

СПИСЪК С РЕЗЮМЕТА
НА ТРУДОВЕТЕ НА АННА МИХАЙЛОВА,
СЛЕД ЗАЩИТА НА ДОКТОРСКА ДИСЕРТАЦИЯ

Публикации в международни списания с импакт фактор реферирани в SCOPUS

1. Mihaylova A, Uchicova E, Parahuleva N, Gueorguiev S, Use of corticosteroids to prevent complications in preterm birth, *PHARMACIA*, , vol. 63, No.4 p. 42-51, 2016 ISSN 0428-0296 **SJR 2016 0.115**

Abstract. Preterm birth is a medical and severe socioeconomic problem. It is the most common cause of neonatal mortality in developed countries represents 80% of all deaths worldwide in neonatology (over 1.1 million) and more than 30% of the same in Europe. In the United States as of 2010 over 12% of all births are preterm, where 30% increase is observed since 1981 till the present moment. In Brazil, the rate is about 6.5% in 2006 and it is growing, reaching 10.7% in 2011.

In prenatal and neonatal medicine, newer and customizable preventive measures are applied in order to reduce the risk of death of preterm infants, and reduce the probability of developing health complications and drug-related side-effects in the treated women and newborns. The positive aspect of corticosteroid use is the aim to achieve preventive effect on respiratory distress syndrome, hyaline membrane disease (HMB) and other complications, as from a medical point of view this is a much preferred preventive approach.

The purpose of corticosteroid effective prevention is to reduce complications in prenatal infants and shorten their stay in the neonatal and intensive care units, which in itself is extremely serious socio-economic problem.

2. Mihaylova A, Gueorguiev S, Parahuleva N, Karaslavova E, Sandeva M, Petkova-Gueorguieva E, Ivanova S, Ivanov K, Uchicova E, Frequency of HMD in preterm newborns after prenatal corticosteroid therapy, *Biomed Res* 2018, Volume 29, issue 6, p.1115-1119 **IF 2017 0.219, SJR 2019 0.151**

Abstract. Premature birth is a serious medical, social and economic problem. Its consequences are multiple health complications leading to high neonatal mortality worldwide. Respiratory insufficiency and surfactant deficiency significantly increase the risk of developing Hyaline Membrane Disease (HMD) and other forms of Respiratory Distress (RDS). These are the most common causes of death in premature babies.

In prenatal and neonatal medicine, new and adaptive prophylaxis is being implemented to reduce the risk of death of premature babies and reduce the development of health complications. The goal of effective corticosteroid prophylaxis is to reduce mortality, reduce complications in prenatal new-borns, and shorten their stay in neonatal and intensive units respectively. A retrospective study of 167 preterm infants was conducted, of which 89 (53.3%) had prophylaxis with dexamethasone. In 25 (15%) of preterm infants, there was a Hyaline Membrane Disease (HMD) and 101 (60.5%) developed other forms of Respiratory

Distress Syndrome (RDS). The results obtained show that the incidence of HMD in preterm infants is mediated by the early gestational age and advanced age of the mother, and decreased by corticosteroid therapy.

3. Petleshkova P, Krasteva M, SDragusheva, D Bakova , B Tornyova, Mihaylova A, Parahuleva N - Factors affecting the severity of procedural pain in new-borns, *Biomedical Research*, volume 29 issue 10, p.2049-2052 **IF 2017 0.219**

Abstract. In recent years, the objectification and control of neonatal pain has caused many discussions. Given its early and late effects, researchers' efforts are aimed at minimizing the impact of maternal and child-related factors, with a possible effect on pain sensitivity in new-borns. Our aim is to study the influence of maternal factors (daily intake of one or more cups of coffee and bacterial vaginosis during pregnancy, birth mechanism, blood group and Rhesus factor) and child-related factors (gestational age, gender, blood group and Rhesus factor) on the severity of procedural pain, caused by puncture of the heel. The present study includes 67 infants carried to term and aged 72-84 h, born by varying birth mechanisms and with an optimal Apgar score. By video surveillance before, during and after the procedure, the pain was assessed using the Neonatal Infant Pain Scale (NIPS). The results were measured 30 s and 5 min after the heel puncture. The following statistical methods were used: Kruskal-Wallis test, X² assay (Chisquared test), Student's t-test and Mann-Whitney's u-test, with a factor of significance of $p < 0.05$. At the 30-s mark, there was no statistically significant difference in the severity of pain among the new-borns in the groups: pregnant women, which have consumed coffee and had bacterial vaginosis during the pregnancy. The mechanism of birth, gender and Rhesus factor of the new-born and mother did not change the severity of pain. New-borns with a larger gestational age and those from mothers with the blood group AB showed a significantly increased response to procedural pain. At the 5-min mark, none of the studied factors associated with the mother and new-born had a significant effect on the degree of pain. The influence of maternal and child related factors on the severity of procedural pain in new-borns is limited.

4. Petkova E, Ivanov K, Gueorguiev S, Mihaylova A, Madzharov V, Ivanova S, Detection of sibutramine in herbal food supplements by UHPLC/HRMS and UHPLC/MS-MS. *Biomedical Research ISSN 0970-938X*, 2018; 29 (14): 3006-3009 **IF 2017 0.219**

Abstract. Recent studies have announced that many food supplements for weight loss contained undeclared sibutramine. We have analysed 10 samples of herbal weight loss food supplements (FS) by HPLC/HRMS and UHPLC/MS-MS. We have established that two of the analysed samples contained sibutramine: respectively 5 µg/per capsule and 20 µg/per capsule. Illegal inclusion of this substance in FS could cause serious side effects and long term health consequences. The regulatory requirements for FS should be enhanced for more comprehensive consumers' protection. The need for mandatory quality control of these products and public awareness is undeniable.

5. Kasnakova P, Mihaylova A, Petleshkova P, Comprehensive rehabilitation of herniated disc in the lumbar section of the spine. *Biomedical Research ISSN 0970-938X*, 2018; 29 (14): 3002-3005 **IF 2017 0.219**

Abstract. Herniated disc is one of the most common problems of the musculoskeletal system, and the spine, in particular. This article presents a modern algorithm of methods of treatment constituting comprehensive rehabilitation of herniated disc in the lumbar section of the spine, including: physical therapy, active and passive kinesitherapy, medical massage and manual techniques, applied in the medical practice.

Rehabilitation and physioprophyllaxis facilitate the reduction of the risk of occurrence and development of herniated disc in the lumbar section of the spine through natural (water, air, movement and sunshine) and preformed physical factors, the main aim being achieving a good quality of life of both the sick and the healthy. The so called 'spine school', which includes training the patient to have a good posture, a good stance, to walk correctly and to improve his/her motor stereotype through control and self-control, plays a major role. In developing the individual treatment scheme for each patient at a certain stage of his/her condition, it is vital to attempt to achieve a synergic effect of the optimal combination of electrotherapeutic, peloid therapeutic and kinesitherapeutic methods.

Regular courses in physioprophyllaxis and kinesio-prophyllaxis significantly boost the effect of the medicamentous therapy in patients with herniated lumbar disc and improve their quality of life.

6. Kasnakova P, Ivanova S, Ivanov K, Petkova-Gueorguieva E, Gueorguiev S, Madzharov V, Mihaylova A, Petleshkova P, Conservative therapy options for the treatment of coxarthrosis in the early stage of the condition. *Biomedical Research ISSN 0970-938X*, 2018; 29 (14): 2997-3001 **IF 2017 0.219**

Abstract. Aim: Arthrosis of the hip joint is a condition that is becoming more and more common-it affects 1% of the population and constitutes a serious problem for their working efficiency and active way of life. The deforming arthrosis limits the functional capacity of the affected patients, worsens their quality of life and leads to incapacitation of the patients. The treatment of patients with coxarthrosis has to be planned and carried out comprehensively, in accordance with the pathological findings, the stage, duration and individual abilities of each patient. In the early stages of the condition, conservative therapy plays an essential role in the prophylaxis of complications and in slowing down the process. Physical and rehabilitation methods, in combination with medicamentous therapy, yield good results.

This article focuses on the application of the comprehensive effect of conservative physiotherapeutic methods and complementary drug therapy in the early stage of coxarthrosis. The aim of the study is to investigate the efficiency of the combined application of physiotherapeutic electrical procedures and kinesitherapy methods and means in the treatment of coxarthrosis in the initial stage.

Material and methods: 18 out-patients with coxarthrosis at an average age of 68, were subjected to a treatment schedule including: interferential current, low-frequency magnetic

field, ultra phoresis with non-steroid anti-inflammatory medications, followed by a program of remedial exercise administered in 2 courses of 7 d at 'St. Panteleymon' Hospital in Plovdiv, in the period from September 2017 to May 2018.

Results: The range of motion in terms of degrees exhibits a tendency towards increasing at the end of the course of therapy, as compared to that at the beginning of the course. The results from the initial and final muscle tests of the hip joint showed an improvement of the muscle function (from a degree of 3.50 to a degree of 4.50).

Conclusion: In patients with coxarthrosis in the initial stage, the pain subsides after the physical and rehabilitation therapy administered in combination with medications.

7. Kasnakova P, Mihaylova A, Analysis of the recovery of patients with stroke, *PHARMACIA*, vol. 65, No. 3/2018 p.35-40 **SJR 2018 0.158**

Abstract: The aim of current study was to assess the role of the rehabilitation for improvement of the functional capacity, the autonomy in the daily routines, ergotherapeutic activities and the quality of life of patients with stroke.

Methods: 47 patients with stroke were included in the research and their functional status was assessed according to the Brunnstrom stages of stroke recovery, the modified Rankin scale, the Barthel index, Subjective Quality of Life.

Results: In the beginning of the complex rehabilitation therapy the patients were almost entirely dependent and were notable to accomplish ergotherapeutic activities. At the end of the second rehabilitation course it was found a significant improvement of the general motor skills of the study participating patients ($p < 0.001$). The results of the applied specialized rehabilitation program show that from 25.53 % for stages I and II and 46.81 % for stage III of Brunnstrom patients from the beginning of the first course of rehabilitation until the end of the second course of rehabilitation recover the motor functions up to 60.47 % for stage IV and 25.58 % for stages V and VI. At the end of the second course of rehabilitation program, the patients without significant neurological deficit with mRS (0-2) are 90.69 % and with significant neurological deficit mRS (3-6) are 9.31%.

Conclusion: The results confirmed the efficiency of the applied complex approach, but the recovery is not sufficient in terms of independence of the general movements and the patients' social integration.

8. Petkova-Gueorguieva E S, Getov I N, Ivanov K V, Ivanova S D, Gueorguiev S R, Getova V I, Mihaylova A A, Madzharov V G, Staynova R A, Regulatory Requirements for Food Supplements in the European Union and Bulgaria. 2018 *Folia medica* 60(4):95-101 10.2478/folmed-2018-0032 **SJR 2018 0.311**

Abstract. Data provided by the European Commission show that public expenditures for food supplements have been constantly increasing over the last decade.

The aim of the present study was to analyze the major food supplements regulations in the European Union and in Bulgaria. Relevant publications were searched and found in MEDLINE/PubMed, Scopus Database, Web of Knowledge, and in Internet-based search with predefined keywords. Numerous authors support the opinion that there is a real risk that low

quality products may be distributed in countries with poor production control. Bulgarian national legislation have 6 regulations with different legal force for provision of healthy and safe food supplements on the market. Currently, the European Community is concerned about food products, including FS, launched on the market because the citizens require reliable protection of their health. This concern provoked the European Parliament and the Council to undertake a number of legislative initiatives in the field of production and control of food products. It is necessary to set more precise quality and safety criteria in future strategies associated with those products.

9. Bakova D, Davcheva D, Mihaylova A, Petleshkova P, Dragusheva S, Tornyova B, Semerdjieva M, Study of the attitude of Bulgarian society towards surrogacy. *Biomedical Research ISSN 0970-938X*, 2018; 29(21): 3835-3841 **IF 2017 0.219**

Abstract. Aim: The dynamic and rapid development of medicine and assisted reproductive technology (ART), in particular, has opened up a whole new range of opportunities for infertile couples worldwide. In the recent years, the number of couples with reproductive problems and infertility in Bulgaria has sharply increased. For some of them surrogacy is the only chance for having a child. This calls for the introduction of new legislative, regulatory provisions concerning surrogacy agreements. This article provides an overview of the current attitudes in Bulgarian society as regards surrogate motherhood and its legalization.

Materials and methods: 256 respondents, aged from 20 to 61 y (mean 36.26 ± 0.55), of whom 48.7% men and 51.3% women, took part in the anonymous survey. The questions in the survey are related to ethical, legal and social aspects of surrogacy.

Results: The findings revealed a positive attitude towards surrogacy as a means of assisted reproduction, with 79.2% of all respondents sharing the opinion that it is mandatory to legalize and regularize surrogacy in Bulgaria.

Conclusions: These results are important because they demonstrate generally tolerant attitudes in Bulgarian society towards surrogacy. The introduction of adequate laws and regulations will significantly facilitate assisted reproduction, and will, to a great extent, curb the some inconvenience of surrogacy whilst ensuring the protection of the rights of both the surrogate mother and the commissioning couple.

10. Mihaylova A, Uchikov P, Uchikova E, Buttigieg G, A study of the pulmonary complications of preterm infants after prenatal corticosteroids prophylaxis in a major Bulgarian hospital. *Malta Medical Journal*, Vol. 31, Issue 03, p.17-23, 2019 **SJR 2018 0.106**

Abstract: An increasingly common problem in obstetrics and neonatology is premature birth. This problem is the cause of many health complications in premature neonates and is leading to neonatal mortality. These complications affect the whole body of premature babies, the respiratory system has the largest percentage due to lack of the period for intrauterine maturation of the lung. The purpose of this study is to analyze data on complications, and especially pulmonary complications that develop preterm infants, and to analyze the impact of premature corticosteroid prophylaxis.

11. Mihaylova A, Kasnakova P, Gueorguiev S, Petkova-Gueorguieva E, Peikova L, Cost analysis of neonates after prenatal corticosteroid prophylaxis of Respiratory Distress Syndrome. 2020, *Pharmacia* 67 (4):209-214 DOI 10.3897/pharmacia.67.e50458 **SJR 2019 0.209**

Abstract. Preterm birth is a vital global health-economic problem. Health disorders provoked by it generate a high neonatal mortality rate. Prenatal corticosteroid prevention aims to reduce postnatal complications in premature infants. This survey covered two basic baby groups: work group of 89 premature infants that had been subjected to prenatal corticosteroid prophylaxis and a control group of 78 premature babies without prenatal prevention. The analysis of the pharmacoeconomic aspects of prenatal corticosteroid prevention enabled the comparison of clinical and therapeutic results, treatment costs, therapeutic expenditures, shortterm therapeutic effect, benefits and sequences from premature infants' therapy. The analysis of clinical data obtained during this survey enabled the conclusion that when analyzing the combined effect of Dexamethasone prophylaxis, gestation week at birth and the age of the mother of premature infants with RDS, respiratory obstruction occurrence was mediated by the earlier gestation week at birth, older mother's age and, at this background, it was restricted to a certain extent by prenatal corticosteroid administration. Conclusions: Prenatal corticosteroids cause reduction of premature infants' treatment costs. The implementation of a smaller number of dexamethasone applications leads to smaller expenditures for premature infants' treatment and care compared to those that have more dexamethasone applications.

12. Kristina Kilova, **Anna Mihaylova**, Lili Peykova, Opportunities of information communication technologies for providing pharmaceutical care in the COVID-19 pandemic. *Pharmacia (nod neyam)* **SJR 2019 0.209**

Abstract. This article discusses the opportunities of information and communication technologies for providing pharmaceutical care in the context of the COVID-19 pandemic. The global COVID-19 pandemic has necessitated a reorientation of the concept of providing health care to large-scale implementation of information technologies to improve the quality of medical and pharmaceutical services for the population. It had a significant impact on pharmacy, which necessitated changes in the management of pharmaceutical care for patients. Rapid and urgent measures were taken by the pharmacists, who found themselves at the forefront. Telepharmacy has proven to be a successful solution in the fight against the virus in the conditions of physical distance. The introduction of modern information and communication technologies worldwide will create significant advantages for more efficient use of resources and management of pharmaceutical care.

Публикации в международни списания с импакт фактор по Global (GIF)

1. Пиева V, Koleva N, Hadzhieva B, Mihaylova A, Koleva P, Importance of way of eating, obesity and metabolic syndrome. *KNOWLEDGE International Journal, Scientific and Applicative papers*, 2015, Vol.10/1, p.453, ISSN 1857-92 **GIF (2015)1.322**

Abstract: Eating has become an obligation that we should accommodate in our daily lives. Very often people approach it unreasonably, ignoring what they cause to their organism. Having bad eating habits leads to more calorie intake which results in gaining weight. Along with the psychological problems, people who are overweight, nearly always suffer from one or more diseases. According to modern views the state of being overweight is a major symptom of metabolic syndrome. The accumulated scientific evidence shows the importance of the disorders in the functioning of adipose tissue, clock genes and the feedback that the center of appetite receives.

2. Mihaylova A, Uchicova E, Parahuleva N, Parahuleva M, Prevention of hyaline membrane disease (hmd) in Preterm infants, *World journal of pharmacy and pharmaceutical sciences*, Volume 5, Issue 4, 09-16. 2016, Review Article ISSN 2278 – 4357 **GIF 0.629**

ABSTRACT. Premature birth is the most common cause of neonatal mortality in developed countries (5, 13, 15, 16). Over 80% of all cases of death in the world are result of neonatology premature birth (6, 29). The complications which are result of preterm birth are significant socioeconomic problem and the hyaline membrane disease (HMD) is in the leading place. In the field of prenatal medicine and neonatology are applied preventive treatments in order to reduce the risk of death of preterm newborns. We indicate general trends striving to achieve the optimal solution to the issues related to the reduction of complications in premature neonates in the countries around the world.

3. Parahuleva N, Uchikova E, Orbecova M, Mihaylova A, Parahuleva M, The role of anti-mullerian hormone in the evaluation of the effectiveness of metformin hydrochloride therapy in polycystic ovarian syndrom, *World journal of pharmacy and pharmaceutical sciences*, Volume 5, Issue 4, 17-29. 2016, Research Article ISSN 2278 – 4357 **GIF 0.629**

ABSTRACT. Objectives: To evaluate the role of Anti-Mullerian hormone (AMH) in the evaluation of the effectiveness of short- (3 months) and long-term (6 months or more) Metformin hydrochloride therapy in women with polycystic ovarian syndrome (PCOS). **Material and methods:** Ninetyfive women between the age of 18 and 35, who were divided into two groups: a control group of 50 healthy women (n=50) and 45 women with polycystic ovarian syndrome(n=45) (PCOS), approximately at the age of 25,09 ±1.29 and BMI 27,21 ±0,79, were examined. Serum levels of AMH, LH, FSH, Tstestorenon, Androstendion, E2, Plasma glucose and IRI were examined. The individual values of HOMA-IRI and BMI were found out. Cases diagnosed with PCOS (n=45) were treated with Metformin hydrochloride. The dose during the treatment was 3x 850 mg, a total of 2550 mg daily dose for 6 months.

The index measurements were made before starting the intake of Metformin hydrochloride (T0), during the third month (T3) and the sixth month (T6) of the beginning of the treatment.

Results: A positive correlation between the serum values of AMH and Androstendion ($r=0,490$), Testosterone ($r=0,427$) and LH ($r= 0,431$) and a negative correlation between AMH, FSH ($r=-0,420$) and E2 ($r=-0,588$) were found. A significant difference between the initial level of AMH (T0-16,09ng/ml) and the level after the third month (T3-14,29ng/ml) $p>0,05$ was not found. The serum level of AMH – 3,5 ng/ml was decreased after the sixth month (T6-12,59ng/ml) compared to the first measurement (T0-16.09ng/ml) and there was a significant difference: $u=2,36$, $p<0,05$. The difference between the measurement of BMI at the beginning of the treatment and after its end was 2,5 kg/m². The difference was statistically significant: $u=2,21$, $p<0,05$. The serum levels of Testosterone (0,68 ng/ml), Androstendion (0,69 ng/ml), HOMA-index (0,92) and IRI (2,92 IU/L) were decreased.

Conclusion: This study showed the efficacy of serum AMH measurement as a prognostic biochemical marker in the follow up of metformin prolonged treatment of PCOS women.

4. Mihaylova A, Uchikov P, Staynova R, Study the opinion of pharmacy students on electronic learning. *Knowledge Management*, 2018 26(2):565-568, ISSN 1857-923X **GIF (2018)1.832**

Abstract: E-learning meets the new educational needs arising from the transition from industrial to information society and is associated with changes in all aspects of the educational process. The implementation of e-learning cannot be reduced only to the use of information and communication technologies in the current educational system and by no means only to bringing the existing educational content to electronic format. Moodle is a Learning Management System (LMS) designed to help teachers. LMS is built on the idea that online learning should focus on opportunities that would be useful for learners - communicating with their students, teachers should create content that meets their needs and desires. It is designed to support both teaching and learning.

The Moodle platform started in 2011 at the site of Medical College, Medical University of Plovdiv, Bulgaria the same year the lecture course for teachers was held. Students register and have access to the platform as early as in the first year of IT training. Today, there are over 1,000 active users and 22 electronic courses, the platform is growing, showing interest and relevance. In 2016, an e-learning course was created for the discipline of Medical Devices to support the exercises of student assistant pharmacists.

The aim of survey is to study the students' opinion of the need and benefits of e-learning for the discipline „Medical devices“. Second aim is to promote the e-learning platform among teachers and students from all universities. The study was conducted at the end of the winter semester of the 2017/2018 academic year, with 37 students from the 2-nd course, specialty Assistant Pharmacist at Medical College, Medical University of Plovdiv. The method of a semistructured interview with open questions is used and a statistical method.

The opinion of the students in open questions show more an evaluation of the training method than to evaluate the content of the particular course. They highlight the benefits of e-learning as a quick and convenient access to materials. The effective communication with the lecturer

is also highly appreciated. The students think that particular course makes it easier in finding related information through the links to the topics. The Electronic Course of discipline of Medical Devices helps them to visualize the details of individual topics.

Conclusions indicate that the on-line course in the platform makes it easier assimilation of knowledge and the links to main topics increase the opportunities for overall enrichment and the links pointing to the separate units increase the possibilities for complete enrichment. Students approve the electronic form of learning and communication.

5. Mihaylova A, Parahuleva N, Petkova-Gueorguieva E, S Gueorguiev, Epidemiology and risk factors for premature birth., *Knowledge - International Journal*, December 2018, Vol. 28.2, pp. 629-636 **GIF (2018)1.832**

Abstract: Premature birth is a significant medical, social and economic problem worldwide. In the 21st Century in developed countries, this problem accounts for over two thirds of neonatal deaths. In Bulgaria, statistics show that 10-12% of all pregnancies end with premature birth. Despite the number of studies in this field and the efforts made by obstetricians and gynecologists, the tendency to increase the number of preterm births has continued in the last decade. Its consequences are multiple complications who lead to a high neonatal mortality in the national and global world. Preterm birth is characterized by complex and vague etiology. A specific cause of premature birth can not be defined, but a set of risk factors is considered, divided into three main groups of etiological factors: socio-economic, medical-biological, and behavioral. Associated with preterm birth socio-economic and behavioral risk factors include poverty, unemployment, low education, poor prenatal care, harmful habits such as smoking, alcohol, drugs and other harmful substances, unhealthy family environment, severe and prolonged stress, excessive physical exercise (lifting weights), trauma (hits or violence), new pregnancies less than 6 months after previous birth, unhealthy diet and low mother BMI, etc. Essential for the preterm birth is also the medico - biological etiological factors. One of these is uterine enlargement, as the main reason for this may be the presence of: multiple pregnancies that occurred naturally or after using assisted reproductive technologies or polyhydramnios (increased amount of amniotic fluid). Other risk factors include: placenta previa, incorrect position of the fetus, myoma, uterine cervix malformations (including cerebrovascular insufficiency), preeclampsia, uterine contractions, acute infections during pregnancy (vaginal - chlamydia, trichomonas, mycoplasma , toxoplasmosis, bacterial vaginosis, viral rubella, cytomegalovirus, herpes, influenza, adenovirus infection, chronic diseases (hypertension, cardiovascular diseases, diseases of the lungs, liver or kidney anemia and etc.), genetic factors, previous premature birth, etc. These risk indicators are subject to detailed analysis in the work of a number of authors. To limit preterm births, a number of studies have been conducted to identify and identify the risk factors that are relevant to it. Identifying and recognizing their effects and impact leading to premature birth will significantly reduce the severe health, economic and social consequences as well as reduce the risk of neonatal death. In order to reduce the frequency of preterm births, adequate and specialized prenatal care is essential. They must be individually tailored for each particular case of pregnancy and take into account the complex of risk predispositions.

6. Mozakov T, Kasnakova P, Mihaylova A, Application of physical exercises for prevention and treatment of scoliosis. *Knowledge - International Journal*, 2019, Vol.30.4, pp.1001-1006 **GIF (2018)1.832**

Abstract: Scoliosis is a common illness. It affects 3-5 on 1000 people. Most often the deformity occurs between the age of 10 and 15 years and typically girls are more affected. Spine curves play an important role in the upright position of the body. These curves of the spine give its typical form of double curved spring, which helps for the absorption of the vertical stress. The word scoliosis means „bending“, which is a medical condition in which the spine axis is laterally distorted. This curvature may be in the form of the letter „S“ (double curvature) or in the form of the letter „C“ (single curvature). Scoliosis is a serious medico-social problem as it affects adolescents, have continued treatment and lead to severe deformations. They have a negative impact on physical and mental development. It is assumed that the disease is polyethiological. Nowadays life and immobilization create favorable prerequisites for the spreading of scoliosis. The signs and symptoms of scoliosis may include: uneven shoulders, uneven waist, uneven musculature on one side of the spine, pain in the back, shoulders and neck. The successful prevention and treatment of vertebral distortion depends on early detection, establishing the causes, type, extent and severity. Scoliosis treatment should start on time, be strictly individual and age-appropriate with the degree of distortion, and if there is a tendency of getting worse over time. In all cases rehabilitation is carried out using different methods and means. The aim of rehabilitation is to restore or maximize the improvement of proper body posture, thus contributing to the psychophysical development of children. This can be achieved through corrective gymnastics exercises to strengthen the paraspinal muscles; isometric exercises, analytical gymnastics; pull ups - by doing it properly, the muscles are tensioned symmetrically; push ups - depending on the position of the hands, different muscles are trained, as well as on the upright position of the whole body; soldier crawling; methods for relaxing the concave side; exercises for stretching the shortened muscles and manual techniques for restoring the mobility of the spine; „joint play“; massage; electrostimulation for hypotrophic muscles from the convex side; underwater gymnastics; tangentor; peloid therapy; balneotherapy; Different sports are also used - swimming, skiing, cycling, rowing and many other. To optimize the results of the treatment, an adequate and functional team is required that include orthopedists, kinesiologist and physical therapists. Only in this case the complex physiotherapeutic program will achieve optimal results in terms of functional recovery. Daily exercise leads to a reduction in the symptoms of the disease and straightening out the deformation.

7. Kasnakova P, Todorovska Y, Madzovska S, Mihaylova A, Health care in late complications of diabetes - neuropathic diabetic foot. *Knowledge International Journal*, 2019, Vol.30.4, pp.765-770 **GIF (2018)1.832**

Abstract: Diabetes is an endocrine disease characterized by hyperglycemia resulting from a disorder of insulin secretion or insulin effect. As one of the major social illnesses in recent

decades, it has grown into a real epidemic, with a tendency for a steady increase in diabetes sufferers. The frequency of diabetes mellitus in European countries varies between 3-10% and in Bulgaria diabetics are about 2-3% of the population in recent years. In our country, there is a negative trend in this disease control, it is the last place in Europe for quality treatment of diabetic patients. For optimal treatment, the efforts of healthcare professionals need to be focused on identifying the risk factors of the disease - overweight, genetics, high blood pressure, elevated levels of cholesterol and triglycerides, established cardiovascular disease with the aim to predict and reduce the risks of late complications (diabetic microangiopathy and macroangiopathy, nephropathy, neuropathy, retinopathy, diabetic foot). The treatment of neuropathic diabetic foot requires early diagnosis, prophylaxis and timely care at the stage of controlled risk. The comprehensive approach to treatment includes several key elements: glycemic control, control of the inflammatory process and foot ulcers, treatment of diabetic polyneuropathy, rehabilitation, proper diet, training and retraining of the patient. Prophylaxis is the best treatment for the neuropathic diabetic foot and requires combined efforts of endocrinologists, surgeons, pharmacists, healthcare professionals, rehabilitators, ergotherapists and our society as a whole. It is necessary to include physiotherapy and rehabilitation, adherence to a healthy and hygienic regime against the background of adequate medical treatment. Screening risk patients to treat the risk should be the first task in longterm treatment of diabetes and its complications.

8. Buttigieg GG, Mihaylova AA, Uchikova EH, A 50 year old myth: The relationship of intra-partum cardio-tocographic monitoring to cerebral palsy at clinical and medico-legal level. *Knowledge International Journal*, 2019, Vol.32.2, p.221-229 **GIF (2018)1.832**

Abstract: The birth of a child is normally surrounded with much joyful anticipation. The human psyche wants perfection in progeny. Anything short of this elicits a vast range of reactions, often may be confirmed and lead to crippling damages, possibly, at times in conjunction with separate medically punitive actions by the local medical council. Once a few test cases – and most Court cases fail – do result in substantial financial awards, the precedent is likely to set the ball rolling. Some members of the legal profession are posed to take up the gauntlet, be the plea, justifiable or not proportionate to the outcome. In the presence of a situation which is suspicious or suggestive of Cerebral Palsy (diagnosis is done within about 12 months from birth) benumbs and throws the unfortunate parents into an unexpected maelstrom of terrifying emotions and worries. The zenith of happiness cruelly metamorphoses into the nadir of despair. Cerebral Palsy (CP) is the commonest disorder of movement in children¹, and, generally speaking (with much local variation) it occurs in about 2.1 per 1,000 live births². It would be grossly abnormal for such parents, not to ask questions. These questions, increasingly being asked in a Court of Law where obstetric liability.

The purpose of this paper is to show a firm affirmation that the correct instruments of science be recognised, both clinically and medico-legally in cases of CP. It is an attack on those aspects of the juridical procedure, during which scientific facts fly in the face of contemporary science.

9. Аргилашки Д, Колева Н, Хаджиева Б, Михайлова А, New perspectives in tumor treatment through using nanoparticles. Нови перспективи в противотуморната терапия чрез използване на наночастици *Knowledge International Journal*, 2019, Vol.34.4, p.973-980 **GIF (2018)1.832**

Abstract: Oncological diseases are one of the leading reasons of mortality in the last decade, despite the continued development of modern diagnostics and timely follow-up treatment. Cancer is a disease, characterized by the uncontrolled growth and spread of abnormal cells in the body. Tumor diseases are the second leading cause of death worldwide. In addition to surgical treatment or radiation therapy, chemotherapy is one of the main methods of treatment for patients with cancer. It attacks fast-growing cancer cells using chemicals. Chemotherapy drugs (antimetabolites, alkylating agents, drugs that disrupt DNA synthesis, hormonal drugs, etc.) also attack other healthy cells, which is a major drawback of this method of treatment. Conventional dosage forms have a number of disadvantages - low bioavailability, limited efficacy, poor tissue distribution of the drug substance, side effects. Another major difficulty is the development of drug resistance, which renders therapy ineffective. For these reasons, it is necessary to seek new methods and approaches for the introduction of these medicinal substances. In this review, we present current studies exploring the implementation of controlled drug delivery strategies using nanoparticles in some of the most common oncologic diseases worldwide such as breast cancer, prostate cancer, lung and liver cancer, pancreas and the ovaries cancer. The use of nanoparticles as drug carriers or as diagnostic agents provides new perspectives in the treatment of these cancers. Nanoparticles can improve the water solubility of a number of drugs, resulting in improved bioavailability. The administration of nanoparticles can also use to target antitumor therapy, leading to treatment that is more appropriate on the one hand and reducing adverse reactions on the other. For these reasons, a more in-depth study of the use of nanoparticles in tumor diseases is needed in order to be able to more fully explore their advantages and disadvantages.

10. Kasnakova P, Mihaylova A, Traykova N, Petleshkova P, A study of the effect of a physiotherapeutical program with therapeutic fit balls in cases of chronic pain in the lumbar area. *Biomedical Research* 2019;30 (2): 238-240, DOI:10.4066/biomedicalresearch.30-19-018 **GIF 0.765**

Abstract. Objective: To investigate the efficiency of the combined application of a physiotherapeutical program with fit-ball exercises in cases of chronic pain in the lumbar area. Subjects and method: 38 out-patients aged 39 to 67, with chronic pain in the lumbar area (dating back from 5-7 years, with last exacerbation 5-6 weeks prior to the patients' inclusion in the study), participated in the study. The patients were divided into two groups-a test group in whose physiotherapy program fit-ball exercises were included, and a control group performing standard analytical exercise routines. The pain was reported in the Visual Analogue Scale of Pain Intensity (VASPI). Muscular testing was performed at the beginning and at the end of the physiotherapy program. The physiotherapy rehabilitation program was implemented once a day during the out-patients' procedures in medical centres, and three time a week-at home.

Results and discussion: At the end of the period of monitoring the condition of the patients, changes in the nature of the pain were reported in both groups: with initial levels of VASPI 3.50 for both groups, at the end of the treatment program the level reported by the test group was VASPI 2.00, and VASPI 3.00-by the control group. The continuous physiotherapy program including fit-balls leads to an improvement of the movements and a reduction of the dysfunction in cases of chronic pain in the lumbar area of the spine. The exercise programs using fit-balls performed at home enhance the functional capacity of the lumbar spine.

11. Dzhambazov K, Zheliazkov H, Stoyanov G, Rouev P, Traykova N, Mihaylova A, Petleshkova P, Markov S, Endonasal endoscopic sinus surgery with rhinobasis resection due to esthesioneuroblastoma: case report. *Biomedical Research* 2019; 30 (2): 248-252, DOI:10.4066/biomedicalresearch.30-19-024 **GIF 0.765**

Abstract. *Aim:* Esthesioneuroblastoma is a rare malignant neuroectodermal tumor that begins development of neuroepithelial cells of the olfactory membrane. Therefore the biology of the tumor, surgery is a method of choice. Endoscopic transnasal method with craniobasal resection is favorable alternative to more invasive surgical methods in a rigorous assessment of patients. Our aim is to describe the first case in the country operated endonasal with typical clinical and histopathological findings of olfactory neuroblastoma, and to discuss opportunities for radical surgery by endoscopic endonasal sinus surgery.

Material and methods: We present a patient with nasal obstruction, epistaxis, smell disturbance, headache and eye symptoms.

Results: Single step transnasal endoscopic resection with craniectomy, then undergoes postoperative radiotherapy is made on the patient. One year after surgery, no clinical, endoscopic and radiologic evidence of disease recurrence.

Conclusion: Esthesioneuroblastoma is a rare malignant tumor that untypical because its initial symptoms are often diagnosed at later stages. Early detection and timely performed treatment is important moment for the prognosis.

12. Kasnakova P, Mihaylova A, Petleshkova P, Traykova N, Tornyova B, Purposeful physical activity – basic strategy for the prophylaxis and treatment of diabetes and diabetic polyneuropathy. *Biomedical Research* 2019; 30 (2): 346-350, DOI:10.4066/biomedicalresearch.30-19-100 **GIF 0.765**

Abstract. Diabetes mellitus type 2 is a socially significant disease due to its high incidence rate on a global scale. The causes are rooted mainly in the changes in eating habits, the sedentary way of life, the low energy expenditure leading to obesity, the ageing population, as well as urbanization. Diabetes mellitus type 2 is a chronic, lifelong condition that requires continuous complex health care and the motivated involvement of a well-trained patient in order for the risk of long-term complications to be reduced. The first step in the treatment entails a change in the way of life. The most significant preconditions in the strategy for

prophylaxis and treatment of diabetes mellitus type 2 and the long-term complications include systematic medicamentous therapy in combination with a good control of the condition, physical rehabilitation and physiotherapy with an active exercise routine, strict control of the body weight and healthy eating habits through a balanced diet, as well as limiting any bad habits for the purpose of optimizing the patient's way of life. The aim of the primary and secondary physiotherapeutic prophylaxis is the strengthening of the organism achieved through adequate physical exercise, sports, heliotherapy and air procedures, aquatic therapy and balneotherapy. The medical and social impact of diabetic polyneuropathy and the effect of exercise on the condition call for basic physical rehabilitation routine designed to improve the quality of life of patients with diabetes mellitus.

13. Petleshkova P, Krasteva M, Gencheva D, Anesteva-Ivanova N, Grozdanova L, Parahuleva N, Mihaylova A, Poland syndrome: two cases of newborns with left-sided chest defect and dextrocardia. *Biomedical Research* 2019; 30 (2): 362-365, DOI:10.4066/biomedicalresearch.30-19-112 **GIF 0.765**

Abstract. Poland Syndrome is a rare condition evident at birth that includes a wide range of malformations of chest and arm. The exact cause of the syndrome is unknown, but genetic involvement and a vascular abnormality of the subclavian artery are suspected. We report two cases of right-sided Poland Syndrome with true dextrocardia, diagnosed in neonatal period. Our report is focused on illustrating the importance of physical diagnosis and confirming that the associated features vary greatly among the individuals.

14. Parahuleva N, Uchikova E, Mihaylova A, Petleshkova P, Parahuleva M S, Anti-Mullerian hormone in young female with different phenotypes of polycystic ovary syndrome without additional risk factors for atherosclerosis in Bulgarian population. *Biomedical Research* 2019; 30 (2): 357-361, DOI:10.4066/biomedicalresearch.30-19-111 **GIF 0.765**

Abstract. Objective: Anti-Mullerian hormone (AMH) was highlighted as a valid marker of ovarian dysfunction in women with anovulatory polycystic ovarian syndrome (PCOS) and was linked with cardiovascular conditions. This study was designed to determine the circulating AMH levels in different phenotypes of PCOS without additional risk factors for atherosclerosis in Bulgarian cohort.

Material and methods: A case-control single-center design was used. The levels of serum AMH were analyzed in non-pregnant, pre-menopausal women with PCOS, smoker or non-smoker, without other risk factors for atherosclerosis.

Results: Significant elevated levels of AMH were observed in all phenotypes of PCOS. However, there are no significant differences between smokers and non-smokers. Serum levels of androgens in PCOS were increased nearly twice. In phenotype C there was a positive correlation between AMH and the androgens. The estradiol levels decreased significantly in the cases with polycystic ovaries. The comparison of the ROC curves shows statistical

significant diagnostic efficacy of the variables to diagnose PCOS between AMH and testosterone ($Z=4.586$, $P<0.001$) as well as AMH and E2 ($Z=6.450$, $P<0.001$).

Conclusion: Thus, AMH will be a more reliable diagnostic marker of PCOS than the well-known nonconstant clinical and hormonal parameters in non-pregnant, pre-menopausal women with different phenotypes of PCOS, smokers and non-smokers, without additional risk factors for atherosclerosis in Bulgarian cohort.

15. Ivanova S, Mihaylova A, Petleshkova P, Ivanov K, Presence of undeclared caffeine in weight loss food supplements. *Biomedical Research* 2019;30 (3): 422-425, DOI:10.4066/biomedicalresearch.30-19-130 **GIF 0.765**

Abstract. Recent studies claim that weight loss supplements often contain pharmacoactive ingredients or undeclared drug substances with a potential health risk. This study is focused on food supplements in the category “weight loss” in which label caffeine was not declared. Analysed samples were purchased from dietary supplement stores, pharmacies and internet. In the screening were included only food

supplements which do not contain caffeine or herbal extracts which contain caffeine like guarana, kola nut, yerba mate etc. 30 samples were analysed by HPLC/UV detection. We found undeclared caffeine in 5 of the analysed samples. The presence of undeclared caffeine in food supplements for weight loss could lead to serious health consequences especially for consumers with cardiovascular diseases.

16. Shopova D, Mihaylova A, Petleshkova P, Bakova D, Study of dental specialists’ awareness of additive manufacturing in dental practice. *Biomedical Research* 2019; 30 (3): 410-412, DOI:10.4066/biomedicalresearch.30-19-104 **GIF 0.765**

Abstract. Introduction: Additive manufacturing is an innovative technology, a revolution in medical industry. Constructions made of various chemical materials; resins, polymers, metals etc. can be manufactured by 3D printing in dental practice.

Purpose: A study of the awareness of dental specialists on additive manufacturing (or 3D printing) and its application in dental practice.

Conclusion: The majority of participants in the study are informed of the application of additive manufacturing in dental practice. Age is a significant factor for awareness- participants aged up to 40 years old are significantly more informed of the potential of 3D printing in comparison with their older colleagues ($p=0.01$, $\chi^2=110.156$).

17. Ivanova S, Mihaylova A, Petleshkova P, Ivanov K, Yohimbine intake - health risks. Correlation between side effects and the quality of the yohimbine bark: AUHPLC/MS,

Abstract. After the intake of a yohimbine bark food supplement a thirty-eight-year old man declared serious complaints: headache, rapid heart rate, high blood pressure, cold sweating, rush, tremor. The patient took only 1 capsule per day every morning for two days. After the discontinuation of supplementation the symptoms disappeared. The purpose of the study was to determine the factors causing the described side effects. Series of analyses were performed: HPLC/MS and GC/MS. Yohimbine bark contains a number of different alkaloids. It was important to be established the content of the main alkaloid yohimbine because the content of yohimbine was not declared on the label. We also suspected the presence of undeclared sibutramine. The screening did not find presence of sibutramine but it was found that the total content of yohimbine in 1 capsule was 50 mg. 50 mg of yohimbine per 1 capsule is extremely high dose- the approved daily dose of yohimbine in medicinal product is up to 30 mg/person/day. We also established presence of α -yohimbine (ajmalicine) in high levels. We consider that the total content of yohimbine should be declared on the label of every food supplement which contains yohimbine bark, otherwise the customers would be exposed to risk.

18. Mihaylova A, Uchikov P, Uchikova E, Parahuleva N, Prevention of thrombophilia and the following pregnancy complications. *Knowledge - International Journal* 2020, Vol. 38.4, p.679-684. **GIF (2018)1.832**

Abstract: Thrombophilia, congenital or acquired, is a condition characterized by an increased tendency for thrombosis in circulation. Pregnant women with thrombophilia have a high risk of vascular thrombotic events during pregnancy and postpartum, as well as spontaneous fetal loss. Pregnancy predisposes to thrombotic events, especially in patients with a history of previous thrombosis, patients with co-morbidities, and older women. Women who have had a previous thrombotic incident are 3.5 times more likely to have thrombosis in pregnancy than non-pregnant women. 75-80% of pregnancy incidents are intravenous, but the risk of arterial thrombosis is also present. In recent years, with the advancement of genetics, many pregnant women have the potential to be tested for conditions that further increase the risk of thrombosis and thrombophilia, and thus be targeted for prophylactic treatment of possible early and late complications.

Antithrombotic therapy should be included in the diagnosis of thrombophilia. The use of antithrombotic drugs and low molecular weight heparins is relevant for the prevention of health status, as for the complications it causes.

Low molecular weight heparin may improve pregnancy outcomes in women with previous severe vascular complications of pregnancy, such as the early onset of intrauterine growth restriction and preeclampsia. The prevention and treatment with low-dose aspirin and low molecular weight heparin (LMWH) have proven effect for increasing live births rates in antiphospholipid syndrome. Their use in relation to inherited thrombophilia and pregnancy complications is less well established.

Prevention of complications of thrombophilia and especially early miscarriages and preeclampsia is one of the most important goals in maternal-fetal medicine. Current data in this direction are limited in both quantity and quality. Numerous studies support the beneficial effects of the use of low-dose aspirin (LDA) and low-molecular-weight heparin (LMWH), as major agents in the fight against thrombophilia and its complications.

Combining the results of multiple studies, it has been found that in women with thrombophilia and at high risk for preeclampsia, the combination of LDA + LMWH is more effective than LDA alone (relative risk, 0.54; 95% CI, 0.31 -0.92). These results may provoke new discussion, especially applied to the Bulgarian population with proven thrombophilia. As a socially significant and multifactorial disease, thrombophilia is of interest and challenge for medical research, both diagnostically and therapeutically.

19. **Anna Mihaylova**, Bozhidarka Hadzhieva, Career Prospects of Assistant Pharmacist Graduates of Plovdiv Medical University Bulgaria – In The Past and Present. *European Scientific Institute Proceeding*, ISBN 978-608-4642-73-2, ESI, 2020, p.26-32 **GIF 0.654**

Abstract. Future career prospects are important for every young person. In the present conditions of market competition and continuous growth of unemployment, the new legislative requirements in health care under EU Regulations, affect the decision of young people related to their choice of professional field. Requirements set by the labour market imply quick adaptation and orientation, and flexible implementation of the knowledge and skills acquired in education. High quality education of health professionals is a major factor in the development and effective functioning of the healthcare system, and the achievement of a high standard of healthcare. This study examines the career prospects of assistant pharmacists, graduates of the Medical College, Medical University of Plovdiv. A questionnaire survey was carried out among a random selection of 2011, 2012 and 2019 graduates from the Medical College, Medical University of Plovdiv, Bulgaria. A total of 70 graduates were covered by the study. The results show, in addition to career success on the labour market, the level of satisfaction with training, as well as the desire of graduates to improve their professional competence. A large percentage of assistant pharmacists have success on the labour market. The graduates of the Medical College, Medical University of Plovdiv have a professional development that is timely and adequate to their qualification. There is an objective need for competent teaching staff, update of the teaching resources as well as conducting postgraduate courses in line with the European standards.

20. Daniel Argilashki, **Anna Mihaylova**, Nina Koleva, Bozhidarka Hadzhieva, 3D - printed drugs - a brave new world in pharmaceutical manufacturing. *Knowledge - International Journal* 2020, Vol. 40.5, p.847-853. **GIF (2018)1.832**

Abstract: Nowadays, 3D printing is one of the fastest growing technology industries of art and science and expanding its application more and more. Today, additive manufacturing is used in the automobile, aerospace, food, agriculture, engineering, architecture and

construction, geographical information systems (3D printing of physical maps), as well as in medicine, pharmacy and bioengineering. 3D printing enables the development of new dosage forms, the modeling of tissues and organs, and the production of orphan drugs for small groups of patients. The relatively low cost of manufacturing multiple dose medicines is one of the major advantages of having a short batch of medicines.

In recent years, worldwide, the attention of health professionals has been focused on the so-called "Personalized medicine" whose application in pharmacy can be realized using 3D technologies. These technologies allow multiple doses to be combined into one dosage form that meets the specific needs of each individual patient. 3D tablet printing allows the drug to form more tightly at the right dose and higher-dosage drugs to be more easily absorbed and soluble in the body. 3D printing technology can be successfully researched to develop personalized medicines that could play a vital role in treating a variety of diseases and improving people's lives. In pharmacy, inkjet systems (3DP), extrusion printing methods or so-called deposition technology (FDM), stereolithography (SLA), selective laser sintering (SLS) and others are already being used. Although solid oral dosage forms are the most widely studied, 3D printing has also been used to create a transdermal drug delivery system as well as vaginal rings for controlled local delivery of progesterone.

The legal framework, as well as the one for setting the standard for 3D printing of medicines, require collaboration between broad scientific fields and enforce significant changes in the way that many centers and departments cooperate with different cultures, regulations, legal issues and focuses. The use of 3D technologies offers many new opportunities and perspectives in pharmaceutical manufacturing, but a number of legal and ethical standards may limit their application. For these reasons, a more in-depth study of the potential of 3D technologies in pharmacy is needed, an exploration of their benefits and the identification of their disadvantages.

Публикации в реферирани български и международни списания без импакт фактор

1. Димов Х, Михайлова А, Михайлова К, Проучване на профилактичното и терапевтично действие на продукта „Sanar“. *Science & Technologies Volume II; Number 1; 2012: Medecine*

Abstract. The herbal preparation SANAR obtained by alcoholic extract of immature nuts (Fructus Juglandis Immaturi) of walnuts Juglans Regia. It is known that different parts of the walnuts are widely used in folk medicine to strengthen the body's inflammatory and analgesic, gingivitis, inflammation of lymph nodes, a bacteriostatic effect on streptococci, staphylococci and chronic epidermofiti, styptic, fibrosing and others. Preparation SANAR is original, clean, nontoxic, easily applied, as in dental offices and at home. SANAR be very well received by patients in the application there are no side effects.

2. Михайлова А, Хаджиева Б, Колева Н, Колева П, Профилактичното и лечебно действие на „Ресвератрол“ при енотерапията. *Science & Technologies Volume II; Number 1; 2012: Medecine*

Abstract. Wine is one of the oldest medical staff of humanity, which is unfairly convicted in connection with the spread of alcoholism. With the large efforts in the recent decades of the world scientists in the filed of healthcare the good name of the ancient drink – wine is brought back thanks to the good effect of resveratrol on the human health and the discovery – enoterapy.

3. Mihaylova A, Dimov H, Mihaylova K, Application of the SANAR preparation in complex therapy of periodontal diseases, *Медицински преглед Сестринско дело / 2017 Vol.49 No.2 pp.32-35 ref.6*

Резюме. Целта на представеното проучване е да се установят свойствата на препарата SANAR за подобряване на някои пародонтални заболявания като: катарални и пародонтални хронични гингивити, начални форми на пародонтоза, за дренаж на абцеси и др., при приложението му в комплексната терапия на тези заболявания. Наблюдения са проведени при 23-ма пациенти, дали доброволно съгласието си за участие, след подробното им запознаване със състава и действието на препарата. Пробантите – 13 жени и 10 мъже, на възраст от 18 до 58 години, са без общи заболявания, като разпределението им според поставената диагноза е: с катарален гингивит – 9; с начална форма на пародонтоза – 11; с хеморагична пародонтоза I степен – 3-ма, а периодът на проследяване е до 7 дни след включването в проучването, като всички участници попълват анкетна карта в края на изследването. Анкетните карти съдържат: лични данни, анамнестични данни за давността на заболяването и характера на оплакванията, зъбен и рентгенов статус за поставяне на диагнозата. Данните са обработени статистически. Посочените в настоящото изследване данни при 23-ма пациенти показват, че SANAR е с определено изразен противовъзпалителен и антисептичен ефект – бързо намалява едема на папилите, намалява ексудата и кървенето, води до бързо фиброзиране и нормализиране на гингивата. Preparatът SANAR е оригинален, екологично чист, нетоксичен, прилага се лесно както в денталните кабинети, така и в домашни условия. SANAR се приема много добре от пациентите, при приложението не са наблюдавани странични ефекти.

4. Димов Х, Михайлова А, Колева П, , Проучване на профилактичното и терапевтично действие на продукта „Provital“. *Годишник Съюз на учените Благоевград, Том 6, част 2, 2012 г.*

Abstract: Provital was obtained by alcoholic extract of the seeds and roots of *Urtica P* Ни I if era L. and contains a wide range of biologically active substances.

The survey showed that prolonged treatment with Provital haven't cellular and organ toxicity, and good metabolic and best-regulated metabolic effect allows for a wide range of treatment in persons with problems in sexual activity with marked neuro-mental and physical overload,

depressive syndrome, with reduced immunity, in a period of convalescence with atherogenic risk and accelerated aging, premenopausal and menopause in young women with dysmenorrhea and young men with sexual problems and others.

5. Колева П, Колева Н, Хаджиева Б, Михайлова А, Хранителни добавки – надеждни източници за информиране на потребителя. *Science & Technologies Volume III; Number 1; 2013: Medecine*,

Abstract. In recent years in Bulgaria we have seen growth in the sale of supplements. According to some estimates, the market potential of supplements is comparable to the market for medicines and is approaching 1 billion levs. The increased interest and growing consumer confidence in herbal products - supplements and extracts, leads to the steady increase for their global sales. In the U.S. and Europe, herbal medicines represent a major share of the pharmaceutical market and are included in the regular medical practice. On the background of the global economic crisis, the growth in the production of supplements surpasses other economic sectors. Pharmacys (pharmacists), doctors, advertisement, the internet, magazines and etc, are informing consumers about the diversity and route of administration of nutritional supplements. This research aims to present the most reliable sources of information on the selection of effective, high quality and safe supplements.

6. Колева П, Михайлова А, Хаджиева Б, Колева Н, Необходимостта от фармацевтичната грижа относно консултиране на пациента за приема на хранителни добавки. *Science & Technologies Volume VI; Number 1; 2014:Medecine*,

Abstract. The main aim of pharmaceutical consultation is to build a relationship of trust with the client, to help the patient to control and adapt to their treatment and to prevent or reduce potential side effects and adverse drug reactions. In a number of diseases that do not pose an immediate danger to the general condition of the patient as a secondary therapy are appointed and supplements. The patient must take responsibility for their own treatment to be informed for all information about the product and the nutritional supplement, which will take and realize that they are not a commodity because they contain substances with biological activity. The patient should be aware that there are no safe medicines and food supplements, they may interact in the body with medicines and food, that can lead to toxicities or side effects that potentiate or reduce the therapeutic effect of the drug. With this survey we present the need for consulting the patients about taking dietary supplements as a secondary therapy or alone.

7. Б Хаджиева, Михайлова А, Колева П, Колева Н, Проект „Студентски практики“ – мотивация и възможности за развитие на професионални умения у студентите помощник фармацевти. *Управление и образование Том XI (5) 2015*

Abstract: The aim is to study the opinion of the students on their participation in the project "Students' practices and the benefits of its passing". There are analyzed "Self-esteem and evaluation of the training" of 88 students from specialty "pharmacist assistant" at MU Plovdiv, Medical College. In this study are presented processed data from reports made by

students participating, after completion of practice. The analysis shows high motivation among the students. Also acquired new knowledge and skills related to the specialty training as well as development of skills and abilities necessary for the realization of a specific work environment.

8. Каснакова П, Б. Торнъова, Михайлова А, Станкова А, Стимулиране на имунния потенциал при деца в предучилищна възраст чрез ултравиолетова профилактика. *Сп. Здравна политика и мениджмънт*, 2019, том 19, брой 2, стр. 87-90

Резюме: Целта на настоящето проучване е да се проследи ефекта от приложената ултравиолетова профилактика при деца в предучилищна възраст и да се интегрират възможностите на физикалните комплекси в целогодишна програма за стимулиране на имунитета. Материал и методи: Обект на проучването са 53 деца на възраст между 5 и 6 години от детска градина „Здравец“ Пловдив. За физикална профилактика приложихме ултравиолетово облъчване с изкуствени източници за групови облъчвания при спектрално разпределение на енергията в диапазон 577 до 248 нм през есенно-зимния сезон на 2018 г. Със закалителна цел в групова методика облъчихме децата в суберитемни покачващи се дози. Курсът на физиопрофилактика се проведе чрез 15 процедури от 1А до 4 биодози. Резултати: В основата на закаляването посредством курс на ултравиолетово облъчване се установи 19,5% физиосанация, благоприятно повлияване на реактивността на организма и имуногенезата.

9. Хаджиева Б, Михайлова А, Колева Н, Аргилашки Д, Бакова Д, Родителят, като фактор при изграждането на детския имунитет., *Сборник доклади, Изд. център при МУ Плевен*, 2019, стр.124-130, ISBN 978-954-756-232-5

Summary A properly functioning immune system deals with organisms producing diseases such as bacteria, viruses, fungi and parasites. Children from different age groups in contact with these pathogens, but exposure does not mean that child will become ill. A healthy immune system provides the child with natural protection against disease, and a child with a weakened immune system is vulnerable or more susceptible to viruses or more diseases that a serious. The study presents the possibilities of modern medicine and alternative methods of prevention and stimulation of immunity.

Particularly important for each child is the systematic conduct of procedures improving overall health. Various substances called immune modulators also accomplish Immunomodulation In general, immune modulators are various biologically active substances (BAS) that, alone or in combination with other BAS, have a beneficial effect on the functions of organs and systems, including the immune system.

The survey shows that parents are aware of the factors contributing to healthy immunity, namely proper diet and sleep, the need of air and movement, rational use of medicines and antibiotics. They are positive about the use of natural immune stimulants, medicinal plants, and other alternative therapies to stimulate childhood immunity.

10. Petkova EG, Papanov SI, Mihaylova AA, Ivanov IG, Individual work and the attitude of students. *International scientific periodical journal "THE UNITY OF SCIENCE"*, Vol. Dec2019/Jan2020, p.55-58

Abstract. Individual extra studying can be considered as part of the learning process. In the didactic category, despite the contradiction of power, it is known without any judicial experience. This paper is to confirm that the democratic approach of the studying process is directly correlated to the individual work of the student.

One way to improve the quality of education is to regulate the student's individual preparation:

— the state educational requirements;

— quality system]

— the idea of the individual preparation is described in LHE (The Law for Higher Education).

PURPOSE: To consider some motives, factors and processes of the individual preparation.

RESEARCH METHODS applied:

— System approach and critical analysis of available scientific periodicals;

— Mathematical-statistical methods;

— Interview poll method.

— In the study are included students from different majors and courses to determine the extent of the experience gained during

the training, i.e. availability of abits for personal development.

11. Buttigieg GG, Micallef Stafrace K, Mavrov M, Mihaylova A, Uchikova E, Medico-legal and obstetric challenges of recent demographic increases in Malta. *Scripta Scientifica Medica*, 2019;51 (2)7-14

Abstract. The southern Mediterranean island of Malta, strategically located between North Africa and Europe and a full member of the European Union, offers an excellent European standard obstetric service. Yet, this obstetric service, like all other medical disciplines, is undergoing a severe evolutionary challenge imposed by rapid demographic shifts. It also finds itself without significant and relevant medico-legal legislation which is likely to lead to serious acute needs at the interface between the rapidly changing nature and number of foreigners residing in Malta and their medical needs, especially in the obstetric sector. The article looks at several factors, which argue for the immediate need of implementation of such legislation. One aspect of crucial importance is the demographic fact of rapidly changing profile of the patients making use of the Maltese Obstetric Service (MOS). This is the result of an influx of both EU nationals as well as irregular migrants, mostly of sub-Saharan origin. Both provide their own form of challenges to the MOS. In both, albeit more likely in the case of EU nationals, these challenges may easily find expression and resolution in eventual medico-legal action.

Публикации в сборници

1. Пъдева М, Михайлова А, Колева П, SANA PER VINO – лечебният ефект на виното. *Сборник доклади Юбилейна научна сесия „70 години Медицински колеж Пловдив – традиции и бъдеще“ ISBN 978-954-9549-68-3 с.122-126*

Резюме: Виното е едно от най-старите медицински средства на човечеството, което е несправедливо осъдено във връзка с разпространението на алкохолизма. С огромните усилия на световни учени в областта на здравеопазването, през последните десетилетия се върна доброто име на древната напитка – виното с благотворното му действие върху човешкия организъм.

2. Дуев В, Колева П, Михайлова А, Етерични масла. *Сборник доклади Юбилейна научна сесия „70 години Медицински колеж Пловдив – традиции и бъдеще“ ISBN 978-954-9549-68-3 с.114-118*

Резюме: Известно е, че някои етеричните масла имат антивирусни, антибактериални, а други антиоксидантни, седативни или стимулиращи имунната система свойства.

Това определя и сферите на приложение: във фармацевтичната, хранително-вкусовата, парфюмерийната промишленост и др.

Тук представяме част от етеричните масла, способите им за приложение, тяхното извличане и действие.

3. Михайлова А, Петкова-Георгиева Е, Колева П, Стайнова Р, Анализ на разходите за терапия при недоносени деца с дихателни усложнения, *Сборник научни съобщения Наука и младост –МУ Пловдив, р.169-175, 2018 г. ISSN 1314-9229*

Резюме: Преждевременното раждане е социално-икономически проблем, който седи пред здравеопазната общност. То е най-честата причина за неонатална смъртност в развитите страни, представлява 80% от всички смъртни случаи в света в неонатологията (над 1,1 милиона) и повече от 30% от тези в Европа. Хиалинно-мембранната билест (ХМБ) и Респираторния дистрес синдром (РДС) са дихателни усложнения у недоносените деца, следствие от преждевременното раждане. РДС е най-честата причина, водеща до смърт сред недоносените новородени. Хиалинно мембранната болест засяга 1% от недоносените новородени в света и е главната причина, водеща до смърт при тази група пациенти. Анализирани на фармако-икономическите аспекти на преждевременното раждане дават възможност за сравнение на терапевтичните резултати, стойността на лечението, разходите за терапия, краткосрочния терапевтичен ефект, оценка на ползите и последиците от терапията при преждевременно родените деца с ХМБ и други форми на РДС. Това може да доведе до скъсяване на престоя им в неонатологичните и интензивни отделения, както и до нетни спестявания в разходите за спасен живот на новородено, което има отношение към

намаляване на директните разходи за лекарствена терапия и намаляване на общите разходи за здравеопазването.

4. Стоянова В, Стайнова Р, Петкова-Георгиева Е, Михайлова А, Безопасна и рационална лекарствена употреба по време на бременност: роля на фармацевта, *Сборник научни съобщения Наука и младост –МУ Пловдив, р.86-90, 2018 г. ISSN 1314-9229*

Резюме: Бременността е физиологично състояние, при което настъпват редица промени в тялото на жената, свързани с обезпечаване развитието и износването на плода. Промените в хормоналните нива и протичането на метаболитните процеси в женския организъм водят до промяна в биотрансформацията и ефектите на много лекарства, което крие рис-кове както за майката, така и за плода.

Лекарствената употреба по време на бременност е широко разпространена и непрекъснато се увеличава. До 80% от всички жени използват лекарства по време на бременност. Повечето бременни приемат поне един лекарствен продукт (ЛП).

Жените често биват съветвани от различни източници (медицински специалисти, Интернет, семейство и приятели) против употребата на лекарства по време на бременност и лактация, освен когато ползите от лечението не са по-големи от рисковете. Тенденцията за намаляване на лекарствената употреба по време на бременност е неоспорима, но възникването на остри състояния (напр. инфекция на пикочните пътища), наличието на хронични заболявания (напр. захарен диабет, бронхиална астма, артериална хипертония и др.), както и появата на нови медицински състояния, свързани с бременността (напр. гестационен захарен диабет, гадене и повръщане), налага приема на лекарства с цел оптимално лечение и минимизиране на бъдещи усложнения .

Фармацевтът много често е първият медицински специалист, от когото се очаква да дава съвети относно употребата на ЛП по време на бременност. Тъй като 50% от бременностите са непланирани, жената често открива, че е бременна докато вече приема ЛП и посещава аптеката като едно достъпно здравно заведение, където може да получи съвет и да провери дали не е навредила на бебето си. Бременните жени имат въпроси, свързани с употребата на ЛП, и често заявяват, че фармацевтът е надежден източник на информация. Фармацевтите също така могат да гарантират, че бременните жени не приемат ЛП, които са противопоказани по време на бременност.

5. Papanov S, Mihaylova A, Petkova E, Recording who we lie - myself or the other. *Conference proceedings, SPO „Profesional Sciense“, Lulu Inc., 2018, p.59 – 67, ISBN 978-0-359-14499-0*

Abstract. Assessment and control of knowledge are an integral part of the education process. For learners, there is a tense moment of preparation and presentation of what has been learned. It seems as if the time of the classical pistols has passed and the age of modern

technology has come. The present study is a study of the motives for copying and a complex analysis of this activity. The relative share of students who transcribed is often 8.82%, and that of students who do not transcribe is 86.76%. Copy:

- is a form of corrupt behavior that can have many negative consequences;
- suggests a superficial attitude of students to the learning process.

6. Килова К, Михайлова А, Ганчев Г, Приложение на информационните и комуникационни технологии във фармацевтичните грижи (обзор). *Сборник доклади на СУБ Пловдив (под печат)*

Abstract. According to the eHealth concept, by 2022 the development of information and communication technologies must become an objective reality, which is expected to provide comprehensive and reliable medical information and at the same time significantly improve the quality of medical care and the provision of pharmaceutical care for the population. The digital transformation of healthcare and society gives opportunities to improve pharmaceutical activities towards innovative forms of development, which will increase the access to high-quality professional care for all those in need. This article shows some modern aspects in the application of information and communication technologies in the development of pharmaceutical care. The implementation and effective management of innovative information and communication technologies in the activity of pharmacists will provide significant benefits both for achieving goals for improving the quality of drug supply and for even more efficient use of all types of resources.

7. Михайлова А, Kasnakova P, Hadzhieva B, Argilashki D, Stress in the work of the pharmacist in a COVID 19 pandemic. *Сборник доклади на СУБ Пловдив (под печат)*

Abstract: The WHO and public health authorities around the world are taking action to limit the spread of COVID-19. This period created stress, insecurity, fear and panic in society. In March, a state of emergency was declared in Bulgaria in order to limit and slow down the spread of COVID-19. Authorities have introduced a number of measures and called for people to work from home and stay at home whenever possible. Pharmacists worldwide continue their mission amid the pandemic and the state of emergency. They are fulfilling their official duty on the first line to deal with the growing number of patients coming to pharmacies. Pharmacists may experience additional stressors during a pandemic, such as working with at-risk patients, insufficient personal protective equipment, the need for constant vigilance, increased working hours, the need for constant training and changes in rules and requirements of MH and NHIF, reduced social support, insufficient personal capacity for self-care, insufficient medical information about the long-term effects of the infection, fear of infecting the family and loved ones. During a pandemic, recognizing the symptoms of stress is necessary in order to take steps to build resilience and deal with the crisis. Strategies need to be developed to reduce fear and anxiety among front-line workers by providing clear, concise and accurate information on COVID-19, including how to access assistance when needed.

Издадени учебни помагала:

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