinnytsya, Ukraine, 21000)

**Summary.** Experience over of application of control of knowledge of students is in-process brought on the department of microbiology, virology and immunology. It is well-proven that test control is one of methods of determination of level of knowledge of students. Test control assists activation of cognitive activity, forms skills of independent work for students, develops ability logically to think. Application of test control of knowledge it is expedient to use in a complex with other methods.

**Key words:** microbiology, virology, immunology, test control.
Introduction
The included of Ukraine in the European system of higher education accompany transformation processes. Higher school of our country has a goal to prepare competitive specialists. The pedagogical collectives of medical institutes of higher enter modern educational technologies of studies with the use of analytically-searching work and scientific information. An important task is introduction of new technologies of studies, presentation of them on a new high-quality level, embodiment of them in practice of collectives of departments. Research purpose. A ground of application of test control is for the estimation of quality of knowledge of future doctors.

Materials and methods
Study of microbiology in preparation of doctors it is necessary for a fight against infections. Knowledge from microbiology are base for clinical disciplines, as assist logical perception of clinical data, form clinical thought without which it is impossible to become a highly skilled specialist.

For the improvement of quality of preparation of specialists there is a necessity of application of modern methods of studies, control, which provide the increase of creative activity of students, sent to forming and development of professional thought.

Results
According to an executable code from microbiology on the study of discipline 8 credits are taken, 240 hours. During the course of study 3 modules are foreseen: module № 1 - 90 hours/3 credits, module № 2 - 90 hours/3 credits, module № 3 - 60 hours/2 credits. On completion of course of study students fold final module control which is examination.

The continuous checking of knowledge of students system is widely used . To that end test tasks geared-up on the topic of every practical employment (current control of initial level of knowledge). Writing test control is conducted at the beginning of employment, occupies 7-10 minutes and allows to define the initial level of
preparation of every student.
Final control is conducted for to the tests which include task different to the type. Test control provides simultaneous verification of knowledge of students of all group and forms for them motivation for preparation to every employment. Main advantage of tests is the fully automated verification of knowledge of students, which provides maximally possible her
Current verification is this studies, reiteration and analysis of educational material. With the purpose of exposure of end-point of studies it is necessary to apply final control on which it is possible to judge students about general achievements.

Conclusions
For the choice of method of control of knowledge it is necessary to take into account both advantages and lacks of different methods. The study of microbiology mortgages the important base of fundamental knowledge, to estimate which one method it is impossible. Therefore test control it one of modern and optimal methods. The prospects of further developments is a necessity to estimate knowledge and ability not only by means of tests, and in a complex with other methods.

UDC: 378.147
Krushynska T.Y., Sharun A.V., Stepansky D.A.
The educational technology of practical learning the theme “microbiological basis of antibiotics therapy” in higher medical school
State Establishment Dnipropetrovsk Medical Academy of Health Ministry of Ukraine”, Department of Microbiology, virology, immunology and epidemiology (9, Dzerdzhisko str., Dnipropetrovsk, Ukraine 49044)

Summary. The formation of students skills connected with usage of antibiotics in medical practice are formed on the practical classes. The article describes in details the pedagogical technology for these classes, aimed at enhancing activation of students cognitive activity through a combination of methods and means of teaching,
Learning of microbiological basis of antibiotics therapy is one of the most important things in a practical skills of the future physicians because of wide use this kind of drugs in medical practice and existing of numerous problems connected with their usage. According to the requirements of credit-modular system skills are formed as a result of vigorous activity like discussing problematic situations, conducting experiments and interpretation of their results, the study of regulatory and reference materials, cross reviewing of students performed tasks, business games. Our goal was to develop educational technology for practical classes on "Microbiological basis of antibiotic therapy".

Materials and methods
The normative documents on the organization of the educational process at Ukraine's universities and scientific-pedagogical literature on the problem of educational technologies have been analyzed. Observation method was used to determine the degree of activity of students when performing different tasks in the form of individual and group work and the analysis of their written works - to identify problems in achieving specific learning goals. The usefulness of different video-materials for use as a visual teaching facilities was defined by expert estimates. Readiness of teachers to use on practical class multimedia and simulation training methods was determined by formal conversation.

Results
The basic element of educational technology is the goal of learning. The specific objects of the practical lesson on the theme "Microbiological basis of antibiotic
therapy” are to develop the following student's skills: classify antibiotics by various parameters, explain their mechanisms of action, determine the sensitivity of microorganisms to antibiotics, explain the mechanisms of antibiotic resistance, to assess the possible negative effects of antibiotic therapy. They correspond to different stages of the lesson and are implemented by using appropriate methods and teaching aids.

For the formation of ability to classify antibiotics by acceptable method the demonstration of symbolic visibility (tables, charts) is used. Assignments for classification are easily converted to test that may also be used at this stage. To stimulate their cognitive activity it’s necessary to put a problematic task concerning the connection of the mechanism of action of antibiotics with the selectivity of their action. Ability to determine the sensitivity of microorganisms to antibiotics has expressed professional orientation. Students learn methods of standard disks and serial dilution, interpretation of the results using tables, the choice of the most effective antibiotic. Ability to assess the possible negative consequences of the use of antibiotics is achieved by solving tasks on calculation chemotherapeutic index of several drugs and identification of the most innocent among there drugs. This ability is also developed during role-play on scenario "doctor - patient" standard for medical higher schools. To summarize and systematize the acquired knowledge and skills it will be useful to make an algorithmic scheme of doctor's actions as for on the correct choice of antibiotics for a particular patient.

**Conclusions**

The teaching the topic "Microbiological basis of antibiotic therapy” with the proposed educational technology in compare is on with conventional methods was perceived by students as more interesting. Teachers noticed the high level of their cognitive activity, in fact, the students were forced to be active through out the class. Variety and diversity of the fulfilled tasks allow students to show their best regardless and create a favorable emotional background for learning.

The success of achieving educational goals is confirmed by delayed control of knowleges, which indicates the strength hand complibility of performed skills.
Summary. The effectiveness of implementation achieving the ultimate goals of the study subjects at the Department of Microbiology, Virology and Immunology of Higher State School of Ukraine "Ukrainian Medical Stomatological Academy" is implemented using conventional didactic principles of the educational process with the use of modern forms of organization. Teaching materials in the discipline that provide information and methodological support student learning. The structure and content of teaching materials enhance the learning process, stimulates independent educational-cognitive activity of students and motivate their learning.

Key words: educational process, department, information and methodological support

Introduction

Effectivity of realization in achievement of the ultimate goals in study of subject on the department of microbiology, virology and immunology of HSEE “UMSA” is realized with conventional didactic principles of studying process with involvement of complex of modern principles of it’s organization.

Basic part

According to the module system was created teaching materials of discipline
considering with profile preparing of future specialists, which provides informational support of student’s educational process: tests for initial knowledge control (using on the first study of the course), tests for primary knowledge of students (used on the each practical study), collection of tests “Krok 1” of the course, which are also used on the each tutorial lesson, the manual on microbiology, virology and immunology, which provides effective study in class (also practice) and testing work of students, list of practical questions for final module control 1, 2 for students of stomatological faculty and 1, 2, 3 module control for students of medical faculty, complete selection of test tasks, which are used for computer control of student’s knowledge of each module and discipline in general, for all lectures are made multimedia presentations, present printed texts of lectures, film archive of own gathering and the collection of BBC films, methodical handbook for individual study of student for practical study.

Positive achievement towards information and methodological support student learning consider creating a team of teachers textbooks department – “Microbiology, virology and immunology. Manual for dental faculty students. Part 1, 2” (recommended by CMC HSEE “UMSA”), “Microbiology, virology and immunology. Manual for stomatological faculty students. Part 1, 2” (recommended by CMC MES of Ukraine).

The manuals set out plan for thematic workshops and lectures, thematic plan for independent work in microbiology, virology and immunology, the structure of the discipline, scoring for current educational activity, methodological development topics of practical lessons from all sections of medical microbiology. The main method of learning direction at the department of microbiology, virology and immunology is to develop practical skills of the students, followed by the control level of mastery. The structure and content of teaching materials enhance the learning process and stimulates independent educational-cognitive activity of students, motivate learning.

Conclusions
1. Information and methodological support of training of students for each semantic module provides educational materials on discipline, created at the Department.
2. Educational activity of students at the Department includes theoretical provisions and the scope and level of formation of practical skills in accordance with the program of the discipline and the branch standard of higher education.

3. The structure and content of teaching materials contribute to the effectiveness of the educational process, activate self-educational-cognitive activity of the student, increase motivation for learning.

**UDC:** 37.091.33-054.6:579.61

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**Microbiology teaching of foreign students and ways of its improvement**

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**Summary.** Microbiology teaching of foreign students has definite features such as insufficient vocabulary for self-studying of textbooks, understanding of special tests and getting of general knowledge in studied discipline. In the article some methodical ways that had been used by microbiology department to overcome those difficulties were proposed. Our department had created special lecture course for foreign students composed of high-illustrated material adapted for easy understanding. We recommended active discussion and oral asking to check up prepared topics, integrated with written current and final testing, that could be helpful for better understanding of medical microbiology course by students and improving foreign for them Ukrainian, Russian, and English languages.

**Key words:** methodical ways of teaching, medical microbiology, foreign students.

**Introduction**

The methodical way of teaching plays an important role in understanding of
discipline by students, especially for those students who study medicine using foreign language. High quality of knowledge and appropriate medical education of foreign students is one of the main tasks of native educational program. Sufficient and adequate medical education allows integration of our educational ways with European medical institutions and prepares high qualified specialists.

**Materials and methods**

We analyzed results of microbiology examination for last 3 years and connected them with language knowledge (Ukrainian, Russian, and English) demonstrated by students. We compared students’ results before and after examination introduction that was proposed in 2012 in Vinnitsa medical national university. Generally, we worked out results of about 160 students who studied microbiology in 2010-2012 in English, and about 250 foreign students studied this discipline in 2010-2012 in either Ukrainian or Russian. We summarized results of this year’s testing and oral examination for reliable conclusion.

**Results**

It has been shown that quality of studying and knowledge of medical microbiology depend on language knowledge. As indicated, students without language problem were more successful in both licensed examination “Krok-1” and oral examination at the department. For example, English-speaking students with high grade passed “Krok-1” examination with results about 70 – 80 % in comparison with other students which got 45 – 65 % at testing. It has been noted that oral examination remains useful and reliable tool to check up graduation of students in definite discipline and make them studying better with high responsibility. There have been some methodical ways proposed by microbiology lecturers, which carry on classes for foreign students, to improve understanding of subject and mastering of their knowledge. Those ways included improving of lecture course by high illustrative material, ways of material explanation by teachers, multiple testing and oral discussion every lesson.

**Conclusions**

Knowledge level depends on many factors connected with both a teacher and a
student. Trying to improve understanding of medical microbiology by second year students we have been looking for many methodical ways and want to share our experience. We high recommend paying attention to necessity of more foreign language classes for students with low language grade during first 2 years studying in national universities. We indicate positive experience of oral examination as the main way to control knowledge that traditionally has been used by native medical education.

**UDC:** 579:378.147–057.875

Kryzhanovskaya A.V., Bobir V.V.

**Meaning and organization of independent work of students at the department of microbiology**

Microbiology, virology and immunology department of National medical university named after M.I.Pirogov (Pirogov str., 56, Vinnitsa, Ukraine)

**Summary.** The article discusses the importance of independent work of students for educational and practical activities students develop their clinical thinking, high-quality mastering practical skills. The author shares the experience of the organization of independent work of students at the Department of Microbiology.

**Key words:** independent work, medical microbiology, medical education.

**Introduction**

Higher education in Ukraine is undergoing significant changes. Joining the European area of education means improving the quality of education and provides for the allocation of a significant amount of time for independent acquisition of material. This implies that the student some experience of planning time and mode of testing work. This system emphasizes the learning process as a leading. Enhancing the role of independent work (SIW) is due to the necessity to train highly qualified professionals who are able to quickly make decisions and act creatively on their own.
In these conditions, the main task of teachers - well thought out and methodically to organize the SIW. The key to effective organization of the SIW is to develop the scientific and methodological support and organizational methods of student work. To the knowledge gained specific learning by doing, the student should constantly engage in self-education.

**Materials and methods**

We have substantiated the importance of independent work of students at the Department of Microbiology Vinnitsa National Medical University named after M.I.Pirogov to form cognitive and practical activities of students of clinical thinking, quality mastering practical skills.

**Results**

At the Department of Microbiology Vinnitsa National Medical University named after N.I.Pirogov proportion of independent work of students at medical school is 29 \% to 44 \% dental department, pharmaceutical department (specialty pharmacy) and 57 \% (major clinical pharmacy) 34 \% of the total number of hours. Organization of independent work of students at the Department of Microbiology consists of the following stages: self-study in the laboratory (Classroom) and extracurricular self-study. Great value in learning practical skills of independent work and research play an educational and research work. The basic condition for implementation of self-teaching and research students at the workshops is to clearly define objectives for each of its implementation, taking into account the level of theoretical material. Research provides search and active mastery of knowledge and skills to explore the formation. We have developed some directions conduct independent testing work students and monitor its implementation. The first form of the work relates to mastering the necessary theoretical information and its systematization. Students need when preparing for classes to answer questions according to the plan that the teacher takes them and explains the requirements for independent answers to them. The second type of control over the implementation of self-study concerns the resolution of clinically oriented situational problems. They encourage active learning of students, self-control and training to write a licensing exam "Krok-1". Teachers of
the department have developed several types of situational problems based on tests that were sent to the testing center.

**Conclusions**

The organization and conduct independent work much attention should be paid to training students to work with research sources, and creating the ability to organize knowledge, to think logically. For better assimilation of the material studied independently and to verify its absorption recommend extensive use of practice-oriented case studies. Thus, embodiment’s independent work focused on mastering practical skills of independent research, records of the results of microbiological studies, the formation of logical and creative thinking, learning to work with the scientific literature. Articles orientation conduct independent work helps to improve the preparation of future specialists. Learn how to work with the literature, obtained independently systematization of knowledge, research and training to properly interpret the results of microbiological tests help future professionals to adapt more quickly to the profession and perform research.

**UDC:** 616-084:614.254:614.253.4

**Fomina N.S.**

**The development of prophylactic trend in the process of training of general doctor**

Vinnitsa N.I. Pyrogov memorial national medical university (56 Pyrogov Str., Vinnitsa, 21018)

**Summary.** In the article the problems of studying of actual problems of prophylaxis of infectious diseases in students of Vinnitsa N. I. Pirogov memorial national medical university. There was shown the lack of hours, allotted for mastering in methods of aseptics, antiseptics, antimicrobial therapy while training general doctors. The ways to optimize the quality of education students on these problems were proposed.

**Key words:** medical education, general doctors, prophylaxis of diseases.
Introduction
The problem of domestic health care system is one of the key tasks in modern stage. During last years, system approaches, concerning reforming of medical care of people, were implemented. Carrying out of the reforms in medical branch needs profile departments of high studying institutions to be involved.

Main part
Every student after graduation from High Medical School must be adapted for working in primary link and must direct his attention to prevention medicine. An adequate and rational use of antimicrobial medicines is the important problem in practice of family doctor.

Number of hours is not enough in study programmes of microbiology, dedicated to mustering of methods of aseptics, antiseptics, antimicrobial therapy. This problem partly can be solved when students, residents, undergraduates, PhD students take part in scientific and practical conference “Actual problems of strategy, tactics of using and research of antibiotics, antiseptics, disinfectants”, which is held regularly in microbiology department in Vinnitsa National N.I. Pirogov Memorial Medical University. It gives the possibility to get to know modern data about using of antimicrobial drugs in different branches of medicine.

Conclusion
Further modernization of studying and methodical procuring of study process, involving integrative technologies of the study is the priority trend.

UDC: 576.8:378.147
Zhornyak E. I., Zhornyak P. V.

Experience of application of test control for foreign students to study of microbiology
Microbiology, virology and immunology department of Vinnitsya national medical university named after M.I.Pyrogov (Pirogov str.,56, Vinnitsya,Ukraine)
Summary. In the article the specific of educational process organization were analyzed among foreign students which studying at microbiology department by credit-modular system of education. It is well-proven that test control is one of methods of determination of level of knowledge of students. The control adaptability as a state of harmonious co-operation of foreign students with new educational, pedagogical and social environment has been found out. The usage of control in the combination with other methods can give good results in education of the students.

**Key words:** credit-modular system, foreign students, microbiology.

**Introduction**
Including of Ukraine to European educational space, the prospect of tacking to Bolonsky’s process promotes demand on the real professional and gives possibility to deepen relationships with other countries to our state. One of actual tasks in connection with passing to the credit-module system, which stands before the teachers of higher educational establishments on the modern stage during work with foreign students, there is introduction of new modern technologies of studies, skills for systematic perfection of own trade in the conditions of modern quick-change world scientific environment.

Research purpose. Ground of application of test control on the department of microbiology, virology and immunology for the estimation of quality of knowledge for foreign students.

**Materials and methods**
For the improvement of quality of preparation of foreign students there is a permanent necessity of application of modern methods of studies, control, which provide the increase of creative activity of students, sent to forming of professional thought. Introduction of daily test control assists objectivity of evaluation of knowledge.

**Results**
For this purpose successfully used current, thematic and final verification of
knowledge of students. Final control on the department of microbiology is conducted for to the tests which include task different to the type: the open, closed tests, tests on accordance, on determination of sequence et al. Test verification owns a number of advantages before traditional forms and methods, harmoniously written into modern pedagogical conceptions. This method allows rationally to use time of employments, overcome the greater volume of maintenance and define the results of mastering of material, give mind on admissions in knowledge and to amend to them. Test control provides simultaneous verification of knowledge of students of all group and forms for them motivation for preparation to every employment. Besides it is the fully automated process which provides maximally possible objectivity (puts all students in equal terms in the process of verification of knowledge) and wins in speed of verification.

Thus, test verification of knowledge is a form of fixing, comprehension and systematization of material which develops cognitive activity of student. Such control enables permanent management and adjustment of activity of students. It allows to have exhaustive information about motion and quality of mastering of material, in good time to make alteration to the educational process.

Conclusions and prospects of further researches

Tests are the optimal mean of the pedagogical measuring for foreign students which are actual in transition on the multimark rating system of evaluation.

UDC: 378.147:579.61:378.046-021.68

Paliy G.K., Ivanova S.A., Kovalchuk V.P.

Experience of teaching of clinical microbiology for post-graduate students

Microbiology, virology and immunology department of Vinnitsya national medical university named after M.I. Pyrogov (Pirogov str., 56, Vinnitsya, Ukraine)

Summary. An experience of teaching of clinical microbiology for post-graduate students at microbiology department of Vinnitsya national medical university named after M.I. Pirogov has been given in this article. Methodical and educational ways of
planning and time table composition of educational course for this group of students have been discussed. The up-to-date problems of clinical microbiology have been noted.

Key words: clinical microbiology, post-graduate education, experience of teaching.

UDC: 378.147:579.61:378.046-021.68
Shyrobokov V.P., Voytsehovskiy V.G., Yakimenko A.I.
Significance of discipline “microbiology, virology and immunology” at student mastering for future medical occupation in modern circumstance

Summary. Foundation and significance of discipline “Microbiology, virology and immunology” at education of future doctors in Ukrainian high educational medical institutions have been discussed in this article.

Key words: teaching, discipline “Microbiology, virology and immunology”.

UDC: 61:577/378.579
Klymnyuk S.I., Pokryshko O.V., Tkachuk N.I.
Peculiarities of educational process in the ternopil state medical university

Summary. Experience of teaching at microbiology, virology and immunology department of Ternopil State Medical University was described. Theory and practice together is the basic credo of the educational process today. The system of medical education is changing now. The main purpose of these changes is the quality of education improvement, and the ultimate goal is the formation of specialist with highest qualification characteristics, with professional level of state standards. Modern educational process is impossible without the introduction of computer technology and the integration process when subjects are interrelated in time both horizontally and vertically, and at different levels. Now we need to develop “education ahead” which involves targeting not only for today, but also the future prospects. Modern methods of teaching in Ternopil State Medical University meets
the modern requirements of the educational process in Ukraine and allows students thoroughly master the subject, learn to apply the acquired knowledge in their future practice.

**Key words:** medical education, microbiology, electronic technology.

**UDC:** 37.016:116 – 089:377.36(61) - 057.87

Palamarchuk V.B., Bilichenko O.V.

Basic aspects of general surgery for teaching students in medical college

**Summary.** At the present stage it is very important task is to high-quality training not only doctors, but also nurses. On the quality of medical procedures depends on the result of treatment of patients, sometimes even life expectancy. Surgery is one of the main branches of medicine. It is important not only operative intervention and postoperative care and the sick. The article presents the basic theoretical and practical aspects of teaching surgery for students of medical colleges in terms of credit-modular system.

**Key words:** surgery, the learning process, skills, surgery, post-operative period.

**UDC:** 37.091.2:378.147-057/775

Didyk N.V.

Methods of interactive technologies of studies in scientifically pedagogical process of teaching of professional illnesses for students of medical faculty

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**Introduction**

Considering that professional illnesses is a part of clinical medicine devoted to studies of illnesses that appear under the influence of harmful factors of industrial environment or working process, future physicians of all specializations need basic knowledge on professional pathology for involvement of all possible instruments and
means to perform preventive measures against adverse effects of occupational hazards on human organism and if it is necessary to provide patients and injured with medical and highly skilled medical assistance in time. For in-depth comprehensive studies of professional pathology by students are the substantive issues on organization of scientifically pedagogical process of teaching of this discipline. As a matter of fact, there is necessity to teach future physicians to synthesize basic knowledge and skills obtained at theoretical and clinical chairs with new clinicoamnesic and laboratory and instrumental data typical for professional illnesses only. The object of research was to evaluate the effectiveness of involvement of methods of interactive technologies of studies in scientifically pedagogical process of teaching of professional illnesses for students of Medical Faculty.

**Materials and methods**

In accordance with calendar and subject curriculum of studies of Internal Medicine for the fifth-year students of Medical Faculty, the course of professional pathology includes 4 lectures and 12 practical classes. In general, professional illnesses were studied by 76 students of 5th year of Medical Faculty No.2 and 11 students of Medical Psychology Faculty following principles of interactive studies: active cooperation, open back coupling, equal positions and searching by the all subjects of scientifically pedagogical process. For in-depth comprehensive studies of thematic material during practical classes in professional pathology by students of Medical Faculty the Project Method and Taba Teaching Strategy have been used. The Project Method provides class and individual work of students on a topic of the class on basis of a dialogue supported by data from authoritative among students and a teacher informational sources. Students define an object, a target for their research on selected theme and they also choose a method they will use during their work on a project and actually project presentation in a classroom. Taba Teaching Strategy is called to organize the preliminary and current control changing the complexity of suggested tasks situationally. In accordance with Taba Teaching Strategy during practical class the questions that offer discussion of a theme, generalize and specifying of learnt material and also questions that determine specific clinical
Results

Average age of students in academic groups - 22,5±1,5 years old. Gender distribution in groups was as follows: 30,5% of boys and 69,5% of girls. 45,5% of students-medical psychologists were interested in a work on their projects, issues on medicosocial rehabilitation of patients and regulatory background of verification of professional illnesses against 15,8% of students of Medical Faculty No.2 (p≤0,05). A theme connected with industrial production, professional allergosis and illnesses of bronchopulmonary apparatus of toxicocochemical ethiology attracted a great interest of future psychologists. The students of Medical Faculty developed projects wherein they analyzed professional illnesses caused by functional defatigation of organs and systems, among them – illnesses of fibrose and synovial masses, circumferential nervous system as well as non-specific syndromes in clinical picture of professional illnesses. Similar interest to emergency aid during critical conditions caused by effects of professional factors and principles of medical-labour expert examination of professional pathology has been shown by the students. Obtained results display the level of occupational guidance of future young specialists, whereas priority of study of different sections of professional pathology by medical students shows their willingness to work at corresponding fields of national economy and medicine as well. In accordance with the rate of attendance of classes and academic progress it was established that there were no students who had academic debts at set terms. An average mark for academic progress in all groups amounted to 3,87. There was established that 18% of the fifth-year students of Medical Psychology Faculty had 3,0 as an average mark for academic progress, 9% of students - 3,48, 18% - 3,65, 18% - 4,05 and academic progress of 36 % of students amounted to 3,87. Average progress of the fifth-year students of Medical Psychology Faculty was 3,67. There was established that 15% of the fifth-year students of Medical Psychology Faculty had average progress in amount of 3,2, 15% of students – 3,87, 60% - 4,25, 10% -5,0 (p≤0,05). Average progress of students of Medical Psychology Faculty No. 2 was 4,07.
Conclusions

1. Interactive technologies of studies directed to personal oriented discipline teaching encourage occupational guidance of young medical students as for possible first work position and form skilled potential of professional and scientific elite in the field of medicine.

2. Used technologies of studies help professional growth and development of teachers and students.

3. The method «Project» allows a performer to form a sense of responsibility and it keeps up an interest of a researcher-innovator that makes a process of studies interesting and free of academic bounds.

4. Taba Teaching Strategy makes it possible to check a standard of knowledge including maximum possible self-check of students as for their level of material learning for a practical class that supports their interest to the discipline.

The perspective of further research consists in studying, improvement and involvement into scientifically pedagogical process of interactive technologies of studies in order to improve the quality of medical education and training of competitive young specialists who are oriented to the first work position.

UDC: 616:378.147.091.33-027.22

Yaremchuk L.V.

The use of role-playing game method during practical lessons at clinical departments

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Introduction. Modern learning environment of students is distinguished by necessity to implement innovations and current developments. Innovative teaching methods - methods which contain new ways of communication "teacher-student" and include active methods and forms of learning.
A modern teacher uses in his/her practice a variety of techniques, including playing
game methods. The game allows making students get interested in the studied material, present knowledge in an easier and "unobtrusive" form.

The range of application of game method is very broad. Games and game methods can be used in the practice of almost all teachers of clinical departments. They are especially useful in teaching subjects that have a "practical component", that is such subjects which in addition to studying the theory include rules and algorithms for practical action. The use of game methods in teaching provides a unique opportunity to gain experience before contacting with the "real" practice. Game methods are required within the educational work. They enable the teacher to work with such an important part of a student's personality like activity.

During the role play, students will demonstrate knowledge in the subject of the lessons, learn the skills of decision making, skills in teamwork, professional language, ability to ask questions, be engaged in a dialogue.

The first step of game method is the introduction of role-playing game. The next step is the division of roles. The teacher tells about the conditions and procedure of the game, assigns roles between students.

The next step is understanding by each student his/her role. The teacher if necessary corrects behaviour trajectory of each player in role-playing game.

Next comes the actual stage of the game. In conclusion, the player-patient reveals the secret of his/her diagnosis. Participants of the game exchange their points of view. The teacher makes a general conclusion - how all the issues were disclosed in full, the accuracy and completeness of answers, right terminology, and notes who among students was prepared excellently and good, and who has a problem in learning this material.

Thus, innovative teaching methods are directed at stimulating the active thinking and practical activity of students in the process of acquiring their professional knowledge. Through the introduction of new teaching methods and techniques occurs real reform of learning process and education in general, which can be implemented by every teacher in every class.

**Key words:** role-playing game method, innovative teaching methods, Clinical
Optimization of the study of microbiology, virology and immunology at the use of new technologies

Microbiology, virology and immunology department of Vinnitsya national medical university named after M.I. Pyrogov (Pirogov str., 56, Vinnitsya, Ukraine)

Summary. The article argues the use of new technologies in the lecture course in teaching discipline "Microbiology, Virology and Immunology".

Key words: new technologies, lection course, multimedia presentations.

Introduction
Discipline "Microbiology, Virology and Immunology" contains three distinct disciplines - Medical Microbiology, Medical Virology and Infectious Immunology. Each of these sciences consists of many sections in which the material is submitted to the biological properties of infectious human diseases, basing on pathogenesis of diseases caused by them, the characteristics of immunity, which is formed by different etiology of infectious diseases. Training course of Microbiology, Virology and Immunology is integrated with other disciplines, forming the ability to apply knowledge of Microbiology, Virology and Immunology in the process of further education and careers.

Basic part
The need for the formation of a high level of awareness of future physicians on issues that are most relevant to the study of the subject requires not only the speaker's own awareness and knowledge, but also the ability to apply the material so that students would be able to understand and write down the basic notions of a lecture.

The current state of reform of higher medical education requires the development, improvement, constant updating and determining the effectiveness of forms used for
student learning. Implementation of effective computer technology solves many problems associated with improved theoretical material. Availability of well-chosen information on the subject to reach a lecture students increase their interest in the topic, helps to perpetuate traversed during practical classes. The use of computer technology in the lecture course is particularly justified when there is no possibility to demonstrate the morphological and cultural characteristics of pathogens, new methods of diagnosing infectious diseases. Multimedia presentation allows for a wide audience of students to provide information on modern methods of biochemical and molecular genetic identification of infectious diseases.

Conclusions
1. Effective use of computer technologies solves many problems associated with improved digestion of theoretical material.
2. Having a well-matched information on the topic of the lecture and the use of multimedia presentation capabilities helps to increase students' interest in the subject and to perpetuate the covered material.
3. The introduction of new technologies in the lectures of Microbiology, Virology and Immunology greatly enriches the learning material and allows basic problem of discipline - forming stable knowledge and ability to apply them in the course of further education and careers.

UDC: 616-07:616-091.8


Obesity as one of the major problems of our time in different fields, solutions
Pyrogov Memorial National Medical University, Vinnytsia (56 Pyrogova street, Vinnytsia city, 21018, Ukraine)

Summary. Currently, lifestyle and nutrition of people and there are some systemic diseases lead to excessive weight gain. In turn, obesity, along with the aesthetic appearance of a violation contributes to the development of hypertension and other
diseases of the cardiovascular system, dysfunction of the gastrointestinal tract, musculoskeletal, endocrine glands (Cushing's disease, hypothyroidism, hypogonadism, insuloma in 98 % of cases the cause obesity). Excess weight in women of reproductive age may be a cause of infertility. Tackling obesity is one of the major problems of modern medicine. The article presents its main etiologic factors and mechanisms of treatments for excess weight.

**Key words:** obesity, obesity, lipolysis, lipogenesis, hypertrophy, diet, calorie intake, energy balance.

**UDC:** 612.0: 613.953 (477.44)

**Osadchuk N.I.**

**Investigation health status of schoolchildren and peculiarities its connection with physical development**

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**Summary.** The paper presents the study of health states of children and adolescents, as well as further in-depth study of the whole set of criteria, which includes sick rates physical fitness and ability to work, the level of functioning of the major body systems and the degree of resistance of the organism with respect to adverse factors that have a direct connection with the performance of physical development.

**Key words:** health, physical development, children, sick rate.

**Introduction**

Analysis of the current scientific literature shows that over the past ten years, the incidence of school age children increased by 26.8%. In the first class 30% of children have chronic diseases, in the fifth grade - 50%, in the ninth - 64%. The serious cause of health problems by children are all-increasing training load inherent to modern educational institutions.

**Materials and methods**
To accomplish this task, the data on the estimation of health status and characteristics of the morphofunctional state of the organism was carried out by studying the results of questioning of girls and boys of different ages, obtained on the basis of the use of specially developed for this purpose profiles.

**Results**

In the structure of the most common chronic disease among 12-year-olds were diseases of the musculoskeletal system and connective tissue, namely flat and incorrect posture, in the second place were eye disease and adnexa, which are dominated by a spasm of accommodation and astigmatism, in the third place by in girls were diseases of the circulatory system through functional systolic murmur and vegetative-vascular dystonia, by boys - endocrine disease, eating disorders, and metabolic disorders due to non-toxic diffuse goiter, testicular hypoplasia and delayed physical development. In the age category of 14 years girls illness patterns remained similar to the previous whole, by boys the second place was occupied by endocrine disease, eating disorders, and metabolic disorders due to pubertal delay genikomastii and somatic sexual development, the third place was taken by digestive diseases due to functional disorders of the stomach and dyskinesia of the bilious excretory pathways. However, the 17-year-old boys and girls, regardless of sex differences in the first place have diseases of the musculoskeletal system and connective tissue, primarily due to flat feet, scoliosis and scoliotic posture, remained in the second place pathology of the circulatory system through neuro dystonia in the third place - eye disease and adnexa by myopia and spasm of accommodation.

**Conclusions**

1. In the process of estimating the state of health of schoolchildren found out that with the age, the proportion of disease, the hallmark of which is a chronic course of pathological processes, gradually increased. And in their structure there were the most common diseases of the musculoskeletal system, namely impaired posture and flat feet, as well as diseases of the nervous system. However, in the structure of morbidity with temporary disability during the study period had a significant
prevalence respiratory diseases, mainly due to acute respiratory viral infections and influenza, a disease of the digestive system, diseases of the skin and subcutaneous fat.  
2. The most significant relationship with the characteristics of the level of health and physical development of pupils had indicators on the level of training adaptation, the number of cases with a temporary disability, availability and frequency of exacerbations of chronic pathology registration, character traits in school and the level of neuro-emotional stress in the course of daily training activities, the characteristics of family relationships, the duration of nocturnal sleep, features being at the end of the school day and the school week, the spread in the student's environment such harmful habits like smoking. 
The obtained results are the basis for the study of the health status of young people in these secular periods for use in preventive, educational activities of teachers, doctors and psychologists.

UDC: 616.895.8:612.017

Mrug V.M., Mrug O.F.

Immunological aspects of schizophrenia

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Summary. The article argues multyfactoriality of schizophrenia, the importance of improving and optimization of its diagnostics and treatment. The concept of biological origin of schizophrenia is given, methods of its researching on biological, psychological and social levels are reviewed.

Key words: psychoneuroimmunology, schizophrenia.

Introduction

Schizophrenia is suggested to be a group of polyetiological mental disorders that are characterized by chronicity and the presence of positive, negative and cognitive
symptoms, combined together under some form of the disease. Even today it is hard
to say clearly whether schizophrenia is a single disease or a group of mental disorders
because the symptoms of the disease are polymorphic, the course of the disease notes
a wide variety of displays and the end of it is often unpredictable. Basic, additional
symptoms and diagnostic criteria change their significance while remaining quite
subjective. Overdiagnosis of schizophrenia is commonly widespread.

**Basic part**
The search for new treatment options for schizophrenia, improving methods of
pharmacological and psychotherapy, the development of adequate and differentiated
approaches to rehabilitation patients to humanize the relationship to them is the focus
of all those who wish truly help a person suffering from schizophrenia. Infectious and
autoimmune etiology are distinguished among the biological origin of the concept of
schizophrenia. Epidemiological studies confirm the role of viral infections in the
development of schizophrenia. Perinatal influenza infection leads to limit the release
reelyn in neurons that regulates cortical-hypocampal neuronal migration, which
causes weakness of the brain structures that are affected in schizophrenia primarily.
The viral hypothesis of schizophrenia genesis allow both a direct effect of neurotropic
viruses to neurons, which leads to the destruction of these cells and indirectly.
Displacement of specific immunity, which is observed in many viral infections, can
manifest in schizophrenia. Many experts point out the imbalance of T-lymphocytes
subpopulation composition with changing between the major subpopulations of T-
cells, especially in the cerebrospinal fluid. This may indicate a significant inhibition
of both quantitative and functional parameters of T-cell level immune response in
schizophrenia. Schizophrenia is characterized by activation of humoral immune
system, manifested of increasing content of immunoglobulin G. A number of
immunological parameters of connection with the peculiarities of clinical symptoms
and the degree of the pathological process are discovered. Thus, normalization of
immunological number of indicators as a result of pharmacotherapy of schizophrenia
may be an indicator of patient response to therapy by antipsychotics and may serve as
a marker of efficacy.
Conclusions
1. Psychoneuroimmunology learns the interaction the systems of cellular and humoral immunity in schizophrenia.
2. Technological advances of recent decades allows the study of schizophrenia at different levels to have a possibility to optimize the results of diagnosis of schizophrenia and achieve better efficiency of treatment.

UDC: 615.33:579:502.175

Andreeva I.A., Serdjuk R.A., Savitskaya I.V., Yakovleva J.M.

CONTROLLED APPLICATION OF ANTIBIOTICS AS RESULT OF MICROBIOLOGICAL MONITORING USING ANALYTICAL PROGRAM WHONET

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Summary. In modern conditions the problem of drug resistance of microorganisms has become global. To solve this fundamental problem in Dnipropetrovsk Children's Clinical Hospital № 3 by Rudnev the computer software WHONET recommended by WHO for the dynamic monitoring of the structure and the level of resistance of microorganisms to antibiotics has been introduced. Microbiological monitoring of selected bacterial strains based on an estimation of sensitivity/resistance to antibiotics has allowed using obtained information for the controlled application of antibiotics.

Key words: antibiotic resistance, microbial monitoring, WHONET.

Introduction
At the present stage of progress of a medical science the international scientific and professional medical communities and organizations have been recommend the practice of development and implementation of principles of evidence-based
medicine in system of medical aiding to the population. Particularly, it touches upon using antibacterial preparations. For supervision of use of antimicrobial agents in public health services practice the system of the infectious control has been introduced. The microbiological monitoring is part of the infectious control and allows supervising circulation of microorganisms and their antimicrobial resistance by dynamic observation over structure and level of resistance to antibiotics that are used in the given particular hospital.

Purpose of this research is developing a rational strategy and tactics of use of antimicrobial agents taking into account bases and principles of evidence-based medicine.

**Materials and methods**

For the dynamic observation of the structure and the level of resistance of microorganisms to antimicrobial agents the computer software WHONET recommended by WHO has been used. With using WHONET in hospital the computer database has been created. In this database the information about each patient, hospital department, samples under test and the date of its excretion, the data about the detected microorganism and its sensitivity/resistance to antimicrobial agents have been stored.

**Results**

Frequency of isolation of the basic microorganisms from biological material (excrements, urine, blood, sputum, examinations of catheters, etc.) of patients of Dnipropetrovsk Clinical Children Hospital № 3 obtained with using computer software WHONET.

The analysis of the state of antimicrobial sensitivity of clinically significant microorganisms (S. aureus, E. coli, K. pneumonia, P. aeruginosa) has allowed establishing that the most frequent E. coli (1 % - 20 %), K. pneumoniae (4 % - 6 %), Candida albicans (2 % - 5 %), P. aeruginosa (1 % - 3 %), S. aureus (1 % - 2 %) were isolated from the biological material. Isolation of other microorganisms was irregular and its frequency fluctuated from 0 % to 10 %.

In structure of the studied microorganisms 65.8 % were gram-positive bacteria,
anaerobes and fungi, remaining 34,2 % were Gram-negative bacteria. The greatest number of Gram-negative microorganisms equal to 36,4 % was isolated from urine, slightly less was isolated from pus (21,7 %) and nonpurulent traumatic exudate (10,9 %). Results of examination of sensitivity of microorganisms suggest that investigated bacterial strains were resistant to 62,9 % of the tested antibiotics and nonfermenting gram-negative rods were resistant to 74,3 % of the tested antibiotics.

Relatively low levels of resistance of microorganisms of both the groups have been observed for imipenem, ceftazidime, ciprofloxacin. In addition, examined microorganisms also had little sensitivity to ceftriaxone, cefoxitin, gentamicin in comparison with nonfermenting gram-negative rods that were sensitive only to polymyxin.

Conclusions
Thus, in modern conditions the controlled use of preparations for antibacterial therapy in hospital is possible only on the basis of the data of microbiological monitoring taking into account the main mechanisms of resistance of infectious agent. Development of rational strategy and tactics of use of antibacterial preparations on the basis of microbiological researches should become the basis not only for definition of a policy of application of the antibiotics, but also for the further construction of formulary system of medical support. Just the formulary system as a complex of organizational, financial, medical and technical actions should be directed on creation of conditions for the guaranteed support by the medical preparations of citizens who have legal rights to receive highly qualified medical care at the expense of budget funds.

UDC: 616-036.22:579.61:502.175:616.9-084

Sladkova L.M., Semenyak M.V.
Microbiological monitoring as part of the infections control system
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Summary. The quality of infection control in the hospital is a reflection of overall quality of the medical care in the facility. The quality infection control programs can reduce the incidence of nozocomial infections, the hospital stay and economic hospitalization costs. We carried out the microbiological monitoring of the environment and the maternity ward studied microbial flora of medical staff, new mothers, newborns in N. We described a landscape of microflora of newborns.

Key words: infectious control, microbiological monitoring, nozocomial infection, bacteriological tests

Introduction
The quality of infection control in the hospital is a reflection of overall quality of the medical care in the facility. Quality infection control programs can reduce the incidence of nozocomial infections, the hospital stay and economic hospitalization costs. We carried out the microbiological monitoring of the environment of the maternity ward and studied were the microbial flora of medical staff, new mothers, newborns in N. We described a landscape of microflora of newborns.

For frequency reduction the nozokomial infections it is necessary, first of all, to reveal, activators which circulate in a hospital, to define their sensitivity to antimicrobial preparations and ways of distribution of an infection.

Materials and methods
We developed and introduced important documents in which was possible intrahospital infection: the program of infections control, the list of significant epidemic objects of environment for bacteriological control, the scope and the nomenclature of microbiological studies in departments of maternity hospital, the algorithm of preservation and material delivery for bacteriological studies. Besides, it were the developed actions algorithm of actions the maternity hospital staff in case of intrahospital infection identification.

Results
In 2011 year in newborns department were born 1321 children, risk group -121
children (9,2%). In 2012-1425 children, risk group - 179 children (12,6 %). The bacteriological examination of children, as well as the maternity ward, showed domination of staphylococci group (2011 – 69,9 % 2012 – 76,3 %). On positive results was aureus recorded: from the nasopharynx – 90 %, on flush with the umbilical stump – 71 %, on feces – 50 % , on the elements rash – 100 %. The next type of microflora in frequency allocation -is Candida: 2011 - 19 %, 2012 – 17,9 % (flush with the umbilical stump – 22,9%, on feces – 35 % ). Klebsiella was isolated in six cases in 2012. In the 2nd half of 2011, in 4 children were treated in the ICU Pseudomonas aeruginosa was allocated, and 1 child in 2012. There were instances when the results of bacteriological examination of children suggest nosocomial colonization children. The was 6 children in 2011, 2 children-in 2012 in wich was possible intrahospital infection.Clinical manifestations of septic infection were observed only in 1 child from these 8.

**Conclusion**

The functioning of microbiological monitoring system in N. for the 2011-2012 showed that it was effective and was a component of infections control system and allowed to make operated and programmed an epidemic situation in maternity hospital.

**UDC: 618.14 - 006.36 – 07 - 08**

**Mayevsky A.Y.**

**Uterine leiomyoma as an actual problem of medicine, etiological factors, morphological criteria for the diagnosis, method of treatment**

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**Summary.** The article presents the main etiological factors and morphogenetic criteria for diagnosis of uterine fibroids and modern views on the treatment of this disease.

**Key words:** leiomyoma, fleshy polyp, proliferation of myometrium.