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SINGLE HOSPITAL STUDY FOR DETERMINE PREVALENCE OF ASYMPTOMATIC BACTERIURIA IN PREGNANT WOMEN IN TSMU OB/GYN DEPARTMENT DURING 2018

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ABSTRACT

Introduction: Asymptomatic bacteriuria (ASB) is a common condition that occurring during pregnancy and while untreated can be associated with adverse maternal and perinatal outcomes. The aim of this study was to identify the prevalence of ASB in pregnant women referred to antenatal care unit in TSMU department of Ob/Gyn in 2018.
Method: In a prospective study 175 women without urinary tract infection symptoms referred to antenatal care unit in the first trimester of pregnancy, in TSMU The First University clinic during 2018. In all cases midstream urine samples were taken and cultured on bacteriological media in order to isolate bacteria along with antibiogram. Identification of microbes were done with rapid identification system (API20E, API Staph, API Strep20, bioMerieux). Also rapid tests defining oxidase and catalase and simultiously dip slides(Thermo Fisher) were also used.
Results: The prevalence of asymptomatic bacteriuria in that 175 pregnant woman was 13%.(with isolation of the same organism in quantitative counts of $\geq 10^5$ cfu/mL in urine culture). There were negative culture in 152 pregnant woman (87%). The predominant organisms which were isolated were Escherichia coli*,* followed by Enterococcus faecalis*,* Staphylococcus saprophyticus and Klebsiella pneumoniae.
Conclusion: Early detection of infection by routine screening of antenatal women during first trimesters   and treatment of avery positive results depend on susceptibility test results are essential to protect the health of mother and the fetus in early pregnancy.
Keywords: Urinary tract infection, Escherichia coli, pregnancy.

აბსტრაქტი

შესავალი: ასიმპტომური ბაქტერიურია ხშირად გვხვდება ორსულებში და საჭიროებს მკურნალობას. ჩვენი კვლევის მიზანი იყო შეგვეფასებინა ასიმპტომური ბაქტერიურიის პრევალირება იმ ორსულებში, რომლებიც იმყოფებოდნენ თსსუ მეანობა/გინეკოლოგიის დეპარტამენტის ანტენატალური მეთვალყურეობის ქვეშ 2018 წლის მანძილზე.

მასალა და მეთოდები: ჩვენ შევისწავლეთ 175 ორსული. ყველა მათგანს ჩაუტარდა შარდის ბაქტერიოლოგიური გამოკვლევა , რომელიც მოიცავს შარდის შუა ულუფაში სუფთა კულტურის გამოყოფას და ანტიბიოტიკომგრძნობელობის განსაზღვრას. გამოყოფილი მიკრობების იდენტიფიკაცია მოხდა ანალიტიკური პროფილის ინდექსის(API) გამოყენებით , ხოლო ანტიმიკრობული მგრძნობელობა განისაზღვრა კირბი-ბაუერის მეთოდით.

შედეგები: 175 ორსულიდან 13%-ში იყო საშარდე გზების ინფექცია, მოთესვიანობით 10^5 cfu/ml და მეტი. 152 ორსულის შარდში მიკრობთა ზრდა არ აღინიშნა. Escherichia coli იყო ყველაზე ხშირი დამომწვევი. ასევე ამოითესა Enterococcus faecalis, Staphylococcus saprophyticus, Klebsiella pneumoniae.

დასკვნა: ასიმპტომური ბაქტერიურიის ადრეული დეტექცია ორსულობის პირველ ტრიმესტრში ანტენატალური სკრინინგის საშუალებით და მისი მკურნალობა ლოკალურ ანტიმიკრობულ მგრძნობელობაზე დაყრდნობით, არის მნიშვნელოვანი დედის და ნაყოფის ჯანმრთელობისთვის.

საკვანძო სიტყვები: შარდის სისტემის ინფექციები, Escherichia coli, ორსულები.

ABSTRACT

Introduction: Asymptomatic bacteriuria (ASB) is a   common condition that occurring during pregnancy and while untreated can be associated with adverse maternal and perinatal outcomes. The aim of this study was to identify the prevalence of ASB in pregnant women referred to antenatal care unit in TSMU department of Ob/Gyn in 2018.

Method: In a prospective study 175 women without urinary tract infection symptoms referred to antenatal care unit in the first trimester of pregnancy, in TSMU The First University clinic during 2018. In all cases midstream urine samples were taken and cultured on bacteriological media in order to isolate bacteria along with antibiogram. Identification of microbes were done with rapid identification system (API20E, API Staph, API Strep20, bioMerieux). Also rapid tests defining oxidase and catalase and simultiously dip slides(Thermo Fisher) were also used.

Results: The prevalence of asymptomatic bacteriuria in that 175 pregnant woman was 13%.(with isolation of the same organism in quantitative counts of ≥10^5 cfu/mL in urine culture). There were negative culture in 152 pregnant woman (87%). The predominant organisms which were isolated were Escherichia coli, followed by Enterococcus faecalis, Staphylococcus saprophyticus and Klebsiella pneumoniae.

Conclusion: Early detection of infection by routine screening of antenatal women during first trimesters   and treatment of avery positive results depend on susceptibility test results are essential to protect the health of mother and the fetus in early pregnancy.

Keywords: Urinary tract infection, Escherichia coli, pregnancy.

INTRODUCTION

Asymptomatic bacteriuria was first identified in the mid-1950s, when Kass and others described the use of the quantitative urine culture to differentiate true bacteriuria from contamination of voided urine specimens. In an initial study [2], paired specimens collected by in and out catheter from 67 asymptomatic, untreated, women identified one group where both specimens had bacteriuria with quantitative counts >10^3cfu/mL and another with lower counts. From 30% to 40% of the women with repeated high quantitative counts also had pyuria (>5 white blood cells/high power field). Pyuria was not present in specimens from women with lower quantitative counts.   Asymptomatic bacteriuria is a microbial diagnosis which is based on the isolation of a specified quantitative count of bacteria in a specimen of urine which is properly collected from a pregnant woman who does not have any signs or symptoms. Thus, urine culture is the gold standard screening technique for ASB which occurs during pregnancy(6,7).

Asymptomatic bacteriuria is associated with pyelonephritis, preterm labor and low birth weight infants. The physiological and anatomical changes in pregnancy facilitate urinary tract infection (UTI) during pregnancy. Several b tests are available for diagnosis of asymptomatic bacteriuria. The urine culture is a gold standard diagnostic test for asymptomatic bacteriuria but it is expensive and time-consuming. Urinary tract infections (UTIs) are still one of the most common bacterial infections in pregnant and non-pregnant women. It is estimated that about 10-20% of all women suffer from a UTI at some point in life. The presence of UTI is defined as the existence of urinary symptoms such as frequency of urination and dysuria with or without bacteriuria or pyuria. The prevalence of bacteriuria in females varies from less than 1% in infants to 10% and more in older women.Asymptomatic bacteriuria is defined as isolation of a specified quantitative count of bacteria in an appropriately collected urine specimen from an individual without symptoms or signs of urinary tract infection. Evidence based guidelines recommend screening and treatment of asymptomatic bacteriuria only for pregnant women.   The quantitative thresholds specimens   are different for voided clean catch specimens and catheterized specimens.The presence of pyuria (≥10 leukocytes/mm^3 of uncentrifuged urine) is not sufficient for diagnosis of bacteriuria(1).

Very low quality evidence from 3 cohort studies (n=5659) suggested that screening modestly reduces the incidence of pyelonephritis by 13 fewer women per 1,000 screened (confidence interval ranged from 8-16 fewer) – The number needed to screen to prevent one case of pyelonephritis was 77 . Data for other screening outcomes: perinatal mortality, preterm deliveries, fetal anomalies, spontaneous abortions, were also of very low quality. There were no statistically or clinically significant differences.(3)

Asymptomatic bacteriuria in women is defined by the Infectious Diseases Society of America (IDSA) guidelines as two consecutive clean-catch voided urine specimens with isolation of the same organism in quantitative counts of ≥10^5 cfu/ml(4).

The prevalence of ASB was found to be 2-11% in pregnant women(8,9).During pregnancy, the prevalence of bacteriuria does not change but there are some changes in the pathogenesis that increase the rate of pyelonephritis. Asymptomatic

bacteriuria rarely resolves spontaneously during this time. For non-pregnant women, short therapy strategies are recommended.(5)

MATERIAL AND METHODS

In a prospective study 175 women without urinary symptoms referred to antenatal care unit in the first trimester of pregnancy, in TSMU The First University clinic during 2018. In all cases midstream urine samples were taken and cultured on following bacteriological media:5% sheep blood agar, macconkey agar, sabouaud agar and uri Select 4 agar(Bio Rad laboratores). Isolation of poor culture,Gram stain, identification of microbes with rapid identification system (API20E, API Staph, API Strep20, bioMerieux) was performed.Also rapid tests defining oxidase and catalase and simultiously dip slides(Thermo Fisher) were also used. After 24-48 hour incubation aerobically at $37^{o}C$ the presence of at least 10^{5} colonyforming units per mL (CFU/mL) of urine with a single uropathogen was considered a positive test result and susceptibility testing by Kirby Bauer disk diffusion method was performed to guide treatment. All isolated strains were tested against following antibiotics:ampicilline+sulbactam, amoxicilline+clavulanic acid, ceftriaxone, cefuroxime, cefotaxime.Susceptibility/Resistance was reported according to the European Committee on Antimicrobial Susceptibility Testing guidelines.(EUCAST 2018).

RESULTS: The prevalence in that 175 pregnant woman was 13%,in specimens,(with isolation of the same organism in quantitative counts of ≥10^{5} cfu/mL in urine culture). There were negative culture in 152 pregnant woman (87%). In 15cases (65,2%) out of 23 positive culture, was detected Escherichia coli , in 5 cases (21,7%) Enterococcus faecalis ,in 2cases (8,7%)-Staphylococus saprophyticus , in 1cases (4,3%) Klebsiella pneumonie were reported. Also we eveluated antibiotic suscebtibility testing results among that 23 woman with ASB from 175 pregnant women . Sensitivity to cephalosporines was 95%.Hundrent persent sensitivity was found for the ampicilline+sulbactam and amoxicilline+clavulanic acid .

DISCUSSION: The overall prevalence of ASB was found to be 2-11% in pregnant women(8,9). Our data 13 % is close to the studies: ASB screening in pregnant women in Turkey has suggested incidence of 8.5%, and 10.7% in Nigeria, 12.3% in Brazil, 13.2% in India and 10.4% in North-west Ethiopia. These reports demonstrate that the incidence of ASB in pregnancy may vary to a large extent in different countries and geographical regions.

CONCLUSION: Asymptomatic bacteriuria is not uncommon among antenatal patients in our studied(13%). Asymptomatic bacteriuria in pregnancy can be identified by simple and combined rapid screening methods and urine culture along with antibiogram. Every positive case should be treated with appropriate antibiotic therapy depend on local susceptibility test results, to prevent any obstetric complication which is associated with pregnancy. So that early treatment can be started thereby to prevent maternal and fetal complications.
Keywords: Urinary tract infection, Escherichia coli, pregnancy.

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THE EMPIRICAL RESEARCH OF THE IMAGE "I" OF TEENAGERS WITH ADDICTION FROM SMOKING

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ABSTRACT

This article presents the results of a study of the image of "I" in adolescents with dependence on smoking, for example, dependence on cigarettes and vape. The characteristics of the real and ideal image of the image of "I" are taken into account. The results of smoking dependence among adolescents are compared with vaping and cigarette smoking. Provided data from modern studies on the statistics of dependencies on smoking and the prevalence of this phenomenon in the adolescent environment are cleared. The differences in indicators of real and ideal images of "I-concept" were found.

Keywords: adolescents, smoking, addiction.

OBJECTIVE: To identify the features of the image of "I" in adolescents with dependence on smoking cigarettes and vaping.

METHODS: This study was conducted empirically. As a determination of the level of dependence on smoking in adolescents of vape and cigarettes was used Fagerström test, as well as the definition of the features of the image of "I" was carried out by the method of "Semantic differential D. Fedels."

RESULTS: It seems to us appropriate to study the features of the formation of the image of "I" of adolescents with smoking addiction, since the components of the image of "I" affect the relationship of a person with others and his / her behavior in general. First, both self-consciousness and the image of the "I" affect the personality as a whole; secondly, adequate self-esteem and a properly formed image of the "I" determine socially approved behavior in society; thirdly, the image of the "I" and self-consciousness are integrative characteristics of the personality that are most amenable to change in adolescence [2].

One of the urgent problems of our time is smoking, which is the cause of many serious diseases. Every year in the world about 6.4 million people die from diseases associated with tobacco smoking. The negative impact of tobacco smoke on non-smokers, especially children, increases the risk of premature death from cancer, cardiovascular, respiratory and other diseases. According to some data, the prevalence of tobacco smoking in Russia is 11.8% among girls and 22.4% among boys [6, 7]. Therefore, the need to study the psychological characteristics of adolescents with smoking addiction is an extremely important element in the creation of effective corrective measures aimed at reducing dependence on smoking among young people [1, 3].

The following methods, the Fagerström test and the "Semantic differential of D. Fedels" were used to study the dependence on smoking and the image of "I" of adolescents with dependence on smoking [4, 5].

According to the study of smoking dependence among adolescents who smoke cigarettes or vape, it was found that adolescents who smoke cigarettes have a higher level of dependence on 2.4 points, while the level of dependence on vape smoker of adolescents is 1.6, which corresponds to a low level of dependence on smoking.

According to the method of "Semantic differential" it was found that, dependent on cigarette Smoking subjects have pronounced differences in performance not only in comparison with the control group, but also in the ratio of real and ideal ideas about themselves. Based on this, we can say the following: adolescents with dependence on cigarette smoking, have a low level of real emotional and evaluative self-image, have a high level of dissatisfaction. On the other hand, the ideal feature of the valence factor is overestimated more than in other groups. This suggests that such adolescents may not have a high level of self-esteem and high expectations from themselves. They may have attitudes about the ideal self-image, which is difficult to achieve. Less satisfaction of cigarette-smoking adolescents in their social status is studied. Significant differences between the real and ideal representation in this category also indicate that this group of adolescents may have a relatively higher level of dissatisfaction, low self-esteem, emotional instability, increased irritability, aggressiveness, etc. as for adolescents dependent on vaping, the level of differences between the concepts of the real and ideal "I", for each category, are more adequate and close to each other, although there are still some differences in comparison with the control sample.

CONCLUSIONS: According to the data obtained by the semantic differential for Feldes, first of all, comparative differences were found between the real representation of the "I" and the ideal, in the subjects from the group of adolescents with dependence on cigarette smoking. With respect to the control sample and the experimental group

consisting of adolescents with dependence on vaping, the differences in these categories are much smaller. It should be noted that the level of positive self-attitude was the most in the control group because of what we conclude that the dependence on smoking in adolescents is associated with an inadequate way of "I".

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CORRELATION BETWEEN PERIODONTAL INFLAMMATORY DISEASES AND SOMATIC DISORDERS OF THE GEORGIAN STUDENT POPULATION.

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ABSTRACT

Introduction: Periodontal tissue inflammatory disease associated with the development of exogenous and endogenous factors.

Purpose: To determine the correlation between periodontal inflammatory diseases and prognostic characteristics of somatic statement of student population.

Materials and methods: The study was performed by an anonymous questionnaire and clinical examination of 400 students aged 18-35 years (mean age 20.94 + 1.98). It was calculated relative chance of the disease for each factor - OR (odds ratio). The analysis was performed using statistical software package SPSS 22.
Categorical data were analyzed with F criteria. Correlations between different parameters were checked by Spearmans's rank correlation tests. Differences were considered to be statistically significant at $p < 0.05$. It was calculated relative chance of the disease for each factor - OR (odds ratio) and 95%CI. Statistical support was provided by means of the program package SPSS 22.

Results: Study of the distribution and structure Periodontal Disease of the student population have shown that periodontal inflammation was found in 27.3% of the students surveyed - 25.7% of gingivitis, 4.7% of periodontitis (both 3.1%), 31% of students with gingivitis was observed in an acute, 48 chronic, acute 4%, 17% remission. 43% - Local 47% generalized.
Periodontitis students with between 42% light, 58% of medium gravity; 25% of acute, chronic 42%, 33% acute; 67% local and 33% generalized periodontitis.
Periodontal damage to the first factor to be considered at the present time - dental plaque bacterial flora.
The relative chance of inflammatory periodontal disease increases the unsatisfactory Allergy OR=1.76(95%CI=1.07-2.88); Pockets of focal infection OR=11.06(95% CI=2.26-31.31), pathology of gastro - intestinal (OR=2.89 (95%CI=1.39-6.03); peripheral vascular disease OR=15.52(95%CI=1.79-134.50) cardiovascular disease OR=11.06(95%CI=2.26-54.15);
By using correlation analysis we defined dependence between of gingivitis and periodontitis and somatic disease
Gingivitis reveals reliable significant positive correlation with the following factors: stress, allergy, kidney disease, pathology of gastro – intestinal, cardiovascular disease, hipovitaminosis peripherial vascular disease, niduses of focal infection
Periodontitis reveals reliable significant positive correlation bone and joint congenital anomalies, connective tissue dysplasia, diabetes mellitus, stress, pathology of gastro – intestinal, cardiovascular disease, peripherial vascular disease, niduses of focal infection.

Conclusions: Inflammatory periodontal diseases have demonstrated a statistically significant associations with somatic disorders

РЕЗЮМЕ

Введение: воспалительные заболевания тканей пародонта, связанные с развитием экзогенных и эндогенных факторов.

Цель: определить корреляцию между воспалительными заболеваниями пародонта и прогностическими характеристиками соматического состояния студенческой популяции.

Материалы и методы: Исследование было выполнено путем анонимного анкетирования и клинического обследования 400 студентов в возрасте 18-35 лет (средний возраст 20,94 + 1,98). Была рассчитана относительная вероятность заболевания для каждого фактора - ИЛИ (отношение шансов). Анализ проводился с использованием статистического программного пакета SPSS 22.

Категориальные данные были проанализированы с F критериями. Корреляции между различными параметрами были проверены с помощью ранговых корреляционных тестов Спирманса. Различия считались статистически значимыми при p <0,05. Была рассчитана относительная вероятность заболевания для каждого фактора - ИЛИ (отношение шансов) и 95% ДИ. Статистическая поддержка была оказана с помощью программного пакета SPSS 22.

Результаты: Изучение распределения и структуры заболеваний пародонта среди студенческого населения показало, что воспаление пародонта было обнаружено у 27,3% опрошенных студентов - у 25,7% гингивит, у 4,7% периодонтит (у обоих 3,1%), у 31% студентов с гингивитом в остром, 48 хронических, острых 4%, 17% ремиссии. 43% - местные 47% генерализованы.

Пародонтит у студентов с 42% света, 58% средней плотности; 25% острых, хронических 42%, 33% острых; 67% местный и 33% генерализованный пародонтит.

Повреждение пародонта первым фактором, подлежащим рассмотрению в настоящее время, - бактериальная флора зубного налета.

Относительную вероятность воспалительного заболевания пародонта увеличивает аллергия OR = 1,76 (95% ДИ = 1,07-2,88); Очаги инфекции OR = 11,06 (95% ДИ = 2,26-31,31), патология желудочно-кишечного тракта (OR = 2,89 (95% ДИ = 1,39-6,03); заболевание периферических сосудов OR = 15,52 (95% ДИ = 1,79-134,50)) сердечно-сосудистые заболевания OR = 11,06 (95% ДИ = 2,26-54,15);

Гингивит выявляет достоверную положительную корреляцию со следующими факторами: стресс, аллергия, заболевание почек, патология желудочно-кишечного тракта, сердечно-сосудистые заболевания, гиповитаминоз, заболевания периферических сосудов, очаги инфекции

Пародонтит выявляет достоверную положительную корреляцию со следующими факторами: аномалий кости и сустава, дисплазию соединительной ткани, сахарный диабет, стресс, патологию желудочно-кишечного тракта, сердечно-сосудистые заболевания, заболевания периферических сосудов, очаги инфекции.

Выводы: Воспалительные заболевания пародонта продемонстрировали статистически значимые ассоциации с соматическими расстройствами.

აბსტრაქტი

შესავალი: პაროდონტის ანთებითი დაავადებების განვითარება დაკავშირებულია ეგზოგენური და ენდოგენური ფაქტორების ზემოქმედებასთან.

მიზანი: პაროდონტის ანთებითი დაავადებების პროგნოზული მახასიათებლების დადგენა და კორელაციის განსაზღვრა სომატურ დაავადებებთან ქართველ სტუდენტთა პოპულაციაში.

მასალა და მეთოდები: ჩატარდა 18-35 წლის ასაკიდან (20.94 + 1.98 საშუალო ასაკის 400 სტუდენტის ანონიმური გამოკითხვა და კლინიკური გამოკვლევა). გამოთვალეთ დაავადების ფარდობითი შანსი თითოეული ფაქტორის მიხედვით. ანალიზი განხორციელდა სტატისტიკური პროგრამული პაკეტის SPSS 22 გამოყენებით.

კატეგორიული მონაცემები განალიზდა F კრიტერიუმით. კორელაცია სხვადასხვა პარამეტრებს შორის დადგინდა სპირმენის რანგული კორელაციური ანალიზის გამოყენებით. სტატისტიკური ანალიზი ჩატარდა SPSS 22 პროგრამების პაკეტის გამოყენებით.

შედეგები: სტუდენტთა შორის პერიორალური დაავადებების განაწილებისა და სტრუქტურის შესწავლა აჩვენა, რომ პაროდონტის ანთებითი დაავადებები აღმოაჩნდა გამოკვლეულ სტუდენტების 27.3%-ს - 25.7% გინგივიტი, 4.7% პაროდონტიტი (3.1%), პერიოტონური დაზიანების პირველი ფაქტორი, რომელიც ამჟამად განიხილება, არის ბაქტერიული ფლორა.

პაროდონტის ანთებითი დაავადებების ალბათობას ზრდის - ალერგია OR = 1.76 (95% CI = 1.07-2.88); ინფექცია - OR = 11.06 (95% CI = 2.26-31.31), კუჭ-ნაწლავის ტრაქტის პათოლოგია (OR = 2.89 (95% CI = 1.39-6.03); პერიფერიული სისხლძარღვთა დაავადება OR = 15.52 (95% CI = 1.79-134.50)) კარდიოვასკულური დაავადებები OR = 11.06 (95% CI = 2.26-54.15);

გინგივიტი გამოხატავს მნიშვნელოვან პოზიტიურ კორელაციას შემდეგ ფაქტორებთან: სტრესი, ალერგია, თირკმლის დაავადება, კუჭ-ნაწლავის ტრაქტის პათოლოგია, კარდიოვასკულური დაავადებები, ჰიპოვიტამინოზი, პერიფერიული სისხლძარღვების დაავადებები, ინფექციები.

პარიოდიტიტი ამჟდავნებს მნიშვნელოვან პოზიტიურ კორელაციას შემდეგ ფაქტორებთან: ძვალსახსროვანი სისტემის დაავადებები, შემაერთებელი ქსოვილის დისპლაზია, შაქრიანი დიაბეტი,

სტრესი, კუჭ-ნაწლავის ტრაქტის პათოლოგია, კარდიოვასკულური დაავადებები, პერიფერიული სისხლძარღვოვანი დაავადებები და ინფექციის ფისი.

დასკვნები: პაროდონტის ანთებითი დაავადებები ავლენენ სტატისტიკურად მნიშვნელოვან ასოციაციებს სომატურ დარღვევებთან.

INTRODUCTION

Periodontal tissue inflammatory disease associated with the development of exogenous and endogenous factors. There are a number of studies that discuss the periodontal condition of a somatic disease, cardiovascular and endocrine diseases remarkable Connection of Periodontal Disease, but the lack of a comprehensive survey, the share of these diseases has not been stated in periodontal disease manifestation.

Students present in biological, psychological, social adaptation and the formation process. The action of these factors creates the conditions for the possible development of a variety of diseases.

Evidence is reviewed on the potential roles of **somatic disease** associated with i**nflammatory** periodontal disease. Diabetes may increase the risk of periodontitis, and it has been proposed that chronic periodontal disease may influence the natural course of diabetes[4]. oral health and, especially gingival inflammation is associated with CVD[5]. Bat According to some data **In the present study, periodontitis did not seem to have a statistically significant relationship with IHD[6].**

In spite of the literature, where is data pathogenic mechanisms on periodontal diseases, today has not been adequately studied genetic-population characteristics in Georgia, of the student population, which leads to Actuality.

Purpose: To determine the correlation between periodontal inflammatory diseases and prognostic characteristics of somatic statement of student population.

Materials and methods: The study was performed by an anonymous questionnaire and clinical examination of 400 students aged 18-35 years (mean age 20.94 + 1.98). It was calculated relative chance of the disease for each factor - OR (odds ratio). The analysis was performed using statistical software package SPSS 22.

Inclusion criteria: students of the University of Tbilisi, informed consent of the parents for inclusion in a study.

Exclusion criteria: metabolic disorders, systemic diseases, autoimmune diseases, pregnancy.

We studied the patients' data and characteristics according to the following questionnaire form. Every factor may have the definite importance (1-yes, 0-not). All variables were also compared between students with and without periodontal disease.

Categorical data were analyzed with F criteria. Correlations between different parameters were checked by Spearmans's rank correlation tests. Differences were considered to be statistically significant at $p < 0.05$. It was calculated relative chance of the disease for each factor - OR (odds ratio) and 95%CI. Statistical support was provided by means of the program package SPSS 22.

RESULTS

Study of the distribution and structure Periodontal Disease of the student population have shown that periodontal inflammation was found in 27.3% of the students surveyed - 25.7% of gingivitis, 4.7% of periodontitis (both 3.1%), 31% of students with gingivitis was observed in an acute, 48 chronic, acute 4%, 17% remission. 43% - Local 47% generalized.

Periodontitis students with between 42% light, 58% of medium gravity; 25% of acute, chronic 42%, 33% acute; 67% local and 33% generalized periodontitis.

Periodontal damage to the first factor to be considered at the present time - dental plaque bacterial flora.

Among the students who have revealed inflammatory periodontal disease have a high incidence pathology of the gastrointestinal tract, anemia, cardiovascular disease, focal foci of infection, emotional stress.

The relative chance of inflammatory periodontal disease increases the unsatisfactory Allergy OR=1.76(95%CI=1.07-2.88); Pockets of focal infection OR=11.06(95% CI=2.26-31.31), pathology of gastro - intestinal (OR=2.89 (95%CI=1.39-6.03); peripheral vascular disease OR=15.52(95%CI=1.79-134.50) cardiovascular disease OR=11.06(95%CI=2.26-54.15);

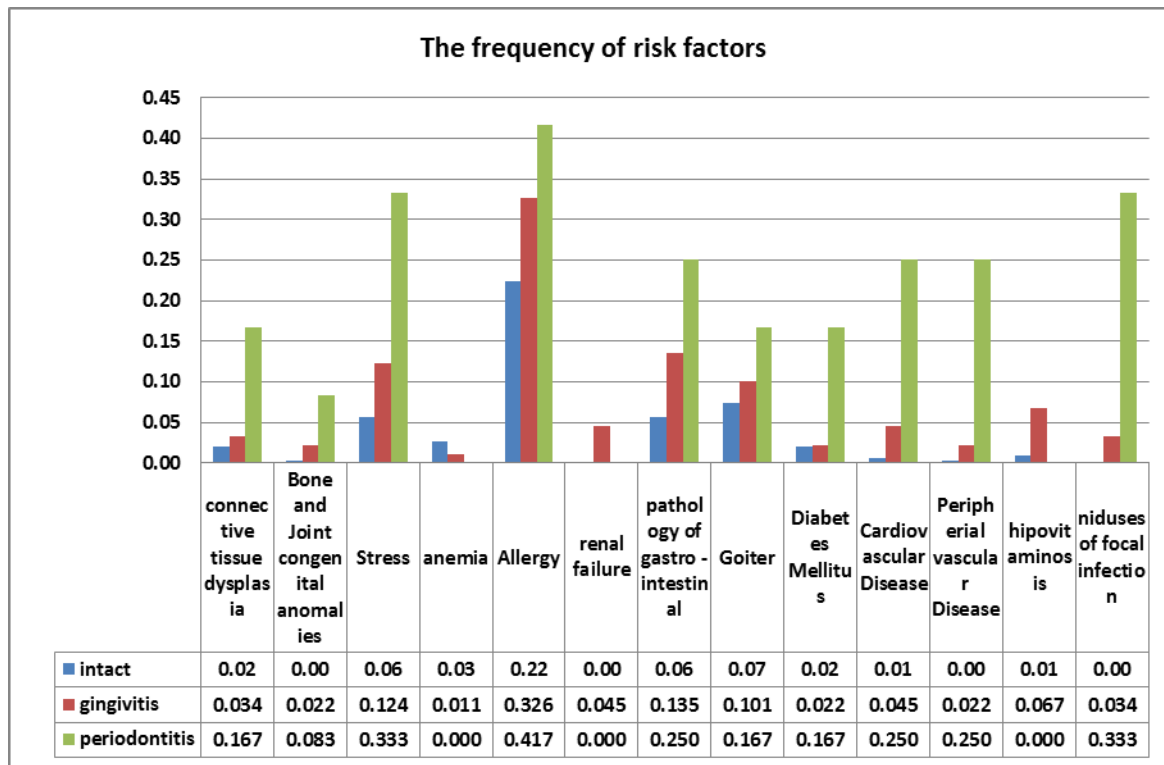The frequency of risk factors is presented in the 1 diagram

	connective tissue dysplasia	Bone and Joint congenital anomalies	Stress	anemia	Allergy	renal failure	pathology of gastro - intestinal	Goiter	Diabetes Mellitus	Cardiovascular Disease	Peripherial vascular Disease	hipovitaminosis	niduses of focal infection
intact	0.02	0.00	0.06	0.03	0.22	0.00	0.06	0.07	0.02	0.01	0.00	0.01	0.00
gingivitis	0.034	0.022	0.124	0.011	0.326	0.045	0.135	0.101	0.022	0.045	0.022	0.067	0.034
periodontitis	0.167	0.083	0.333	0.000	0.417	0.000	0.250	0.167	0.167	0.250	0.250	0.000	0.333

Diagram 1
By using correlation analysis we defined dependence **between** of gingivitis and periodontitis and somatic disease

Table 1

Correlate **between** of gingivitis and periodontitis and somatic disease

		gingivitis	periodontitis
connective tissue dysplasia	r	0.048	0.150[**]
	p	0.343	0.003
Bone and Joint congenital anomalies	r	0.060	0.130[**]
	p	0.228	0.009
Stress	r	0.156[**]	0.164[**]
	p	0.002	0.001
anemia	r	-0.047	-0.027

	p	0.354	0.595
Allergy	r	0.101*	0.066
	p	0.044	0.185
kidney disease	r	0.178**	-0.018
	p	0.000	0.725
pathology of gastro - intestinal	r	0.113*	0.110*
	p	0.024	0.028
Goiter	r	0.042	0.054
	p	0.398	0.283
Diabetes Mellitus	r	0.059	0.160**
	p	0.240	0.001
Cardiovascular Disease	r	0.189**	0.270**
	p	0.000	0.000
Peripherial vascular Disease	r	0.170**	0.340**
	p	0.001	0.000
hipovitaminosis	r	0.150**	-0.027
	p	0.003	0.595
niduses of focal infection	r	0.102*	0.424**
	p	0.041	0.000

Gingivitis reveals reliable significant positive correlation with the following factors: stress, allergy, kidney disease, pathology of gastro – intestinal, cardiovascular disease, hipovitaminosis peripherial vascular disease, niduses of focal infection

Periodontitis reveals reliable significant positive correlation bone and joint congenital anomalies, connective tissue dysplasia, diabetes mellitus, stress, pathology of gastro – intestinal, cardiovascular disease, peripherial vascular disease, niduses of focal infection.

DISCUSSION

Periodontal disease associated with adverse pregnancy outcomes, cardiovascular disease, stroke, a lung disease and diabetes, but a causal relationship has not been established [7]. According to the literature, the general form of periodontal disease in students have been associated with chronic diseases of the gastrointestinal tract and urogenital system [6], There are many studies that demonstrate an association between diabetes and an increased susceptibility to oral infections including periodontal disease [1,2]. Severity of periodontal disease is related to diabetes type, being more pronounced in patients with type 2 diabetes patients than in patients with type 1 diabetes[3]. One of the important oral

signs of diabetes is gingivitis and periodontitis. Patients with undiagnosed or poorly controlled diabetes mellitus type 1 or type 2 are at higher risk for periodontal disease.

In the present study Diabetes Mellitus, connective tissue dysplasia and Bone and Joint congenital anomalies not correlate gingivitis bat significant positive correlation exhibits with Periodontitis,; Stress; Allergy; kidney disease; Gastrointestinal disorders; Cardiovascular diseases;   Peripheral vascular disease; Hipovitaminosis; Focal foci of infection significant positive correlation exhibits with Periodontitis and gingivitis;

CONCLUSIONS

Inflammatory periodontal diseases have demonstrated a statistically significant associations with **somatic disorders**

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PREDICTION OF THE RESULTS OF TOTAL HIP ARTHROPLASTY, DURING APPLYING THE MODIFIED SOFT TISSUE RELEASE METHOD, BASED ON THE INITIAL FACTORS OF A PATIENT OF DYSPLASTIC OSTEOARTHROSIS OF HIP JOINT THAT DEVELOPED DUE TO ITS CONGENIAL DISLOCATION (CROWE TYPE III AND IV)

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ABSTRACT

We have elaborated original modified soft tissue release method of arthroplasty that can be applied during the dysplastic osteoarthritis (crowe III-IV).
The purpose of our investigation is to prognosticate the results of arthroplasty considering the initial specifications of a patient during the application of modified soft tissue release method of arthroplasty in case of the dysplastic osteoarthrosis (crowe III-IV)type.
Materials and methods: We have studied the consequences of arthroplastic interventions among 106 patients, aged 18-85, who had crowe III and IV types of dysplastic osteoarthrosis**.** They underwent arthroplastic surgery via our developed method in Z.Tskhakaia West Georgia Interventional Medicine Center, as well as Al.Aladashvili Clinic, Saint Ioane Motskale Private Clinic and Batumi Maritime Hospital. Among the patients, 83 were women and 23 men.
We studied the functional condition of the pelvic hip before and post-surgery and used Harris scale for the final assessment.
We established Reliability of true dissimilarities before and after treatment according to Wilcoxon test and ascertained correlation between the factors via Spearmen correlative analysis.Reliability of true dissimilarities between the results was established after using $p<0.05$, the statistical program package SPSS 22.
Results: The results of modified soft tissue release method of arthroplasty showed that functional abilities of patients considerably improved after the surgery. Before the surgical intervention, there was no excellent, or very good assessment among the patients - 0(0.00%), after treatment -85 (80.19%), $p<0.0001$ were given good assessment, accordingly 3(2.83%) and 12 (11.32%) $p=0.0201$ were given satisfactory assessment, accordingly 7(6.60) and 8(7.55) $p=0.7963$; dissatisfactory assessment – 96 (90.57%) and 1(0.94%), $p<0.0001$.
According to the Harris scale, there were no true dissimilarities between the indicators among the patients before arthroplasty; after the soft tissue release surgery total assessment of functional specifications increase from 39.5+18.95 to 92.6+8.04.
According to Harris scale, positive true correlation is foundthrough the following initial characteristics: anatomical leg deficiency up to 4cm.-r=0.332[**]; p=0.001; flexion $45-90^0$ r=0.212[*]; p=0.029; abduction $15-20^0$ - r=0.269[**]; p=0.005; adduction $15-60^0$ - r=0.228[*]; p=0.019; outer rotation $15-60^0$ - r=0.210[*]; p=0.031; elongation up to 2-cm. - r=0.283[**] ; p=0.003;
Relative chance to achieve excellent (very good) results is increased due to high assessment according to the Harris scale before the surgery, - OR=1.110(95% CI: 1.045-1.180)and is reduced due to anatomical length deficiency, more than 5 cm. OR=0.248(95% CI: 0.074-0.830), as well as the anamnesis of more than five years - OR=0.022(95% CI: 0.001-0.564).
Conclusions: Modified release method of total thigh joint arthroplasty based on dysplastic osteoarthrosis of thigh joint (crowe III-IV) improves the functional abilities of the joint. The results of the surgery depend on the functional abilities of a patient, anatomical leg deficiency and length of illness.
Keywords: modified release, relative chance, Harris scale, dysplastic osteoarthrosis.

РЕЗЮМЕ

Мы разработали оригинальный модифицированный метод **релиза** мягких тканей при артропластике **тазобедренного сустава,** который можно применять при диспластическом остеоартрозе (Crowe III-IV) 2
Целью нашего исследования является прогнозирование результатов артропластики с учетом исходных характеристик пациента при применении модифицированного метода эндопротезирования мягких тканей при диспластическом остеоартрозе (тип III-IV).

Материал и методы. Мы изучили последствия артропластических вмешательств среди 106 пациентов в возрасте от 18 до 85 лет, у которых был диспропластический остеоартроз III или IV типа. Они перенесли артропластическую операцию с помощью нашего разработанного метода в Центре интервенционной медицины им. З. Цхакая, Западная Грузия, а также в клинике им. Аль-Аладашвили, частной клинике Святого Иоанна Моцкале и Батумской морской больнице. Среди пациентов 83 были женщины и 23 мужчин.

Мы изучали функциональное состояние тазобедренного сустава, до и после операции и использовали шкалу Харриса для окончательной оценки.

Мы установили достоверность истинных различий до и после лечения по критерию Уилкоксона и установили корреляцию между факторами с помощью корреляционного анализа Спирмена. Надежность истинных различий между результатами была установлена после использования p <0,05, статистического программного пакета SPSS 22.

Результаты: Результаты модифицированного метода релиза мягких тканей при тотальной артропластике показали, что функциональные возможности пациентов значительно улучшились после операции. До хирургического вмешательства не было превосходной или очень хорошей оценки среди пациентов -0 (0,00%), после лечения -85 (80,19%), p <0,0001 были даны хорошие оценки, соответственно 3 (2,83%) и 12 (11,32%) p = 0,0201 получили удовлетворительную оценку, соответственно 7 (6,60) и 8 (7,55) p = 0,7963; неудовлетворительная оценка - 96 (90,57%) и 1 (0,94%), p <0,0001.

По шкале Харриса, у пациентов до артропластики не было истинных различий между показателями; после операции общая оценка функциональных характеристик увеличивается с 39,5 + 18,95 до 92,6 + 8,04.

С отличным результатом по шкале Харриса, положительная значимая корреляция обнаруживается по следующим исходным характеристикам: анатомическое укорочение до 4 см.- r=0,332 **; p=0,001; флексия 45-90^0 p=0,212 *; p=0,029; абдукция 15-20^0 - p=0,269 **; p=0,005; аддукция 15-60^0 - r=0,228 *; p=0,019; внешнее вращение 15-60^0 - r=0,210 *; p=0,031;

Относительный шанс очень хороших результатов увеличивается при высокой оценки по шкале Харриса до операции - OR=1,110(95% CI:1,045-1,180) и уменьшается из-за анатомической недостаточности длины, более чем на 5 см. OR=0,248 (95% CI:0,074–0,830), а также анамнез более пяти лет - OR=0,022 (95%CI:0,001–0,564).

Выводы: Модифицированный метод **релиза при** тотальной артропластики тазобедренного сустава с дисластическим коксартрозом(**Crowe III-IV**) улучшает функциональные возможности сустава.

Результаты операции зависят от функциональных возможностей пациента, анатомической анатомической укорочении конечности и анамнеза >5 л.

Ключевые слова: относительный шанс, шкала Харриса, диспластический остеоартроз.

აბსტრაქტი

ჩვენს მიერ შემუშავებულია ენდოპროტეზირების რბილქსოვილოვანი რელიზის მოდიფიცირებული ორიგინალური მეთოდი, რომელიც შეიძლება გამოყენებულ იქნას Crowe III და IV ტიპის დისპლაზიური კოკსართროზის დროს.

ჩვენი კვლევის მიზანია მენჯ-ბარძყის სახსრის ტოტალური ენდოპროტეზირების შედეგების პროგნოზირება პაციენტის ინიციალური მახასიათებლების გათვალისწინებით რბილქსოვილოვანი რელიზის მოდიფიცირებული მეთოდის გამოყენებისას III-IV ტიპის კოკსართოზის დროს (Crowe).

მასალა და მეთოდები: შევისწავლეთ 18-85 წლის ასაკის, დისპლაზიური კოკსართროზის მქონე 106 პაციენტის ენდოპროთეზირების შედეგები, რომელთაც ჰქონდათ crowe III და IV ტიპის დისპლაზიური კოკსართროზი და ჩაუტარდათ ენდოპროტეზირების ოპერაცია ჩვენს მიერ შემუშავებული მეთოდით ზ. ცხაკაიას სახელობის დასავლეთ საქართველოს ინტერვენციული მედიცინის ცენტრსა და ქ. თბილისის ა. ალადაშვილის სახ. კლინიკაში. მათ შორის 83 ქალი და 23 მამაკაცი.

მენჯ-ბარძყის ფუნქციურ მდგომარეობას ოპერაციამდე და ოპერაციის შემდეგ ვაფასებდით ჰარისის სკალის მიხედვით.

განსხვავების სარწმუნობას მკურნალობამდე და მკურნალობის შემდეგ ვადგენდით ულკოქსონის ტესტით, ფაქტორებს შორის ურთიერთკავშირი დადგინდა სპირმენის(Spearmen) კორელაციური ანალიზის საშუალებით. განსხვავება ითვლებოდა სარწმუნოდ, როდესაც p<0.05. მათემატიკური უზრუნველყოფა განხორციელდა პროგრამების პაკეტის SPSS 22-ის გამოყენებით.

შედეგები: მოდიფიცირებული რელიზის მეთოდის გამოყენებით ჩატარებული ენდოპროტეზირების შედეგებმა გვიჩვენა, რომ ოპერაციის შემდეგ უმჯობესდება პაციენტის ფუნქციური შედეგები: ძალიან **კარგი შეფასება:** მკურნალობამდე არ აღენიშნებოდა არც ერთ პაციენტს, - 0(0.00%), მკურნალობის შემდეგ -

85(80.19%), p<0.0001. კარგი – შესაბამისად –   3(2.83%) და 12(11.32%) p=0.0201; დამაკმაყოფილებელი – შესაბამისად 7(6.60) და 8(7.55) p=0.7963; არადამაკმაყოფილებელი – 96(90.57%) და 1(0.94%), p<0.0001.

ჰარისის სკალის მიხედვით პაციენტთა მაჩვენებლები ენდოპროტეზირებამდე სარწმუნოდ არ განსხვავდება, ოპერაციის შემდეგ – რელიზის შემთხვევაში ფუნქციური მახასიათებლის ჯამური შეფასება იზრდება 39.5+18.95-დან 92.6+ 8.04-მდე.

ძალიან კარგ შედეგთან ჰარისის მიხედვით სარწმუნო დადებით კორელაციას ამჟღავნებს შემდეგ ინიციალური მახასიათებლები: ანატომიური სიმოკლე 4 სმ-მდე - r=0.332**; p=0.001; ფლექსია 45-90^0 r=0.212*; p=0.029; აბდუქცია 15-20^0 - r=0.269**; p=0.005; ადდუქცია 15-60^0 - r=0.228*; p=0.019; გარე როტაცია 15-60^0 - r=0.210*; p=0.031; დაგრძელება 2-სმ-მდე - r=0.283** ; p=0.003;

ძალიან კარგი შედეგის ფარდობით შანსს ზრდის მაღალი შეფასება ჰარის მიხედვით ოპერაციამდე - OR=1.110(95% CI:1.045-1.180) და ამცირებს - ანატომიური სიმოკლე 5 სმ-ზე მეტი OR=0.248(95% CI:0.074-0.830) და ანამნეზი ხუთ წელზე მეტი - შეფასება ჰარის მიხედვით ოპერაციამდე ანამნეზი ხუთ წელზე მეტი - OR=0.022(95% CI:0.001-0.564).

დასკვნები: მენჯ-ბარძაყის სახსრის ტოტალური ენდოპროტეზირების დროს მაღალი ხარისხის დისპლაზიური კოქსართროზის(Crowe III-IV) შემთხვევაში რბილქსოვილოვანი რელიზის მოდიფიცირებული მეთოდი აუმჯობესებს სახსრის ფუნქციურ მდგომარეობას.

ოპერაციის შედეგები დამოკიდებულია პაციენტის ფუნქციურ მგომარეობაზე, ანატომიურ სიმოკლესა და დაავადების ხანგრძლივობაზე.

საკვანძო სიტყვები: მოდიფიცირებული რელიზი, ფარდობითი შანსი, ჰარისის სკალა. დისპლაზიური კოქსართროზი.

Despite the fact that total arthroplasty of the pelvic thigh is one of the mostly spread surgical procedures in the world[1], rational arthroplasty in case of dysplastic osteoarthrosis is still considered to be a great challenge in orthopedics[2,3].

Arthroplasty turns to be technically complicated during dysplastic osteoarthrosis (Crow III-IV) due to high quality dysplasia, during the dysplastic pathology of thigh joint and due to anatomical changes of para-articular muscles[4], femur sockets and thighbone, as well as during the incorrect development of femur sockets and bone of femur and incompliance to the length of legs[5,6].

It must be noted that young patients with dysplastic osteoarthrosis are more active due to their young age and therefore represent the higher-risk contingent in terms of prosthesis damage[7,8].

In spite of the fact that modern technologies and implants are introduced today, total arthroplasty of pelvic bone still remains to be rather complicated surgery and demands individual tactical approach towards a separate patient in terms of its techniques and construction[9-12]. Complication of the surgery can be related to the positioning of femur component. It is desirable for the femur to be implanted near the anatomical dislocation in order for the biomechanical balance of pelvis be achieved[13].

In order to reconstruct anatomical structure and regain physiological function of a hip, release and its balancing around the thigh bone and their protection from damage during the arthroplasty[14,15].

We have elaborated original soft tissue release modified method of arthroplasty that can be applied during dysplastic osteoporosis of Crowe III and IV types[16].

The aim of our research: Is to prognosticate the results of arthroplasty considering initial specifications of a patient during the application of modified soft tissue release method during the osteoporosis of III-IV types (Crowe).

Materials and methods: We have studied the consequences of arthroplastic interventions among 106 patients, aged 18-85, who had crowe III and IV types of dysplastic osteoarthrosis [i]. They underwent arthroplastic surgery via our developed method in Z.Tskhakaia West Georgia Interventional Medicine Center, as well as Aladashvili Clinic, Saint Ioane Motskale Private Clinic and Batumi Maritime Hospital. Among the patients, 83 were women and 23 men.

Inclusion criteria: Dysplastic osteoarthrosis if III-IV types (crowe).

Exclusion criteria: osteoarthrosis of non- dysplastic genesis, rheumatologic arthritis and other systemic diseases. We studied the functional condition of the pelvic hip enclosing: pain, ability of motion, self-service and joint flexibility. Harris scale was used for the final assessment[17].

OPERATION METHODOLOGY

While planning the surgical procedure we use radiography and in case of necessity we apply to thigh joint CT with 3D reconstruction

Surgery Technique: Arthroplasty is executed via front-side, trans-glueteral, approach according to Bauer. The patient lies on the back. On the outer surface of proximal part of athigh, we make an incision of the skin and under skin adipose tissue, as well as aponeurosis and muscles of big and small buttocks in the middle part of the thigh; from the front part of the thigh surface we execute exfoliation of muscular masses from the aforementioned muscles.In the front part of the exfoliated muscular masses the quadriceps femoris and buttock muscles remain connected through intermuscle cartilage and in the rear part it is fixed to the thigh bone. We make front capsulectomy and the resection of the top of the thigh.

By means of retractors, the visualization of the genuine socket is carried out that is followed by its processing using pheresis. In case of necessity, when the big size defect of the upper wall of femur socket is observed, we execute autoplastic surgery with the autologous bone transplant that is extracted from the top of a thigh. In most cases, we execute the implantation of cementless proximal component, seldom apply the reconstructive shell and cemented proximal component. We implement excision of osteophytes around the acetabular component.

On the next stage, we execute M.Iliopsoas modified release from the minor trochanter via electrical knife; the exfoliation of M. Iliopsoas takes place on the overall surface of the minor trochanter, together with periosteum. From the place of attachment to the bone, the muscular masses are exfoliated together with periosteum, the level of exfoliation depends on the width of the desired ambulation. Periosteum is exfoliated from the total surface of the minor trochanter and is fixed to the upper third of the medial surface of a thigh. It represents a common clasp for all muscles attached to the minor trochanter and ensures the development of the desired compression.(Photo 1-3).

If the abovementioned release is not enough to achieve the desired effect, we additionally execute the exfoliation ofrotators (M.piriformis, M.gemelussuperios, M.Gemelusinferior, M.obturatos,M.quadriceps), together with periosteum from the rear surface of big trochanter.

On the next stage, we implement processing of thigh canals via raspells and execute implantation and correction of a thigh component into the acetabular component. After the correction, we execute the redressing of a hip joint.

Reliability of true dissimilarities between the results prior and after treatment is established by the criteria of Wilcoxon test, the interconnection between the factors was established by Spearmen correlative analysis. The difference was considered true when $p<0.05$. The mathematical ensuring was processed with statistical program package SPSS 22.
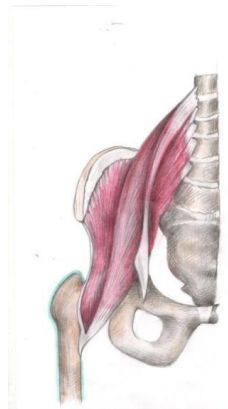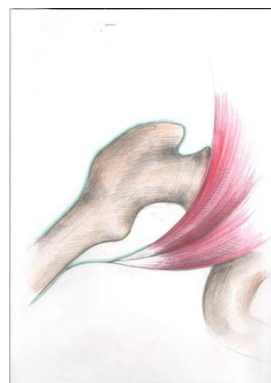
Photo1.   Photo2.   Photo3.

Results: The results of modified release arthroplasty according to the Harris scale are given in the table 1

Table1. The assessment of results of treatment according to the Harris scale using the method of modified soft tissue release

	Before treatment n(%)	After treatment n(%)	p
Very good ->90	0(0.00)	85(80.19)	0.0000
Good - 80-90	3(2.83)	12(11.32)	0.0201
Satisfactory - 70-79	7(6.60)	8(7.55)	0.7963
Dissatisfactory< 70	96(90.57)	1(0.94)	0.0000

According to Harris scale, there are no true dissimilarities between the indicators of patients before arthroplasty. After the surgery, in case of release, the total assessment of functional specifications increases from 39.5+18.95 to92.6+ 8.04.

Correlative analysis showed the connection between the results of the surgery and initial data of patients.

True positive correlation with very good results, according to the Harris scale, can be revealed through the following initial specifications:

Anatomical length deficiency up to 4 cm. - r=0.332[**]; p=0.001; flexion 45-90^0 r=0.212[*]; p=0.029; abduction 15-20^0 - r=0.269[**]; p=0.005; adduction 15-60^0- r=0.228[*]; p=0.019; outer rotation 15-60^0 - r=0.210[*]; p=0.031; elongation up to 2-cm. - r=0.283[**]; p=0.003; negative correlation–anamnesis more than5 - r=-0.226[*]; p=0.020; anatomic length deficiency more than 4 cm - r=-0.361[**]; p=0.000; functional deficiency more than 4 - r=-0.329[**]; p=0.001; flexion 0-45^0 - r=-0.228[*]; p=0.019; abduction 0-15^0 - r=-0.276[**]; p=0.004; adduction 0-15^0 - r=-0.228[*]; p=0.019;outer rotation 0-15^0 - r=-0.210[*]; p=0.031[*];

True positive correlation with good results, according to the Harris scale can be revealed : age 30< - r=0.300[**]; p=0.001;

Based on the correlative analysis we carried out regressive analysis that revealed prognostic factors of very good result (table2)

It turned to be possible to determine relative chance of a very good result during high quality dysplastic osteoporosis.(table 3.5.1.)

Table 2. Regressive analysis of prognostic factors of very good result

	B	S.E.	Wald	p	OR	95% C.I.for (OR)	
Anatomic length deficiency more than 5 cm	-1.396	0.617	5.114	0.024	0.248	0.074	0.830
Assessment according to Harris before surgery	0.105	0.031	11.519	0.001	1.110	1.045	1.180
Anamnesis more than 5 years	-3.827	1.660	5.313	0.021	0.022	0.001	0.564
Constant	-1.515	1.026	2.182	0.140	0.220		

Relative chance of a very good result is increased due to the high assessment according to Harris scale before surgery and is decreased due to anatomical length deficiency, of more than 5 cm, and anamnesis of more than 5 years.

Example:
Patient: M.KH. 65 years old, sex: female
Clinical picture: length deficiency of a left lower limb, restriction of movement and pain in the left-thigh joint, assessment according Harris-41 points
High quality dysplasia neoarthrosis of the top of the left side thigh (photo 1,2)
Total arthroplasty of the left hip joint was executed without cement application (photo 3).
After the surgery the motion capacity regenerated inside the joint, pain disappeared and the movement became feasible without a stick. Assessment according to Harris 89.

Discussion: The effectiveness of the arthroplaric surgery, besides the methods of the surgery,is depended on primary specifications of a patient. According to the literature, we can achive the maximum effect when we have good functional abilities of a patient and the syndrome of slight pain (according to the Harris scale 40-45 points).

Statistically significantly correlation with the surgery results can be revealed through limb lengthening. The deformation of a thigh that remained after the surgery also influenced the outcome of the surgery; however, correlation reveled to be statistically un significant[18].

According to the existed literature, the possibility of achieving very good results, according to Harris scale, increases 30 times if the surgery is executed on the patients under the age of 40; It increases 14 times at the age of 40-60, in comparison with the patients who are more than 60 years old. Accordingly, relative chance increases 3 times if the elongation does not exceed 3 cm. The minor correlation with the length deficiency of a limb before the surgery is shown [19,20].

According to our investigation, true positive correlation with a very good result, according to the Harris scale, can be revealed considering the following initial specifications:
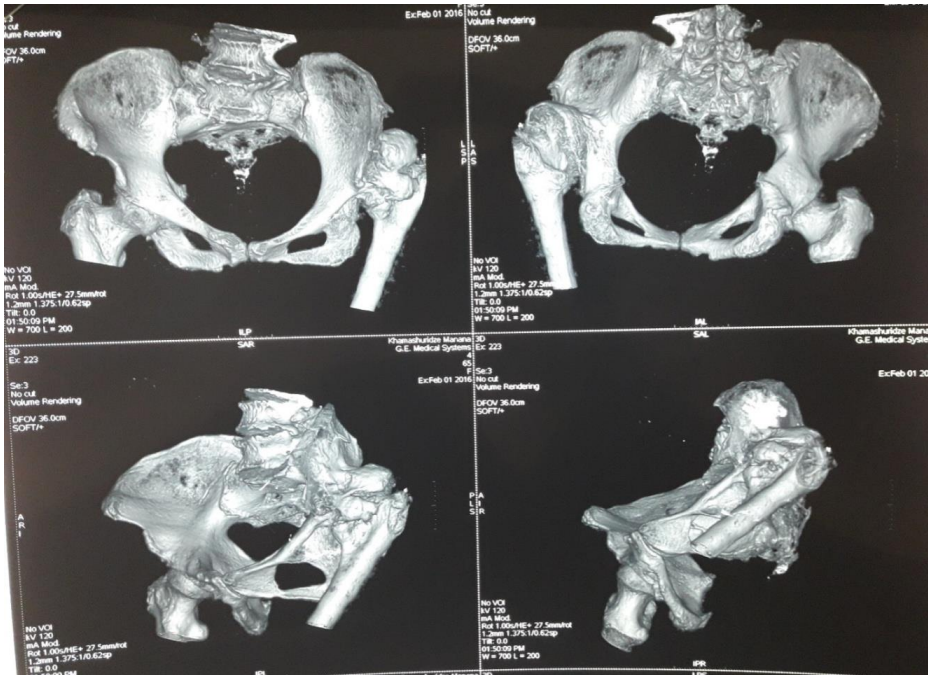
Photo1. CT investigation: High quality dysplasia of the top of a left-side hip, neoarthrosis.

Photo. 2 before the surgery   Photo. 3 after the surgery

According to our data, high assessment, according to Harris scale before the surgery, increases the relative chance to achieve a very good result and it is decreased in case of anatomical length deficiency of more than 5 cm and if the anamnesis is of more than 5 years.

Conclusions: Modified soft tissue release method of arthroplasty, during the total arthroplasty of a hip joint in case of high quality dysplastic osteoarthrosis (crowe III - IV), improves the functional results of a hip joint.
The results of the surgery depend on functional condition of a patient, anatomic length deficiency and duration of the disease. It determines the complete regeneration of bio- mechanics of the joint and provides the expansion of the motioning volume.

Anatomic length deficiency up to 2 cm - r=0.201[*] p=0.039; anatomic length deficiency up to 2 – 4 cm - r=0.332[**]; p=0.001; flexia 45-90^0 r=0.212[*]; p=0.029; abduaction 15-20^0 - r=0.269[**]; p=0.005; adduction 15-60^0 - r=0.228[*]; p=0.019; outer rotation 15-60^0 - r=0.210[*]; p=0.031; elongation up to 2-cm - r=0.283[**]; p=0.003;
True positive correlation with good results can be revealed at the age30< - r=0.300[**]; p=0.001.

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MATHEMATICAL MODELS OF COMPUTERIZED MANAGEMENT SYSTEM AND METHODS OF THEIR CONSTRUCTION

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ABSTRACT

The software is a set of mathematical methods, and algorithms of information processing, which used in creating the control system. When designing control systems, Initial data for the design of control system.
The tasks of the computerized control system are understood as a part of the computerized functions of the computerized control system characterized by the outcomes and outputs in specific form. Control function is: commutative action for computerized control system, aimed to achieve a criterion goal. Depending on the properties of the process and their mathematical description can be combined into different classes; This paper shows the designing the mathematical models which need to computerized management systems models (3) – (8). In the same time this paper shows the main methods which were used to formulate the mathematical models as:

- Stochastic and deterministic;
- One dimensional and multidimensional;
- Linear and nonlinear;
- Static and dynamic;
- Stationary and non – stationary;
- With distributed and lumped parameters.

Keywords: management system, Algorithm, Information processing, Criteria, Mathematical model, Characters.

INTRODUCTION

The software is a set of mathematical methods, and algorithms of information processing, which used in creating the management system. When designing management systems (CS) , Initial data for the design of CS software system is a list of functional task includes the task and function of computer aid design (CAD), computerized enterprise management system and etc.

In this way, part of software of CS including mathematical methods, and means allows us to solve all given tasks a special place in the composition of mathematical support is occupied by mathematical models of continuous technological process, used to manage them. From the mathematical point of view, every continuous technological process can be represented as a control objects.

FORMULATION OF THE PROBLEM

The tasks of the computerized management system are understood as a part of the computerized functions of the computerized management system characterized by the outcomes and outputs in specific form. Control function is: commutative action for computerized management system, aimed to achieve a criterion goal.
Each task in computerized management system (figure 1) can be formulated at meaningful level but to solve it with the help of computational tools required mathematical description of the problem, i,e, formal presentation of its task Z may be defined as a set of raw data I and decision R:

$$Z \rightarrow <I, R> \qquad (1)$$

Solution can be obtained by using method, which implemented in the form of the computation chart (algorithm A) or set of algorithms. Solution R can be obtained by the form:

$$R = M [I] \text{ or } R= A[I], \qquad (2)$$

Thus, formulation of the problem in computerized management system involves determining I, R, and selection of justification M. Description of the problem statement in computerized management system performed with accordance [1,2,3,4].
In the content of each task is: the purpose of the task, economic and mathematical model of the problem and method its solution, functional interconnectivity problems with information base of computerized management system and enterprise services, how to implement task for computer, reliable solution approximate of the efficiency objectives (expected performance, the cost of machine resources, cost of labor time and material resources for its development).
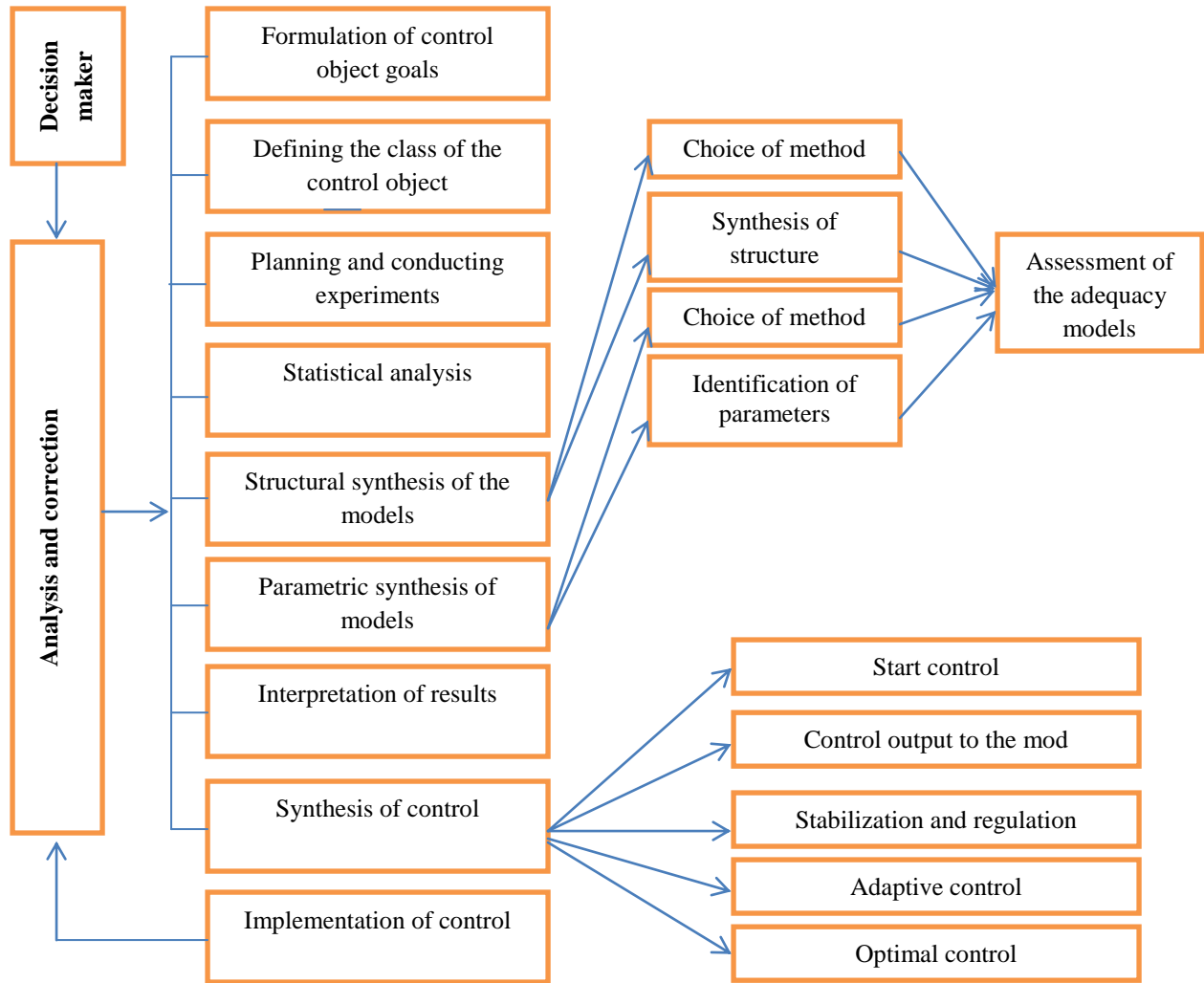
Figure (1) – levels of technological management object.

Content of the problem is included in documents (description of the problem statement) and description of the algorithms, who are working a document and design systems (Designers and programmers) and for employees of the enterprise management services.

Each document developed at the stage of technical design of MS and if necessary may be combined in one.

Realized of software and algorithmic support in MS is a software. A general description is made on the technical design stage and takes the form of a document (description of the software) of ICMS. Fully developed software is described in the detailed design stage and shall be in accordance with the requirements of the program document. The main section of the document (description of the problem statement):

1. Characterization of complex tasks;
2. Output information;
3. Input information

In CMS, engineering process is the main problem of mathematical models of technological process, are used to management the next tasks. Statement of the problem object management can be formulated follows:

Object is described input X; i.e. state of the environment, and output γ, i.e. state of the object
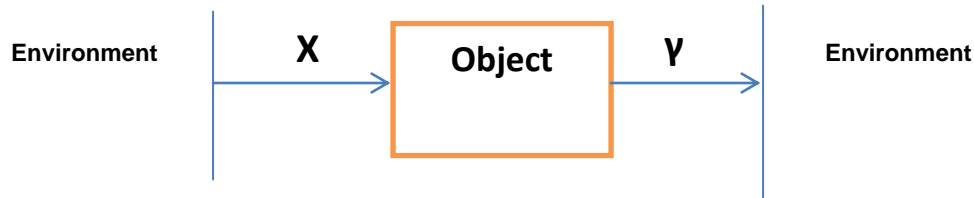
Figure (2)

State of the object **γ** depends on the environment X;

   γ = f⁰ (X); where f⁰ – characterizes the relationship between input and output object.

Source management purposes the system designer, which forms the purpose in accordance with their needs. If the state **γ** not satisfied with the developer recently formative influence on the object, i.e. implements management. If Z^m indicated the desired goal, then verify the objective Z^m the object can only be for the conditions **γ.** For this state y object should be expressed in the form Z= ψ (y). If Z= Z^m, you must create a management system, which is implemented to purpose Z^m.

For the implementation of management necessary to find the factors, they may be input object. If we denote management V, then state of an object depends on the X and V: **γ = f⁰ (X, V).** To formalize the description of their content management problem statement must identify input information I = <X, **γ** > and the desired result V: Z= Z^m . The next step after the formulation of the problem is the formulation of mathematical models [5, 6, 7].

PROBLEM SOLUTION

Depending on the properties of the process and their mathematical description can be combined into different classes; next, we will talk about referring an object to a particular class according to certain feature.

The following classes of process stand out:

* Stochastic and deterministic;
* One dimensional and multidimensional;
* Linear and nonlinear;
* Static and dynamic;
* Stationary and non – stationary;
* With distributed and lumped parameters.

Model of technical process presented in general form: $y = F(x)$; characterized by a structure s_t and parameters C ; i.e. operator $F =< s_t, C >$. Let's consider the basic models taking into account that, in each class the defining one is one of the proprieties;

Multidimensionality, linearity, stochastic, dynamism, stationary, distribution.

   The multidimensionality of an object is determined by the number of parameters, requiring control and regulation the larger this number is the more complex the subject. Some objects (power units and systems) are sometimes described in several tens and hundreds of parameters.

If, addition the decomposition into the system of linearly independent functions or higher – order differential equation, this dramatically increase the dimension of the problem. It is extremely difficult to obtain a complete mathematical description of such objects.

A linear is called an object, the reaction of with is sum of 2 impacts $x_1(t)$ and $x_2(t)$ equal to the amount of reaction to these impacts:

$$F[x_1(t) + x_2(t)] = F[x_1(t)] + F[x_2(t)] \qquad (3)$$

The model of such an object is generally described by a relationship

$Y = \sum_{i=1}^{n} C_i x_j + \sum_{j=1}^{m} C_{n+j} V_j$, where x_i – and V_j - accordingly the guided controlled input of the object.

Stochastic associated with presence of objects and among various uncontrolled factors, the combined effect of which can simulate a statistical one. The structure of the models of such an announcement

$$Y = F(x, V, E, (t)) \qquad (4)$$

Where E(t) – random process, modulating the existing uncertainty of the object and environment. This uncertainty can be due either to a rapid change in the state of the object, or interference, folding to measure the input and output of the object. Mathematical assuming that all deviations from regulation on the behavior of the object forms random interference E(t), the mode takes the form

$$Y = F(X, V) + E(t) \qquad (5)$$

Dynamic is present in those cases, when the mathematical description of the process is insufficient representation in the form of a function, it is necessary to use different and integral calculi.

An example of statically model is the decomposition of the output of an object Y by a system of linearly independent functions {φ} inputs X,V:

$$Y = \sum_{i=1}^{K} C_i \; \varphi_i(X, V), \qquad (6)$$

Where C_i – model parameters.

An example to a dynamic structure is a model in the form of linear differential equation

$$\frac{d^v y}{d t^v} + a_{p-1}\frac{d^{v-1}y}{d t^{v-1}} + \cdots + a_1\frac{dy}{dt} + a_\cdot y = B_2\frac{dt}{dt} + \cdots + B_\cdot X$$ or of course the difference equation

$$y_2 = \sum_{i=1}^{p} d_i y_{z-1} + \sum_{i=1}^{L} L_j X_{z-j};$$ where a_i, B_j, d_i, L_j – model parameters; z- moment of time.

The nonstationary of object is associated with a deterministic or random change in the time of operator F.

If this change occurs slowly enough, in type Driff parameters, it can be ignored, since the model correction (adaptations) process at each step of control allows adjust a model and thereby compensate of Driff. With a rapid change in character F nonstationary must be taken into account in the structure of the model and types of dependence F and C from time t

$$Y = F_t\big(X, V, C(t)\big) = F(X, V, C, t) \qquad (7)$$

Where the parameters can depending $C = C_0 + C_i(t)$;

The reason for nonstationary of the object may be its again.

The distribution of parameters usually places in objects, extent territorial, in this case the parameter of the object is a function of the other parameters most often a long object L, i.e. the model takes the form

$$Y = F_L(X, V, C) = F(X, V, C, L) \qquad (8)$$

Models of the form (3) – (8) in addition to defining the structure it is necessary to estimate the parameters C, mathematical operator used to evaluate C, is the theory of optimal estimation.

Mathematical methods of model synthesis (3) – (8) they are called identification methods.

RESULT

The tasks of the computerized management system are understood as a part of the computerized functions of the computerized management system characterized by the outcomes and outputs in specific form. Management function is: commutative action for computerized management system, aimed to achieve a criterion goal. Depending on the properties of the process and their mathematical description can be combined into different classes; This paper shows the designing the mathematical models which need to computerized management systems models (3) – (8). In the same time this paper shows the main methods which were used to formulate the mathematical models as:

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HATE SPEECH IN MODERN WORLD

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АННОТАЦИЯ

В статье рассматриваются ситуация в мире, где «язык вражды» становится реальностью нашей повседневной жизни, способствуя разжиганию розни между различными группами людей и вражды к тем, кто не является частью господствующего большинства.
Ключевые слова: язык вражды, меньшинства, маргинализация, враждебность, стереотипы, демократия.

ABSTRACT

The article considers the situation in the world where "hate speech" is becoming a reality of our daily life, contributing to incitement of discord between different groups of people and hostility towards those who are not part of the dominant majority.
Keywords: hate speech, minorities, marginalization, hostility, stereotypes, and democracy.

INTRODUCTION

Человеку свойственно воспринимать представителей иных культур с позиций своей культуры. Непонимание чужого языка, символики жестов, мимики и других элементов поведения собеседника может привести к искаженному толкованию смысла его действий, что порождает такие негативные чувства, как настороженность, презрение, враждебность [3, с.62]. Такое непонимание, связанное с «непохожестью», порождает ксенофобию и способствует формированию стереотипов.
В культурологии стереотипы трактуются как «устойчивое представление о каких-либо явлениях или людях, свойственное представителям той или иной группы» [1, с.18].
Стереотипы формируются в результате совместной деятельности людей путем акцентирования сознания человека на тех или иных свойствах, качествах явлений окружающего мира, которые хорошо известны, видны или понятны, по крайней мере, большому числу людей [6, с.53].
С помощью стереотипизации удается создать упрощенную матрицу окружающего мира, в ячейки которой, опираясь на стереотипы, «расставляются» определенные социальные группы [5, с.152].

MATERIALS AND METHODS
Часто стереотипы повторяют и усиливают определенные ошибочные убеждения и верования до тех пор, пока люди не начинают их принимать за истинные, основываясь на полуправде и искажениях. Стереотипы при этом искажают действительность и дают неточные представления о людях.
Формирование этнических стереотипов – это длительный процесс, который складывается на протяжении длительного периода времени у большинства населения страны. Этот стереотип трудно изменить. Но с развитием межкультурных отношений у молодого поколения меняются и этнические стереотипов [3, с. 221].
Одним из видов проявления стереотипизации различных групп является «язык вражды» или "hate speech".
«Язык вражды» - это речь или выражение, порочащие человека или лиц на основании (предполагаемого) членства в социальной группе, определяемой такими признаками, как раса, этническая принадлежность, пол, сексуальная ориентация, религия, возраст, физическая или умственная неполноценность и другие.
Проблема изучения «языка вражды» заключается в том, что терминология данного языкового явления еще не устоялось из-за недавнего появления. Среди ученых было проведено не так много научных исследований, в которых фигурирует данный термин. Исходя из вышесказанного, мы можем только попытаться дать адекватный ответ на данный дискурс. Сложность также состоит в переводе «языка вражды» на русский язык. Существует два способа перевода данного феномена. Риторика ненависти считается чисто лингвистическим переводом: ученые, занимающиеся этой проблематикой, ищут те языковые средства, которые превращают высказывание в «язык вражды». Когда же мы говорим о значении понятия «язык вражды», нам приходят на ум комментарии пользователей социальных сетей, небрежность журналисткой работы и прочие (часто бытовые) негативные высказывания. Налицо противоречие в определении понятия, поэтому так трудно определить поле действия, когда начинается и где заканчивается «язык вражды».

Существует еще одна характерная особенность явления «языка вражды» - его уголовная наказуемость при нанесении оскорбления человеческому достоинству. Что есть оскорбление? Где проходит граница между унижением человеческого достоинства, что наказуемо, согласно Уголовному и Административному Кодексу Российской Федерации, и выражением собственного мнения, данного гражданам Конституцией? Согласно российскому законодательству, «Российская Федерация является многонациональным и многоконфессиональным государством, и Конституция РФ закрепляет недопустимость дискриминации по национальному, расовому, религиозному или социальному признаку, недопустимость разжигания межнациональной и религиозной розни или вражды» (статьи 13. 19, 26, 62 и пр.) В части 2 статьи 26 Конституции Российской Федерации также устанавливается запрет на «пропаганду или агитацию, возбуждающую социальную, расовую, национальную или религиозную ненависть и вражду, пропаганду социального, расового, национального, религиозного или языкового превосходства» [7]. Статья 282 Уголовного Кодекса Российской Федерации предусматривает уголовное наказание за «действия, направленные на возбуждение ненависти либо вражды, а также на унижение достоинства человека либо группы лиц по признакам пола, расы, национальности, языка, происхождения, отношения к религии, а равно принадлежности к какой-либо социальной группе, совершенные публично или с использованием средств массовой информации либо информационно-телекоммуникационных сетей, в том числе сети «Интернет» [7].

Осуждение «языка вражды» не является исключительно российским феноменом. Комитет министров Совета Европы определяет «язык вражды» как «все формы самовыражения, которые включают распространение, провоцирование, стимулирование или оправдание расовой ненависти, ксенофобии, антисемитизма или других видов ненависти на основе нетерпимости, включая нетерпимость в виде агрессивного национализма или этноцентризма, дискриминации или враждебности в отношении меньшинств, мигрантов и лиц с эмигрантскими корнями» [3].

Типичный «язык вражды» включает эпитеты и оскорбления, высказывания, пропагандирующие злонамеренные стереотипы, и речь, направленную на разжигание ненависти или насилия в отношении группы. «Язык вражды» может также включать невербальные изображения и символы. Например, флаг цвета радуги, шестиконечная звезда, исламский полумесяц - все это может рассматриваться в качестве «языка вражды» по отношению к различным людям и группам. Критики «языка вражды» утверждают, что он не только наносит психологический и физический вред своим жертвам, если подстрекает к насилию, но и то, что он подрывает социальное равенство. Социальные группы, которые обычно являются объектами «языка вражды», исторически страдали от социальной маргинализации и угнетения, поэтому «язык вражды» представляет собой проблему для современных демократических обществ, которые являются приверженцами не только свободы выражения мнений, но и социального равенства.

RESULTS

Таким образом, налицо противоречие между правом человека на свободу речи и правом на безопасную и счастливую жизнь. Свобода самовыражения является краеугольным камнем построения современного демократического общества. При этом, «язык вражды» наносит непоправимый вред целым группам людей, которым не посчастливилось попасть в традиционное большинство. Выходом из этого положения могло бы стать введение некой государственной цензуры, где государство взяло бы на себя задачу регулировать степень опасности, которую «язык вражды» мог бы нанести отдельным группам людей. Однако, мы - граждане страны, в которой долгие годы существовала жесточайшая цензура, помним, какой огромный вред обществу она нанесла, подавляя инакомыслие, понимаем, в какую опасность цензура может ввергнуть наше общество. Принцип цензуры может привести к подавлению других непопулярных, но, тем не менее, законных средств самовыражения, например, критики работы правительственных чиновников, что жизненно важно для политического здоровья государства.

Конституции демократических государств предполагают социальное равенство людей и групп в обществе. Однако сторонники введения цензуры заявляют, что такое утверждение является ошибочным в реальном мире, так как существуют маргинализованные группы, которые уязвимы для «языка вражды». Они утверждают, что разжигание ненависти - это не просто выражение идей, а эффективное средство социального подчинения своих жертв. Целью «языка вражды» является не просто оскорбление исторически угнетенных меньшинств, но и закрепление их угнетения, давая возможность главенствующему большинству усваивать послания «языка вражды» и действовать соответствующим образом.

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DEVELOPMENT OF POWER QUALITIES FOR BOYS 6 – 7 YEARS ENGAGED IN HEALTH ORIENTATION ACROBATICS

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ABSTRACT

Formulation of the problem. The development of power qualities in acrobatics is considered as one of the types of motor activity, which determines the level of technical skill of those involved, the health of boys, their appearance, physical and mental ability.
The search for innovative approaches to the organization of out-school physical education with children should take into account the special importance and attractiveness of acrobatics for them. Implementation of the technique of most acrobatics exercises is impossible without a certain level of development of physical qualities.
The purpose of the research: to experimentally substantiate and give a comparative description of the system of training sessions, which contribute to the development of force in boys 6-7 years engaged in health-improving orientation acrobatics.
The following research methods were used to solve the **set tasks:** analysis of references, pedagogical observation, pedagogical testing, and methods of mathematical statistics.
Presentation of the main material. The research was conducted on the basis of the out-school communal institution of the City Youth Children Sport School in sport gymnastics in Dnipro. The study was attended by 12 boys aged 6-7 engaged in health-orientation acrobatics. Trainings in the group were conducted three times a week for 90 minutes according to the traditional, adapted methods. A comparative analysis of the results of pedagogical testing showed that in the group of boys 6-7 years engaged in acrobatics in tests for determining the level of development of power, there is a significant increase in the indicators ($p < 0.05$) in all tests, except for dynamometry ($p > 0.05$) . Comparing the indicators, it should be noted that: in test № 1 (Pull-up) the result has improved from low to below average; in test № 2 (Push up) the result has improved from below the average to the average; in test № 3 (Dynamometry) the level remained low; in test № 4 (Hanging Double Straight Leg Lift) the indicators have increased from low to average; in test № 5 (Long jump) the result has improved from low to medium level.

Conclusions. Based on the results of the pedagogical testing of boys aged 6-7 engaged in acrobatics, we conclude that in the group indicators of the level of development of power qualities have increased. Comparing test results of the testing of the development of power qualities after the experiment, we proved the reliability of the difference between the results in most tests, which is confirmed by comparing the values of the Student t-criterion ($t > Tgr$, $p < 0.05$). This can be explained by the fact that power orientation exercises are performed at acrobatics trainings.
Keywords: strength qualities, development, acrobatics, training.

Анотація. В статі представлена дослідницька робота по розвитку силових якостей на заняттях акробатикою у хлопчиків 6-7 років. У проведеному дослідженні підтвердився вплив занять акробатикою на розвиток силових якостей у хлопчиків 6-7 років.
Ключові слова: силові якості, розвиток, акробатика, тренування.

Formulation of the problem. The development of power qualities in acrobatics is considered as one of the types of motor activity, which determines the level of technical skill of those involved, the health of boys, their appearance, physical and mental ability to work [1, 11].
The search for innovative approaches to the organization of extracurricular physical education with children should take into account the special importance and attractiveness of acrobatics for them. It allows to solve a complex of important tasks in working with children: to satisfy their need for movement, to learn to own a body, to develop physical qualities, intellectual and creative abilities, moral qualities, etc. [2, 6].
Implementation of the technique of most exercises acrobatics is impossible without a certain level of development of physical qualities. For the successful development of power qualities, first of all, the theoretical substantiation of the issue is necessary. Necessary knowledge for the development of power qualities belong to different branches of knowledge:

theories and methods of physical education, anatomy, biomechanics, physiology. To find effective means of developing power qualities, an integrated approach is proposed that combines different areas of knowledge that will help to identify the causal link of all aspects of the development of power qualities [7, 8].

Analysis of recent research and publications. Today the problem of development of physical qualities is under the attention of specialists, educators, trainers, doctors. This is due to the general decline in the level of health, physical training of children of different age groups. The active search of effective methods, optimal ways of development of motor qualities is constantly underway.

Scientific-methodical literature, contains a lot of publications related to force training of school-age children. In scientific guides in detail the principles of the methodology of the development of power qualities are described in detail, the leading components of the training influence on the development of force are determined, the characteristics of the means and methods of education of power qualities are given. Much attention is paid to the technique of performing exercises for the development of force, the power qualities regarding age and sexual characteristics, adaptation of the organism in long-term and short-term loads and other [4, 5, 9] are considered.

The problems of organizing the training process of training in sports acrobatics were carried out by specialists: N.V. Bachinsky, AV Fedoryaka, V.E. Chursinov and others [3, 10]. But there is a need to improve the methodology of training children engaged in sports acrobatics. Therefore, we believe that this problem is relevant and requires a more detailed study.

Conclusions. Based on the results of pedagogical testing of boys aged 6-7, who are engaged in acrobatics, we conclude that in the group indicators of the level of development of strength qualities have increased. Comparing the results of the testing of the development of power qualities after the experiment, we have proved the reliability of the difference between the results in most tests, which is confirmed by comparing the values of the t criterion of the Student (p <0.05). This can be explained by the fact that exercises on acrobatics are carried out by force orientation. And also in the training sessions must be exercised general and special physical training.

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MICROBIOLOGICAL AND CLINICAL ASSESSMENT OF ACNE

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ABSTRACT

Introduction: Acne vulgaris is one of the most common skin disorders in youth especially during the puberty.   The role of the skin microbiome in acne development/prevention is still not clear. Acne is traditionally regarded as a skin disorder of the teenage years. However, recent epidemiologic studies have shown that a significant number of female patients aged >25 years experience acne.   It is not an infectious disease, but three major organisms were isolated from the surface of the skin and the pilosebaceous duct of patients with acne including Propionibacterium acne, Staphylococcus epidermidis and Malasezia furfur.

Aim of study: In order to identify the microbial populations present in persistent acne patients, human skin microbiome isolated from acne lesions were investigated skin swabs by use of bacteriological techniques and evaluated susceptibility patterns in patients with acne against antibiotics, which are widely used for acne.

Material and Methods:

We retrospectively studied 58 patients (35 women and 23 men) in the age range of 18-36 years old, who were visited by dermatologist at The First University Clinic of TSMU. Samples were collected from skin lesions by tape-stripping methods, which collected a greater number and wider variety of viable skin bacteria than the swabbing method.   The specimens were cultured individually on blood agar, Mac Concey agar and sabouraud agar. The cultures were then incubated under aerobic condition for 2 days. Bacteria were identified and their resistance to common antibiotics was evaluated according to the standard procedures.

Results: In aerobic culture of skin lesions mostly head and trunk, Micrococcus spp was present in 72% subjects, Staphylococcus aureus in 19% and Staphylococcus epidermidis in 9% of subjucts. The results of present study revealed that fluoroqinolones and erythromycin were the least effective antibiotics for all isolates,while tetracycline , clyndamicine and chloramphenicol was the least effective for Staphylococcus aureus in vitro. Ampicilline+sulbactam, amoxicillin+clavulanic acid , cephalosporines and aminoglycosides were the most effective antibiotics.

Conclusion: In our study Micrococcus spp was the most predominant and persistent organism isolated from skin and preferred regions of the head and trunk. Elucidating the ambiguous determinants of this phenomenon is of major public health interest. Indiscriminate use of antibiotics should be avoided to prevent the development of resistance strains by timely bacteriological investigation swabs from skin and starting treatment depend on local antibiotic susceptibility /resistance test results.

Keywords: acne, bacteria, antibiotics

აბსტრაქტი

შესავალი: აკნე   ყველაზე ხშირ გვხვდება პუბერტატულ პერიოდში. კანის მიკროფლორის როლი მის პრევენციაში ჯერ კიდევ არ არის ნათელი. ეპიდემიოლოგიურმა კვლევებმა აჩვენა, რომ აკნე ხშირად გვხვდება არა მარტო თინეიჯერულ ასაკში, არამედ ქალებში 25 წლის ზევით. მის ძირითად გამომწვევ მიზეზად გვევლინება Propionibacterium acne, Staphylococcus epidermidis and Malasezia furfur.

მიზანი: ჩვენ ბაქტერიოლოგიურად შევისწავლეთ კანიდან აღებული ნაცხების მიკრობული სტრუქტურა და განვსაზღვრეთ ანტიბიოტიკომგრძნობელობა იმ ანტიბიოტიკების მიმართ, რომელიც ყველაზე ხშირად გამოიყენება აკნეს სამკურნალოდ.

მასალა და მეთოდები: ჩვენ რეტროსპექტულად შევისწავლეთ 58 პაციენტი(35 ქალი და 23 კაცი) , 18-36 წლის ასაკის, რომელთაც მომართეს თსსუ პირველი საუნივერსიტეტო კლინიკის დერმატოლოგს. კანიდან აღებული ნაცხის ბაქტერიოლოგიური კვლევა მოიცავდა: დათესვა 5%-იანი ცხვრის სისხლიან , მაკკონკის და საბურს ნიადაგებზე. აერობულ პირობებში 2 დღიანი ინკუბაციის შემდეგ მოვახდინეთ გამოყოფილი კულტურის იდენტიფიკაცია და ანტიბიოტიკომგრძნობელობის განსაზღვრა.

შედეგები: Micrococcus spp ამოითესა 72%-ში, Staphylococcus aureus -19%, Staphylococcus epidermidis 9%. ფლუოროქინოლონები და ერითრომიცინი იყო ყველაზე არაეფექტური ანტიბიოტიკომგრძნობელობის მხრივ. Staphylococcus aureus-ი იყო რეზისტენტული ტეტრაციკლინი, ქლორამფენიკოლი და კლინდამიცინის მიმართ. ამპიცილინ+სულბაქტამი, ამოქსაცილინი+ კლავულანის მჟავით, ცეფალოსპორინები და ამინოგლიკოზიდები იყო ყველაზე ეფექტური გამოყოფილი მიკროორგანიზმების მიმართ.

დასკვნა: ჩვენი კვლევით მიკროკოკები დომინირებდნენ სახის და ტანის მიდამოდან აღებულ კანის ნაცხებში. ანტიბიოტიკების არარაციონალურ გამოყენებას აკნეს სამკურნალოდ მივყავართ რეზისტენტული შტამების ჩამოყალიბებისკენ, ამიტომ ბაქტერიოლოგიური კვლევა და ლოკალურ მგრძნობელობაზე დაყრდნობით ანტიბიოტიკოთერაპია არის მნიშვნელოვანი.

საკვანძო სიტყვები: აკნე , ბაქტერიები, ანტიბიოტიკები.

INTRODUCTION

Acne vulgaris is a chronic inflammatory disorder of pilosebaceous follicles that affects more than 85 percent of adolescents and young adults (1, 2). Four major factors are involved in the pathogenesis including increased sebum production, hypercornification of the pilosebaceous duct, an abnormality of the microbial flora especially colonization of the duct with Propionibacterium acnes, and the production of inflammation (3). It seems that several factors influence acne including diet, menstruation, sweating, stress, ultra violet radiation and occupation (4). In the 1970s, evidence of resistance to topical erythromycin and clindamycin was reported and, since then, antibiotic resistance in acne has been increasing worldwide. The role of other skin microbiome in acne development/prevention is still not clear. One of the major problems was associated with poorly understood acne-associated uncultured bacterial populations, influencing acne directly or indirectly. With this in mind, we sought to study the remaining bacterial populations associated with acne and tried to investigate the role of these acne-associated human skin microbiome in disease induction as well as in its prevention. Acne is traditionally regarded as a skin disorder of the teenage years. However, recent epidemiologic studies have shown that a significant number of female patients aged >25 years experience acne. One recent community-based UK study estimated the prevalence of facial acne in adult women aged between 26 and 44 years to be 14%. It is not clear whether there is a true increase in acne in this age group or whether these patients are less tolerant of their acne and/or better informed of available therapies and so seek advice. The reasons for persistent acne are not fully understood. Acne is not an infectious disease, but three major organisms were isolated from the surface of the skin and the pilosebaceous duct of patients with acne including Propionibacterium acne, Staphylococcus epidermidis and Malasezia furfur (6,7). The development of acne is a multifactorial process involving both endogenous and exogenous factors (8), including excessive sebum secretion, ductal hypercornification and changes in the microbial flora, especially colonization with Propionibacterium acnes (P. acnes) (9). Antibiotic therapy has been integral to the management of acne for many years. The widespread use of antibiotics has unfortunately led to the emergence of resistant bacteria (10). In addition, changing patterns of antibiotic sensitivity and the emergence of more virulent pathogens, such as community-acquired methicillin-resistant Staphylococcus aureus (MRSA), have led to marked changes in how clinicians use antibiotics in clinical practice. Depending on the severity of the disease, the acne patients receive topical or systemic therapy, or a combination (11). Pathogenesis of microorganism originates from production of proinflammatory mediators (e.g. IL-1, TNFα) as well as many lipases. Increased number of Propionibacterium acne was reported in acne patients, but their number was not correlated with the clinical severity. Due to development of a resistance in microorganisms causing acne to common antibiotics and the differences in species and strains of the microorganisms in different regions, a research in the method of therapy seems indispensable(12).

Material and Methods: Samples from the skin lesions were provided in 65 patients (45 girls, 20 boys) in the age range of 16-38 years. The samples were immediately cultured individually on blood agar, MacConkey agar, sabouraud agar. The

cultures were then incubated at 37°C under aerobic conditions for 2 days. The colonies species were determined morphologically by specific culture media such as mannitol, indole and sorbitol media and specific standard microbial tests such as oxidase, catalase, and coagulase tests. Identification of bacteria on species level was done by using repid biochemical identification API system (ApiStaph, ApiStrep, api20E, Biomerieux). The sensitivity of bacteria to antibiotics was determined according to the method of Kirbay-Bauer. Antimicrobial suscebtibility of bacteria was evaluated against following antibiotic, which are widely used for acne : ampicilline+sulbactam, amoxicilline+clavulanic acid, cefoxitin, ceftriaxone, ciprofloxacine, levofloxacine, moxifloxacine, clindamycine, erithromycine, rifampin, chloramphenicol, tetracycline, amikacine, gentamicine, cotrimoxazole.

Table1.

The effects of different antibiotics on isolated bacteria of acne vulgaris

Name of antibiotic	Sensitivity%	Resistance%
Ampicilline+sulbactam	100%	0%
Amoxicilline+clavulanic acid	100%	0%
Cefoxitine	95%	5%
Ceftriaxone	90%	10%
Ciprofloxacine	40%	60%
Levofloxacine	45%	55%
Moxifloxacine	65%	35%
Clyndamicine	45%	55%
Amikacine	95%	5%
Gentamicine	75%	25%
Chloramphenicole	45%	55%
Tetracycline	55%	45%
Rifampin	75%	25%
cotrimoxazole	85%	15%

Results: In aerobic culture of skin lesions mostly head and trunk, Micrococcus spp was present in 72% subjects, Staphylococcus aureus in 19% and Staphylococcus epidermidis in 9% of subjucts . The results of present study revealed that fluoroqinolones and erythromycin were the least effective antibiotics for all isolates, while tetracycline was the least effective for Staphylococcus aureus in vitro. Ampicilline+sulbactam, amoxicillin+clavulanic acid and cephalosporines were the most effective antibiotics. (table1)

Conclusion: In our study Micrococcus spp was the most predominant and persistent organism isolated from skin and preferred regions of the head and trunk. Acne is a multifactorial disease of as yet incompletely elucidated etiology and pathogenesis. A microbial etiology of acne has been suggested since the beginning of the last century. Elucidating the ambiguous determinants of this phenomenon is of major public health interest. We believe that because of changeable drug-sensitivity of bacterial strains, it seems important to perform assessment of bacterial flora and antibiotic susceptibility of isolates in acne cases, especially in clinically severe and resistant to treat. Beside the presence of resistant strains to various antibiotics in our study emphasizes the need to discourage antibiotics' abuse. Indiscriminate use of antibiotics

should be avoided to prevent the development of resistance strains by timely bacteriological investigation swabs from skin and starting treatment depend on local susceptibility test results.

Keywords: acne, bacteria, antibiotics

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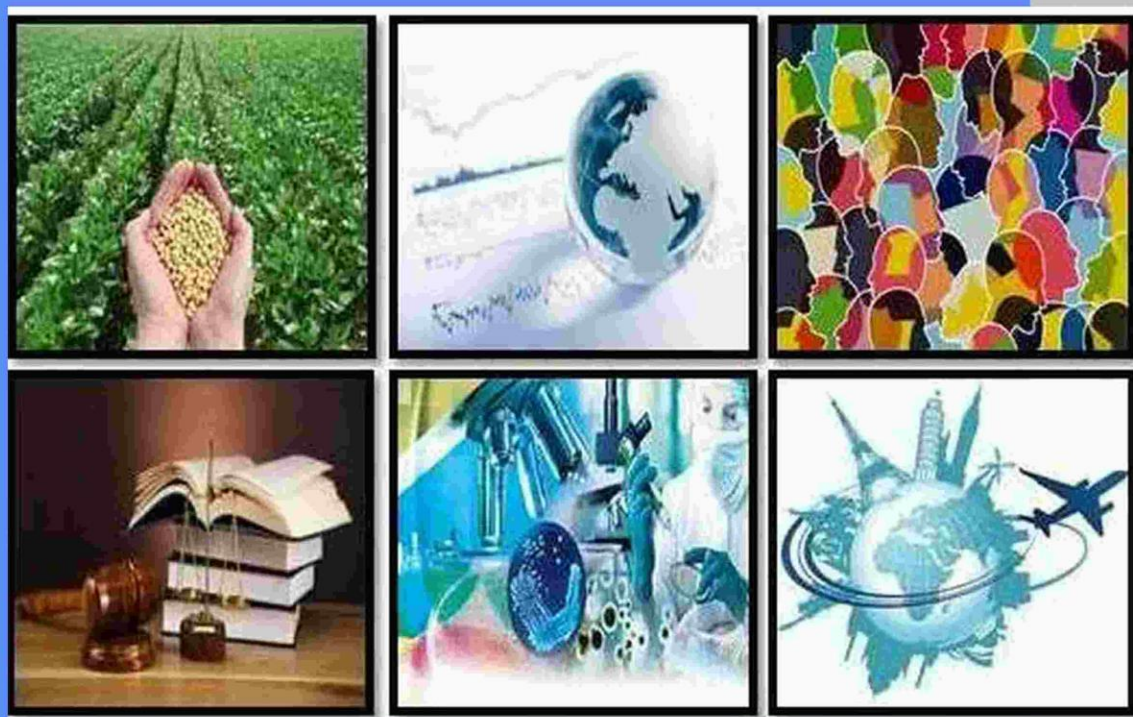# JOURNAL INDEXING

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