GDAŃSKI UNIWERSYTET MEDYCZNY

MATERIAŁY POKONFERENCYJNE

CYKL KONFERENCJI NAUKOWYCH
INTERDYSCYPLINARNE SPOJRZENIE NA NAUKI O ZDROWIU
PAMIĘCI PROFESORA PIOTRA LASSA

IV NAUKOWA KONFERENCJA WYDZIAŁU NAUK O ZDROWIU Z INSTYTUTEM MEDYCYNY MORSKIEJ I TROPIKALNEJ GDAŃSKIEGO UNIWERSYTETU MEDYCZNEGO

Gdańsk, 13-15 czerwca 2024 r.

ORGANIZATOR

ZAKŁAD IMMUNOBIOLOGII I MIKROBIOLOGII ŚRODOWISKA
WYDZIAŁ NAUK O ZDROWIU Z INSTYTUTEM MEDYCYNY MORSKIEJ I TROPIKALNEJ W GDYNI
GDAŃSKI UNIWERSYTET MEDYCZNY

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WSPARCIE FINANSOWE

Konferencja dofinansowana ze środków budżetu państwa w ramach programu Ministra Edukacji i Nauki pod nazwą „Doskonała Nauka" nr projektu DNK/SP/548321/2022; kwota dofinansowania 314 300 zł; całkowita wartość projektu 351 400 – Kierownik projektu: dr inż. Marta Jakulak

Ministerstwo
Edukacji i Nauki

Doskonała
Nauka

ISBN 978-83-67147-44-6

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CONGENITAL CYTOMEGALOVIRUS INFECTION

WRODZONE ZAKAŻENIE WIRUSEM CYTOMEGALII

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Congenital cytomegalovirus infection is one of the most common congenital infections. It may cause sensorineural hearing loss, microcephaly, intrauterine fetal growth restriction, deafness, intracranial calcifications, retinitis, or intellectual disability. 0.3-2.5% of live born babies are infected, of which about 10% show symptoms.

Probably 90% of women have had contact with the virus in their lives through urine, saliva, blood, breast milk or after organ transplantation from an infected person. Most immunocompetent adults are infected asymptomatically, so they usually learn about it only during pregnancy, when they are tested for antibodies to cytomegalovirus in the IgG and IgM classes. Both primary infection and reactivation of a previous infection are dangerous for the fetus.

Currently, the only way to avoid infection is to follow hygiene rules, especially important for previously seronegative pregnant women.

In newborns presenting symptoms, or those whose mothers had a confirmed infection during pregnancy, a PCR test should be performed to detect copies of cytomegalovirus in the urine and, if necessary, treatment should be started in the first month of life. in addition to pharmacological treatment with valganciclovir, children require periodic audiological, ophthalmological and neurodevelopmental check-ups.

Treatment of pregnant women with confirmed cytomegalovirus infection with valaciclovir plays important role in prevention, as it reduces the risk of infection of the fetus and the occurrence of possible symptoms of the disease.

Congenital cytomegalovirus infection is a significant clinical problem that requires medical attention both in terms of primary prevention and long-term treatment and follow-up of sick children.

USEFULNESS OF POSITRON EMISSION TOMOGRAPHY USING 18F-FLUORODEOXYGLUCOSE (18F-FDG-PET-CT) IN MONITORING OF THE TREATMENT OF PATIENTS WITH ALVEOLAR ECHINOCOCCOSIS

ZASTOSOWANIE POZYTONOWEJ TOMOGRAFII EMISYJNEJ Z UŻYCIEM 18F-FLUORODEOKSYGLUKOZY (18F-FDG-PET-CT) W MONITOROWANIU LECZENIA PACJENTÓW Z BĄBLOWICĄ WIELOJAMOWĄ

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Alveolar echinococcosis (AE) is caused by the larval form of the tapeworm *Echinococcus multilocularis*. The most frequent site of primary parasitic lesion is the liver. in some cases, at the time of diagnosis, extrahepatic lesions are also detected. Patients in such an advanced stage of the disease are deprived of the opportunity of optimal treatment, which is radical surgery combined with temporary pharmacological treatment. Positron emission tomography using 18F-fluorodeoxyglucose (18F-FDG-PET-CT) by assessment of the metabolic activity of parasitic lesions indirectly helps to differentiate between active and inactive lesions. 18F-FDG-PET-CT is used in the staging of this parasitic disease and helps to determine the possibility of carrying out radical surgical treatment at the time of diagnosis. It is also useful in making decisions about the termination of the treatment in a group of patients who have undergone both radical surgery and those who have not undergone surgical treatment. The proposed alternative test for 18F-FDG-PET-CT is 18F-FDG-PET-MRI. It is more expensive, but it does not have X-rays, which argues for its use in a group of patients who do not qualify for radical surgical treatment and require frequent examinations and in children.

ACANTHAMOEBA KERATITIS – A LITTLE-KNOWN DISEASE OF INCREASING IMPORTANCE, A DIAGNOSTIC AND CLINICAL CHALLENGE

AKANTAMEBOWE ZAPALENIE ROGÓWKI – MAŁO ZNANA CHOROBA O WZRASTAJĄCYM ZNACZENIU, WYZWANIE DIAGNOSTYCZNE I KLINICZNE

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Acanthamoeba keratitis (AK) is still little known, the vision-threating corneal disease, which, in cases of late diagnosis and incorrect treatment, can result in loss of vision. The disease is cosmopolitan, and the number of cases is increasing worldwide.

The etiological factor of AK are amphizoic ameobae of the genus *Acanthamoeba* inhabiting both the natural environment: all kinds of water reservoirs, soil, dust, and man-made environment: municipal sewage systems, tap water, fountains, chlorinated swimming pools, as well as the widely understood environment in health care facilities (surfaces of equipment, surgical instruments, etc.).

The largest risk group are people wearing contact lenses (about 85% of patients), however, it should be remembered that the development of AK is favored by all kinds of corneal damages.

The earliest symptoms of AK are: redness, photophobia, excessive tearing, and progressive impairment of visual acuity; usually involving one eye. If left untreated, the invasion can spread to the entire cornea: ring abscess appears (in about 50% of patients), corneal ulceration and scarring which may lead to perforation.

As the disease is little known and many symptoms are non-specific, misdiagnoses often occur, resulting in the implementation of inappropriate and therefore ineffective treatment.

Early diagnosis of the pathogen is a prerequisite for effective treatment of AK. Diagnostics includes non-invasive in vivo methods: slit lamp and confocal microscopy, followed by corneal scraping examination in vitro to confirm the diagnosis (directly using a light microscope and culture of amoebas on an artificial medium). Both direct scrapings and cultured amoebas can be tested by molecular methods for accurate identification (different PCR variants and sequencing of the resulting PCR product).

The condition for effective diagnostics is good cooperation between an experienced ophthalmologist and a properly prepared diagnostic laboratory.

ODWIEDZINY RODZIN PACJENTÓW PRZEBYWAJĄCYCH NA ODDZIALE INTENSYWNEJ TERAPII – BADANIE PILOTAŻOWE

VISITS TO FAMILIES OF PATIENTS IN THE INTENSIVE CARE UNIT – PILOT STUDY

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Wstęp: Odwiedziny na oddziale intensywnej terapii (OIT) są ważną częścią opieki nad pacjentem. Wpływają zarówno na dobrostan psychiczny pacjenta, jak i dobrostan jego rodziny. Badania wskazują, że obecność rodziny może zapewnić wsparcie emocjonalne, zmniejszyć niepokój i przyspieszyć powrót pacjentów do zdrowia. Ponadto zaangażowanie rodziny w opiekę może poprawić komunikację między personelem medycznym a rodzinami, prowadząc do lepszego podejmowania decyzji i większej satysfakcji z opieki. Niemniej jednak istnieją wyzwania, takie jak ryzyko infekcji, stres emocjonalny dla odwiedzających i kwestie logistyczne związane z utrzymaniem odpowiednich warunków zarówno dla pacjentów, jak i personelu medycznego. Kluczowe znaczenie ma wdrożenie ustrukturyzowanych zasad odwiedzin, które równoważą potrzeby opieki nad pacjentem i zaangażowanie rodziny.

Metody: Dokonano oceny czasu odwiedzin na 488 oddziałach intensywnej terapii w Polsce na podstawie informacji dostępnych na stronach internetowych szpitali oraz raportu narodowego funduszu zdrowia.

Wyniki: Jedynie 2% oddziałów intensywnej terapii podaje informację o odwiedzinach na stronie internetowej szpitala, z czego najczęściej są to szpitale I stopnia referencyjności. Mediana czasu odwiedzin to 1,5 godziny.

Wnioski: Przyszłe badania powinny koncentrować się na optymalizacji zasad odwiedzin w celu poprawy wyników leczenia pacjentów i zadowolenia rodzin, przy jednoczesnym zapewnieniu bezpieczeństwa i wydajności na oddziale intensywnej terapii. Elastyczne zasady dotyczące wizyt mogłyby poprawić ogólne bezpieczeństwo i komunikację pacjentów, a także poziom zadowolenia rodziny i członków personelu. Nieograniczone wizyty pozwoliłyby na lepsze zrozumienie pacjenta, usprawniając opiekę skoncentrowaną na pacjencie i rodzinie.

ZACHOWANIA ZDROWOTNE PACJENTÓW Z WYŁONIONĄ STOMIĄ JELITOWĄ

HEALTH BEHAVIORS OF PATIENTS WITH STOMA

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Wstęp: Stomia jelitowa to rodzaj połączenia światła jelita ze światem zewnętrznym na powłokach brzusznych. Najczęściej jest wytwarzana w sytuacjach, gdy konieczne jest stworzenie nowej drogi wydalania, różnej od naturalnej. Zachowania zdrowotne pacjentów z wyłonioną stomią jelitową odgrywają kluczową rolę w ich codziennym życiu, a są one determinowane przez różnorodne czynniki społeczne, takie jak kultura, środowisko oraz doświadczenia życiowe.

Celem pracy była ocena zachowań zdrowotnych osób z wyłonioną stomią jelitową, ze szczególnym uwzględnieniem oceny znaczenia w podejmowanych zachowaniach zdrowotnych czynników społeczno-demograficznych, rodzaju wyłonionej stomii oraz dostępności do pielęgniarki stomijnej.

Materiał i metody: Badaniem objęto 103 osoby w okresie od marca do czerwca 2023 roku, w tym 74 kobiety i 29 mężczyzn. Największą liczbę stanowili pacjenci powyżej 50. roku życia, ze średnim wykształceniem, z wyłonioną ileostomią w okresie krótszym niż rok od zabiegu. Mieszkańcy wsi oraz dużych miast stanowili największą grupę wśród badanych. Do przeprowadzenia badania użyto metody sondażu diagnostycznego, a narzędziami badawczymi były Inwentarz Zachowań Zdrowotnych IZZ według Juczyńskiego oraz autorska ankieta.

Wnioski: Zachowania zdrowotne pacjentów kształtują się na przeciętnym poziomie.

Osoby starsze wykazują większe zaangażowanie w zachowania zdrowotne.

Pozostałe czynniki społeczno-demograficzne nie mają istotnego znaczenia w kształtowaniu zachowań zdrowotnych.

Rodzaj stomii nie różnicuje zachowań zdrowotnych.

Osoby zamieszkujące na wsi mają ograniczony dostęp do świadczeń pielęgniarki stomijnej.

MICROBIOME, DIET AND AUTOIMMUNE DISEASE

MIKROBIOM, DIETA I CHOROBY AUTOIMMUNOLOGICZNE

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Autoimmune diseases (AID) share a common pathogenesis including dysregulation of the immune system and the inability to distinguish self from foreign antigens. It is currently believed that dysregulation of the is is caused by environmental as well as genetic factors.

For several years, much attention has been paid to the role of the intestinal microbiome, which serves as an intermediary between some effectors of the external environment and the IS. However, in the presence of disturbed intestinal microbiota – dysbiosis, the immune system may be mistakenly directed to proinflammatory pathways, which initiates autoimmune processes.

New evidence indicates the role of the intestinal microbiome in selected AID. This may justify the need to manipulate the intestinal microbiome for therapeutic or even preventive purposes, respectively, in patients with diagnosed AID or predisposed to their occurrence.

The relationship between the gut microbiota, diet and the occurrence of AID requires the work of multidisciplinary teams to develop new therapeutic approaches that take into account individual patient differences.

CIDER VINEGAR BASED ON HERBS AND GARLIC (THE SO-CALLED VINEGAR OF THE SEVEN THIEVES) AS A SOURCE OF ANTIOXIDANTS IN THE DIET

OCET CYDROWY NA BAZIE ZIÓŁ I CZOSNKU (TZW. OCET SIEDMIU ZŁODZIEI) JAKO ŹRÓDŁO ANTYOKSYDANTÓW W DIECIE

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Introduction: It is well known that herbs and garlic have many health-promoting properties. Cider vinegar is a rich source of antioxidants. It belongs to the group of "live" vinegars, i.e. produced naturally from fruit, during the fermentation. These vinegars are marked as unpasteurized, cloudy and additionally characterized by the presence of live resistant cultures.

Aim of the study: The aim of this study was to examine the content of polyphenols and flavonoids in the Vinegar of Seven Thieves, as well as to measure its antioxidant activity.

Material and methods: The material in this study was commercial Seven Thieves live Vinegar. The determination of the total polyphenol content was performed using the Folin–Ciocalteu reagent. The determination of the total flavonoid content was performed according to the methods of Pękal, Pyrzyńska and Hu. A spectrophotometric method using the ABTS reagent was used to measure the antioxidant capacity. All assays were performed in triplicate, in three separate experiments, yielding 9 replicates.

Results: The total polyphenol content in the seven thieves vinegar was 313.3 mg GAE/L (±7.5). The total flavonoid content in the drink was 540.5 mg RE/L (±36.2). However, antioxidant activity was detected at the level of 84% (±1.7).

Conclusions: Results showed that Seven Thieves Vinegar may be a rich source of polyphenols and flavonoids, and its antioxidant activity is comparable to products commonly considered as strong antioxidants. This means that it may be a good dietary choice with potentially beneficial health-promoting properties.

THE IMAGE OF A HEALTHY LIFESTYLE AMONG CHILDREN AND ADOLESCENTS

OBRAZ ZDROWEGO STYLU ŻYCIA WŚRÓD DZIECI I MŁODZIEŻY

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In response to global health concerns stemming from unhealthy lifestyles, prioritizing the understanding and promotion of healthy habits among children and adolescents is imperative. This article analyzes the concept of a healthy lifestyle among youth, exploring its multifaceted nature and influencing factors. By scrutinizing various factors shaping this lifestyle, the article identifies key determinants and potential intervention avenues for fostering healthy behaviors in this demographic. Additionally, it examines the roles of health education and the social environment in cultivating health-promoting habits in young people.

A healthy lifestyle for youth encompasses diverse behaviors, including regular physical activity, a balanced diet, sufficient sleep, and avoidance of harmful substances. It facilitates holistic physical, mental, and social development while mitigating future chronic disease risks. However, encouraging healthy choices faces challenges due to prevalent unhealthy dietary habits, sedentary lifestyles, and excessive screen time among youth.

Understanding the complex interplay of factors influencing these behaviors is crucial for promoting a healthy lifestyle. Biological, psychosocial, economic, cultural, and environmental factors collectively shape individual motivations, preferences, and capabilities in making healthy choices. Particularly critical during this pivotal period of physical, mental, and social development, shaping a healthy lifestyle for youth requires identifying influencing factors and devising effective promotional strategies.

In conclusion, comprehending the concept of a healthy lifestyle among youth is paramount for public health promotion and chronic disease prevention. This understanding can inform the development of impactful educational initiatives, interventions, and health policies that empower young individuals to adopt and maintain healthy lifestyles.

GAUCHER DISEASE – SOME REMARKS ABOUT THE THERAPY

CHOROBA GAUCHERA – KILKA UWAG ODNOŚNIE TERAPII

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Gaucher disease (Orpha 355) is a lysosomal storage disorder encompassing three main forms (types 1, 2 and 3), with the autosomal recessive pattern of inheritance. All types are caused by significant deficiency or complete loss of function of the enzyme glucocerebrosidase. So far the enzyme replacement therapy (ERT) is a widely approved and effective therapy. Currently, over 100 patients in Poland use this form of treatment.

Treatment programs that have been available for years allow for long-term observation of the impact on the progression of the disease and the patient's condition, as well as possible side effects of therapy. According to the Programs rules the patient is monitored every six-months. The experience gained during drug programs allows for the individualization of treatment by, among others, modifying doses.

Long-term observations indicate that patients undergoing ERT in type II and III disease can lead a normal life and work for years. Unfortunately, there is still no breakthrough in the treatment of infantile neurotrophic form of disease.

EFFECTS OF LAPAROSCOPIC SLEEVE GASTRECTOMY ON THE SERUM POLYUNSATURATED FATTY ACID PROFILE

WPŁYW LAPAROSKOPOWEJ RĘKAWOWEJ RESEKCJI ŻOŁĄDKA NA PROFIL WIELONIENASYCONYCH KWASÓW TŁUSZCZOWYCH W SUROWICY

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Background: Obesity is associated with changes in the serum fatty acid (FA) profile, including polyunsaturated FAs (PUFAs), which are involved in the regulation of inflammation. Laparoscopic sleeve gastrectomy (LSG) affects not only body weight but also the amount of circulating metabolites. The aim of this study was to determine the effects of LSG on the serum PUFA profile.

Methods: The study involved 30 female patients who underwent LSG at the Centre for Obesity and Metabolic Diseases of the Medical University of Gdansk. Serum samples were collected at 5 time points: at qualification for LSG, before liver shrinkage diet, before LSG, 3 and 6 months after surgery. After extraction, FA profiles were determined by gas chromatography-mass spectrometry. The Food Frequency (FFQ-6) was used to assess dietary habits.

Results: 6 months after LSG, there is a decrease in the levels of n-3 and n-6 PUFAs: α-linolenic acid ($p = 0.021$), eicosapentaenoic acid ($p = 0.022$), eicosatetraenoic acid ($p = 0.013$), dihomo-γ-linolenic acid ($p < 0.001$) and eicosadienoic acid ($p = 0.035$). However, 3 months after LSG there is also a decrease in docosahexaenoic acid ($p = 0.024$), n-6 docosapentaenoic acid ($p = 0.049$) and total n-3 and n-6 PUFAs ($p = 0.024$ and $p < 0.001$ respectively). The FFQ-6 analysis shows a lower consumption of carbonated products, sweets and alcohol.

Conclusions: LSG alters the PUFA profile in serum. Moreover, the changes between acids vary over time. The observed changes are undoubtedly also influenced by changes in dietary habits.

NEURODEVELOPMENTAL CHALLENGES IN GENETICS. CASE PRESENTATION OF L1CAM SYNDROME

WYZWANIA NEUROROZWOJOWE W GENETYCE. PREZENTACJA PRZYPADKU ZESPOŁU L1CAM

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Background: L1CAM Syndrome is a rare X linked recessive disorder caused by pathogenic variants in the L1CAM gene (L1 cell adhesion molecule). This gene encodes a calcium-independent transmembrane glycoprotein L1, which plays an important role in neuronal development. L1CAM Syndrome includes three clinical phenotypes: X-linked hydrocephalus with stenosis of the aqueduct of Sylvius (HSAS), MASA syndrome including X-linked complicated spastic paraplegia type 1 and X-linked agenesis of the corpus callosum.

Case report: Here we present L1CAM Syndrome case with novel mutation in the L1CAM gene. A 2.5-year old boy was referred to our out-patient genetics clinic for genetic counseling due to hydrocephalus and psychomotor development delay. in the course of diagnosis we performed a multigene panel, which revealed a variant of uncertain significance c.2152C > T (p.Pro718Ser) in L1CAM gene. Detailed family history revealed that the brother of patient's mother is suffering from congenital hydrocephalus, lower limb paresis, intellectual disability of undetermined cause and adducted thumbs. Patient's grandmother's sister's daughter has 2 sons with similar symptoms. Genetic test of the patient's mother and her brother confirmed the presence of the variant of uncertain significance c.2152C > T (p.Pro718Ser) in L1CAM gene.

Conclusions: This case highlights the importance of genetic evaluation in patients with neurodevelopmental disorders, offering insights into diagnosis, prognosis, and familial implications of L1CAM Syndrome.

PDGF-BB DERIVED CONCATEMERIC PROTEIN AS A POTENTIAL STIMULATOR OF WOUND HEALING

BIAŁKO KONKATAMERYCZNE BĘDĄCE POCHODNĄ PDGF-BB JAKO POTENCJALNY STYMULATOR GOJENIA RAN

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Wound healing is a dynamic process which can be affected by a lot of factors leading to the formation of chronic wounds. Available methods of their treatment are not fully effective so new solutions are constantly being sought.

Platelet-derived growth factor (PDGF-BB) plays an important role in wound healing and participates in proliferation and migration of fibroblasts, keratinocytes and endothelial cells. It is also involved in formation of granulation tissue and production of extracellular matrix. Based on our previous studies on PDGF-BB derived peptides, we designed a new concatemeric protein named PDGF2_10.

Concatemeric proteins are composed of multiple repetitions of a biologically active peptide, which can improve its stability and allow its gradual release.

The activity of PDGF2_10 was analyzed in multiple in vitro models utilizing human cells. It's effect on proliferation of fibroblasts, keratinocytes, adipose-derived mesenchymal stromal cells and endothelial cell and the cytotoxicity towards these cells were evaluated with colorimetric methods (XTT and LDH assays). The effect on chemotaxis of skin cells and collagen synthesis by fibroblasts was also checked. Finally, flow cytometry was used to evaluate the potential to induce allergies (BAT assay) and induce immune reaction in vitro.

The obtained results indicate high safety of PDGF2_10 and its pro-proliferative and pro-chemotactic properties. PDGF2_10 also induces collagen synthesis in human fibroblasts and does not show any allergic potential in vitro. PDGF2_10 can be considered as promising candidate for wound healing stimulation.

This work was supported by National Centre for Research and Development [TECHMAT-STRATEG2/410747/11/NCBR2019].

COMPARISON OF THE EFFECTIVENESS OF ADAPTOGENIC PLANT EXTRACTS IN THE PREVENTION OF FREE-RADICAL DISEASES

PORÓWNANIE SKUTECZNOŚCI EKSTRAKTÓW Z ROŚLIN ADAPTOGENNYCH W PREWENCJI CHORÓB O PODŁOŻU WOLNORODNIKOWYM

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Introduction: Adaptogenic plants are a group of plants recognized for their assistance in the adaptation of the body to various forms of stress. They are primarily utilized in natural medicine and phytotherapy due to their potential health benefits, including enhancing immunity, physical endurance, and cognitive functions. Although adaptogenic plants are currently gaining popularity, their composition and properties have not been fully elucidated.

Aim of the study: The aim of this study was to evaluate and compare the antioxidant properties of extracts from dried Tulsi leaves, Gotu kola leaves, and Schisandra fruits.

Material and methods: The materials used in this study consisted of extracts from dried Tulsi leaves (*Ocimum sanctum*), Gotu kola leaves (*Centella asiatica* L.), and Schisandra fruits (*Schisandra chinensis*). The total polyphenol content was determined using the Folin-Ciocalteu method. Antioxidant capacity was measured using spectrophotometric methods with ABTS and synthetic DPPH radicals. All assays were performed in triplicate, in three separate experiments, yielding 9 replicates.

Results: The total polyphenol content in the tested extracts ranged from 462.7 to 1688.5 mg GAE/L. The values of antioxidant potential, expressed as the percentage inhibition of the ABTS radical, ranged from 23.75 to 99.3%. The values of antioxidant potential, expressed as the percentage inhibition of the DPPH radical, ranged from 18.39 to 75.7%.

Conclusions: Extracts from adaptogenic plants (particularly aqueous extracts) are a rich source of polyphenols and exhibit high antioxidant potential. This suggests they may have potential preventive and therapeutic effects against free radical-related diseases.

THE IMPACT OF MEDICAL STAFF FATIGUE ON MEDICAL ERRORS

WPŁYW PRZEMĘCZENIA KADRY MEDYCZNEJ NA POWSTANIE BŁĘDU MEDYCZNEGO

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Introduction: Managers in the health care sector are struggling with the problem of shortage of medical staff. This also translates into the quality of work of people already employed in the health care sector. Overwork, overtime work and lack of sleep contribute to the so-called organizational errors that pose a significant threat to the quality of services provided and patient safety.

The aim of the work is to present the conceptual scope of the so-called organizational error and presenting real examples that illustrate the scope of the problem and its impact on the quality of medical care provided to patients.

Material and methods: A review of Polish law provisions through legal information systems and a review of available empirical research on the topics discussed using Internet sources.

Results: Both a review of the literature on the subject, including legal provisions, and research results, including court decisions in cases of the so-called medical errors, indicate that decisions made by management staff regarding the work of medical entities (staff size, working time, work organization) affect the work of medical staff, which may ultimately lead to medical errors that may be classified as errors of organizational nature (e.g. drug mix-up, fall, infection, leaving a foreign body).

Conclusions: Raising the awareness of medical staff as to the causes of organizational errors occurring as adverse events may improve the quality of health services provided and patient safety. Phenomena such as medical staff fatigue and burnout contribute to the occurrence of irregularities in the treatment process (treated as the above-mentioned undesirable medical errors). Developing a system to identify and report these types of errors can allow the development of optimal methods for diagnosing the situation in a specific case and the appropriate response of the management staff.

MENTORING AS A TOOL TO IMPROVE THE EFFECTIVNESS OF NURSING WORK IN THE PROCESS OF PROFESSIONAL ADOPTION

MENTORING JAKO NARZĘDZIE PODNOSZĄCE EFEKTYWNOŚĆ PRACY PIELĘGNIARSKIEJ W PROCESIE ADAPTACJI ZAWODOWEJ

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Background: Mentoring is a form of personal and professional development that allows to increase the effectiveness of nursing work especially in the first years after graduating. The changes in nursing are dynamic, therefore, new tools are needed that allow for multi-stage.

Implementation of the employee mentoring is a relationship between an experience nurse (a specialist in the field) and a new nurse without experience in the profession. The main purpose of mentoring is to transfer knowledge and skills for effective work.

Methods: The available Polish and foreign literature was searched through in PubMed and Google database.

Results: in the publications the special pay attention to mentoring as a tool for improving professional qualifications. An effective program support new nurses, improves clinical practise, increases patient safety.

Conclusions: Nursing needs continuous development, due to the dynamic changes in medicine. New tools will allow effective management of staff. Mentoring increases the prestige of profession.

COMPARATIVE ANALYSIS OF THE CORRELATION BETWEEN PARENTAL SMOKING AND CHILDREN'S INITIATION OF SMOKING – SOPKARD-JUNIOR STUDY

ANALIZA KORELACJI MIĘDZY PALENIEM PAPIEROSÓW PRZEZ RODZICÓW A PODEJMOWANIEM PALENIA PRZEZ ICH DZIECI – BADANIE SOPKARD-JUNIOR

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Background and objective: Health-related behaviours start forming during childhood influenced by familial, peer and media influences. Often, children resort to tobacco smoking to emulate adults, with serious consequences, particularly on the nervous and hormonal systems. Prolonged exposure leads to irritability, memory impairment, sleep and learning difficulties and emotional disturbances. This study aimed to examine the correlation between parental smoking and the initiation of smoking among children.

Methods: The analysis utilized data obtained from a cross-sectional survey conducted under the SOPKARD-Junior program, involving elementary school students and one parent each, in Sopot, Poland. Responses from 5th graders and parents were collected in 2017 and 2018, and from 8th graders and parents in 2019 and 2021.The survey questionnaire comprised 27 questions, derived from the GYTS questionnaire. Respondents were asked about nicotine initiation and habits. The correlation between children's attempts to smoke or use nicotine-containing products and parental smoking behaviour was examined using Spearman's correlation test.

Results: The correlation value between children attempt to smoke and their non-smoking parents was 0.089 in Spearman's test, however with a p-value of 0.08, it lacked statistical significance. Conversely, for children with smoking parents, the correlation was 0.61 ($p < 0.05$), indicating statistical significance. Specifically, the correlation was stronger when parents smoked indoors (0.68, $p < 0.05$) compared to smoking outdoors (0.47, $p < 0.05$).

Conclusions: It can be concluded that parental smoking significantly influences children's smoking initiation, emphasizing the need for parental smoking cessation interventions and creating smoke-free environments to reduce children's smoking initiation risk.

ETHICAL STANDARDS OF CONDUCTING MEDICAL RESEARCH ABOUT OLDER PEOPLE

STANDARDY ETYCZNE PROWADZENIA BADAŃ MEDYCZNYCH NA OSOBACH STARSZYCH

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Objective of the work: Defining and presenting ethical standards in conducting medical research on older people, which should take into account the balance between the needs of scientific progress and the protection of key values: integrity, autonomy and well-being of patients.

Thematic scope: 1) Presenting the definition of consent and participation as voluntary consent for older people to participate in the study. 2) Discussion (characteristic) of the process of safety and minimization of health risks for older people. 3) Characteristics of respect for the dignity and autonomy of older people by taking into account their preferences, values and needs during the examination. 4) Raising the issue of transparency of the research process – providing information about goals, risks and potential benefits. 5) Presenting ethical standards for conducting research on older people, ensuring safety, dignity and honesty.

Results: The key issue in conducting medical research is the compliance with ethical standards focusing on: appropriate information for the patient and then expressing free and informed consent to participate in the study.

BREATHING TROUBLE: AN OVERVIEW OF THE INTERPLAY BETWEEN AIRBORNE CONTAMINANTS (PM, SO_2, NO_x, PAH) AND CHILDHOOD OBESITY

OCENA ZALEŻNOŚCI MIĘDZY WYBRANYMI ZANIECZYSZCZENIAMI POWIETRZA A OTYŁOŚCIĄ DZIECIĘCĄ

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In the 21st century, obesity in both adults and children has become a worldwide concern with the latter being more vulnerable to the issue due to their lack of control over their diet, surroundings and living conditions. A highly probable obesogenic factor is air pollution, ranked first among environmental factors responsible for 12% of diseases globally. The review focuses on the associations between exposure to different levels of several types of airborne pollution (PM1, PM2.5, PM10, PAHs, SOx, NOx) measured using nearest located monitors, spatiotemporal models, neural networks or satellite-based data and obesity (diagnosed by Body mass index (BMI), waist circumference, waist-to-height ratio (WHtR), waist to hip ratio and biochemical tests) as well as coexisting medical conditions in children and infants across the world (Asia, Europe, Americas) by analysis of scientific literature published in years 2018-2024 on PubMed. Levels of pollution exceeding WHO guidelines were correlated with elevated weight-related parameters and concerning blood test results, with the effects being more pronounced for smaller pollutants' particles. in conclusion, children's and adolescents' prolonged exposure to common air pollutants leads to heightened prevalence of obesity and enlarged risk of developing comorbidities as well as other negative side-effects.

PRIMARY AND SECONDARY SCHOOL TEACHERS' KNOWLEDGE OF PRESENTEEISM

WIEDZA NAUCZYCIELI SZKÓŁ PODSTAWOWYCH I PONADPODSTAWOWYCH NA TEMAT ZJAWISKA PREZENTEIZMU

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Purpose: The aim of the study was to assess the prevalence of presenteeism among primary and secondary school teachers and to indicate the reasons why sick employees stay in the workplace.

Material: The survey was conducted among 435 primary and secondary school teachers in Poland. The average age of teachers was 42 years, and the largest number of respondents were English language teachers.

Methods: The study was based on an original questionnaire disseminated via a Google form. The questionnaire consisted of 15 closed questions, one open-ended question, and a metric. The questions concerned, among other things, the concept of "presenteeism", the perception of one's effectiveness at work during illness and whether as employees they can be perceived negatively when taking sick leave.

Results: More than half of the respondents (64,6%), when asked about coming to work despite illness or other circumstances justifying absence, answered emphatically in the affirmative. in the analyzed group, 32.2% of people said that they sometimes give up sick leave in order to come to work. More than half of teachers (58,2%) believe that people who take sick leave are less valued by their colleagues and are negatively commented on by them (58,4%). The majority of respondents say that they have never come across the term "presenteeism", but they would like to learn more about it.

Conclusions: The concept of presenteeism is not widely known in the study group. A prominent reason for avoiding absenteeism from work is a sense of duty to students. On the other hand, the aspect that most often causes reduced productivity is health ailments.

SURVEY OF PHARMACISTS' OPINION AND KNOWLEDGE ON ADVERSE DRUG REACTION IN POLAND

BADANIE OPINII I WIEDZY MAGISTRÓW FARMACJI NA TEMAT ZGŁASZANIA DZIAŁAŃ NIEPOŻĄDANYCH PRODUKTÓW LECZNICZYCH W POLSCE

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Medical professionals are expected to collect information about adverse drug reactions (ADR) and report them. Pharmacists' spontaneous reporting of ADR helps assess the safety of a drug after it is placed on the market.

The aim of this study was to verify the hypothesis stating that pharmacists in Poland are willing to report ADR of medicinal products.

The diagnostic survey method was used. Research tool was consisted of 13 questions. The only inclusion criterion was the license to practice as a pharmacist. A total of 404 pharmacists completed the survey.

Pharmacists in Poland are not willing to report ADR. They most often assess their level of knowledge in this area as "moderate". Training on ADRs and their reporting are not popular, even though they consider this knowledge important and are aware of the obligation for pharmacists to report ADRs.

Hospital Pharmacists rate their knowledge of ADRs higher than others and believe that the process of reporting them is simple and does not require much time and energy. The same opinion is also held by pharmacists with a specialist title, who more often declared participation in training on ADRs and are more aware of the obligation to comply with them.

Pharmacists employed in community pharmacies report ADR less often than other respondents.

To sum up, the main the study hypothesis was verified negatively. Based on this study, it can be noted that there is a need for greater education of pharmacists in reporting ADR, especially those employed in community pharmacies.

THE TRANSITION PROCESS – CURRENT STATUS, GOALS AND ASPIRATIONS

PROCES TRANSITION – STAN AKTUALNY A CELE I ASPIRACJE

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Appropriate care for patients with a rare diseases (PWRDs) requires an interdisciplinary approach. The transition process (TP), i.e. the moment when these patients move from pediatric care to adult care, may be particularly difficult. The lack of clear guidelines regarding the TP involves the risk of reducing the quality of services provided, which may ultimately lead to disruptions in treatment.

The aim of the study was to assess the presence of the TP in the Polish health care system and explore health care professionals' (HCPs) perspectives on this process.

The study involved 107 health care professionals from hospitals, specialist clinics and primary health care facilities in Poland. Data were collected over a 7-month period using both paper and digital questionnaires.

The results show that TP for PWRDs is considered an important phenomenon. However, the issue of patients' readiness for this transition is often overlooked. Respondents emphasized the need to appoint a TP coordinator. This person should support both healthcare workers and patients. It would also be reasonable to appoint a doctor responsible for the transition process of adolescent patients, who would collect information from each specialist. There is support for the introduction of standard operating procedures in hospitals, with individual protocols for each patient. It is also recommended that discussions about TP start at least half a year before implementation. This should involve designated preparatory personnel, such as doctors, psychologists and/or coordinators. Tools such as the Allocation of Responsibility or the Transition Readiness Assessment Questionnaire are suggested as useful in assessing readiness.

Despite increasing attention paid to TP, the Polish health care system still lacks structured guidelines. Introducing the changes requested by respondents, as well as establishing comprehensive guidelines for the transition period, could contribute to improving the effectiveness of the treatment process and the quality of life of PWRDs.

AN UPDATE ON THE PREVALENCE OF *ECHINOCOCCUS MULTILOCULARIS* IN RED FOXES (*VULPES VULPES*) IN NORTHERN AND NORTH-EASTERN POLAND

AKTUALNE DANE DOTYCZĄCE WYSTĘPOWANIA *ECHINOCOCCUS MULTILOCULARIS* U LISÓW RUDYCH (*VULPES VULPES*) W PÓŁNOCNEJ I PÓŁNOCNO-WSCHODNIEJ POLSCE

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Knowledge of *Echinococcus multilocularis* prevalence in wild canids helps us assess the risk of zoonotic spillover. in this study, we updated the infection statistics among red foxes in northern and north-eastern Poland since the last monitoring effort at the district (county) level (2001-2004). We collected intestinal contents from 192 red foxes from the districts of Słupsk, Puck, Wejherowo, Kościerzyna and Kartuzy (Pomerania Province), 176 individuals from the districts of Bartoszyce, Kętrzyn, Gołdap and Iława (Warmia-Masuria Province), and 47 individuals from the district of Augustów (Podlasie Province). Based on nested PCR confirmed by Sanger sequencing, we calculated the prevalence with a 95% confidence interval and compared the obtained values to previous reports. We did not find statistically significant changes in prevalence in the sampled areas. Our results indicate that the epidemiological status of red foxes has remained stable over the past 20 years.

THE EFFECT OF SELECTED EPIGENETIC INHIBITORS ON THE BIOLOGY OF SKIN FIBROBLASTS FROM DIABETIC AND NON-DIABETIC DONORS

WPŁYW WYBRANYCH MODULATORÓW EPIGENETYCZNYCH NA BIOLOGIĘ FIBROBLASTÓW SKÓRY POCHODZĄCYCH OD PACJENTÓW ZDROWYCH I CUKRZYCOWYCH

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Epigenetic modulators are compounds that modify the processes of DNA condensation, replication, recombination and repair, as well as gene expression. The most prevalent epigenetic mechanisms include acetylation, phosphorylation, methylation and ubiquitination. These mechanisms do not change the structure of genes, affects only their function. Epigenetic inhibitors are used in various diseases such as neurological, oncological or cardiovascular disorders. in addition, they regulate wound healing process.

ML324 is a JMJD2 demethylase inhibitor and histone demethylase KDM4B inhibitor. It also exhibits antiviral activity. Another modulator, GSK126 is a EZH2 methyltransferase inhibitor. The aim of this study was to evaluate the effects of ML324 and GSK126 on proliferation, migration, and cytokine secretion in skin fibroblasts from healthy and diabetic patients. The proliferation and cytotoxicity tests were performed with colorimetric methods (XTT and LDH assays). DNA replication was assessed using the EdU cell proliferation assay by flow cytometry. Additionally, the cytokines level was evaluated using Luminex technology.

Both compounds showed no cytotoxicity properties against fibroblasts from healthy and diabetic patients. in addition, increased migratory activity of the cells was noted after the application of epigenetic modulators. An increase level of proliferating cells was observed after ML324 treatment. It was also shown that ML324 and GSK126 affect the secretory profile of the analyzed cells.

Presented results indicate that ML324 and GSK126 can be used in wound healing stimulation.

This work was supported by National Science Centre – Poland [grant 2019/33/B/NZ7/02676] and National Centre for Research and Development [TECHMAT-STRATEG2/410747/11/NCBR2019].

GENETIC KIDNEY DISEASE, FETAL GROWTH RESTRICTION AND PRE-ECLAMPSIA: AN INTERDISCIPLINARY CHALLENGE

CHOROBA GENETYCZNA NEREK, ZABURZENIA WEWNĄTRZMACICZNEGO WRASTANIA PŁODU I PREEKLAMPSJA: PRZYPADEK INTERDYSCYPLINARNY

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Obstetric care in a tertiary center often requires interdisciplinary cooperation to ensure safe delivery of neonates while maintaining maternal health, which can be especially challenging for patients with rare conditions.

A 28-year-old patient, in her first pregnancy, arrived at the emergency department at 31 weeks and 5 days gestation because of hypertension (190/120 mmHg) with concomitant III stage chronic kidney disease (CKD) due to autosomal dominant tubulointerstitial kidney disease (ADTKD). Upon admission to the pathology of pregnancy ward, fetal growth restriction (FGR) was suspected. Regular consultations with nephrology and hypertensiology departments ensured pharmacotherapy modifications and maintaining acceptable blood pressure and kidney function until 35 weeks of pregnancy. Fetal Doppler ultrasonography and cardiotocography were performed regularly to monitor neonatal condition.

As pre-eclampsia symptoms advanced and hemolyses, elevated liver enzymes and low platelets syndrome (HELLP) was recognized, a pre-term cesarean delivery of a healthy female newborn weighing 2050 g was performed. Mother required a blood transfusion due to secondary anemia; otherwise, her health and kidney status remained stable.

ADTKD pregnancy outcomes have only once been described in the literature in a survey-based study with limited data and patients with predominantly mild symptoms, where only 16.5% of genetically affected women knew about ADTKD diagnosis during pregnancy. Our patient with stage III CKD developed some of the most severe obstetrical conditions, probably connected to ADTKD-induced hypertension. Interdisciplinary care and collaboration at the tertiary level enable safe prenatal and postnatal care of patients with rare and complex conditions, such as ADTKD, CKD, HELLP syndrome, and pre-eclampsia.

IMPACT OF PRE-PREGNANCY MATERNAL BODY MASS INDEX ON NEONATAL OUTCOMES AND MODE OF DELIVERY

WPŁYW WSKAŹNIKA MASY CIAŁA MATKI PRZED CIĄŻĄ NA STAN NOWORODKA I SPOSÓB PORODU

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Introduction: Incorrect pre-gestational maternal Body Mass Index (BMI) and inappropriate gestational weight gain (GWG) during pregnancy may lead to adverse pregnancy outcomes, including preterm birth (PB), abnormal fetal weight, and prompt to surgical labor. We analyzed the influence of maternal BMI on PB, neonatal birthweight (BW) and mode of delivery.

Methods: Data were collected from March 2023 to January 2024 in University Clinical Centre hospital in Gdansk and in Pomeranian Hospital in Gdynia. Data were obtained by questionnaire and derived from medical records. Based on pre-pregnancy BMI mothers were divided into normal weight (BMI < 18.5), overweight (BMI 18.5–24.9) and obese (BMI ≥ 30). Newborns born < 37weeks of pregnancy were classified as premature, newborns born ≥ 37weeks gestation were classified as term. Neonates were divided into categories depending on birthweight as: appropriate for gestational age (AGA), small for gestational age (SGA) and large for gestational age (LGA). We used multinomial logistic or linear regression models.

Results: We included 449 mother-infant pairs: 249 preterm, 200 terms. Logistic regression did not show a relationship between higher maternal BMI and risk of PB ($p > 0.05$), but in linear model obesity reduced GA by 1.53 weeks. Overweight and obese mothers had increased risk of LGA neonates (OR = 4.02, $p = 0.008$, OR = 7.40, $p < 0.001$). Women who were obese (OR = 2.99, $p = 0.024$), overweight (OR = 3.47, $p = 0.002$) and with abnormal GWG (OR = 2.40, $p = 0.014$) had a higher risk of elective caesarean section (CS).

Conclusions: Obesity is risk factors for adverse obstetric and neonatal outcomes. Preventive measures promoting a healthy lifestyle should be addressed to women of reproductive age and families, to build healthy habits.

ANALYSIS OF VERY LONG CHAIN FATTY ACIDS IN THE KIDNEY IN A MOUSE MODEL OF IKSHD DISEASE BY GC-MS

ANALIZA BARDZO DŁUGOŁAŃCUCHOWYCH KWASÓW TŁUSZCZOWYCH W NERCE W MYSIM MODELU CHOROBY IKSHD PRZY UŻYCIU GC-MS

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Increased expression of elongase 1 fatty acids (ELOVL1), enzyme involved in the elongation of fatty acids (FAs), is observed in human and mice kidneys, among others. The p.Ser165Phe mutation in the gene Elovl1 causes IKSHD (ichthyotic keratoderma, spasticity, hypomyelination, dysmorphic features). Symptoms of the mutation are changes in the composition of very long chain FA (VLCFA), caused disturbance in the structure of the brain and skin. The aim of the study is to determine the effects of the mutation on the VLCFA content and the expression of selected Elovls in the mice kidney.

Kidney samples were collected from three-month-old Elovl1p.S165F/p.S165F, Elovl1p.S165F/wt and wild type (WT) C57BL/6J female and male mice. The lipids were extracted and subsequently derivatized to FA methyl esters for analysis by gas chromatography mass spectrometry (GC-MS). The expression levels of genes encoding lipogenic enzymes were determined by Real Time PCR.

An accumulation C20-C21 and a reduced of FA≥C23 in Elovl1p.S165F/p.S165F were observed in both sexes compared to WT mice. in Elovl1p.S165F/p.S165F male the level of Elovl1 expression was lower in contrast to Elovl1p.S165F/p.S165F female, in which the expression were elevated compared to both sexes of WT mice. Level of Elovl6 expression was similar between three genotypes in male mice, in opposite to female, where expression was elevated in compared to WT.

The results obtained show that the mutation affects VLCFA levels between Elovl1p.S165F/p.S165F, Elovl1p.S165F/wt and WT. Elevated Elovl6 expression in Elovl1p.S165F/p.S165F compared to WT female mice might be a compensatory mechanism.

Funding: National Science Center, grant no. 2020/37/B/NZ4/00821.

THE OCCURRENCE OF VANCOMYCIN RESISTANT *ENTEROCOCCUS FAECIUM* IN THE GDAŃSK SEWAGE WATER

WYSTĘPOWANIE W GDAŃSKICH ŚCIEKACH BAKTERII *ENTEROCOCCUS FAECIUM* OPORNYCH NA WANKOMYCYNĘ

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Antibiotic resistance stands a great challenge for today's medicine. Resistance to glycopeptides is a phenomenon known since 1980s', when these antibiotics were widely used in pig breeding industry as a growth stimulant. This practice led to the spread of vancomycin resistant *Enterococcus* species, which nowadays can be found in multiple environments, including sewage water. In the present study, we investigated the *E. faecium* VRE titer in Gdańsk sewage water in the span of a year. Three types of raw sewage samples, collected from May 2023 to April 2024, were included in the following study: water from Motława and Zaspa collector sewage, and average daily inflow from the water treatment plant "Gdańsk-Wschód". The samples were diluted up to 10-4 and seeded on Chromagar VRE plates. Only the tiny red colonies, characteristic of *E. faecium* VRE, were taken into account.

The highest titer values were observed in the spring and summer months (May, June, July, August) with the values assigned to "Zaspa" sewage collector reaching 2000 CFU/ml. Throughout the autumn/winter period (September, October, November, December), we observed rapid decrease in the amount of *E. faecium* VRE colonies, which is reflected in titer values reaching barely 100-600 CFU/ml, the highest values noted for samples acquired from "Gdańsk-Wschód". Samples acquired from "Motława" sewage collector were generally deficient in *E. faecium* VRE. These observations may find explanation in carriers' inflow during tourist season and optimal conditions for bacteria survival such as constant warm temperatures. As well as the location of large health centers, including clinical hospitals.

GENETIC TESTING IN PRIMARY CILIARY DYSKINESIA – CASE REPORT

DIAGNOSTYKA GENETYCZNA PIERWOTNEJ DYSKINEZY RZĘSEK – OPIS PRZYPADKU

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Background: Primary Ciliary Dyskinesia (PCD) is a rare genetic disorder caused by abnormalities in the ultrastructure and the function of cilia. PCD is characterised by multiple respiratory, fertility and structural defects. The wide range of clinical manifestations and genetic aetiology makes PCD difficult to diagnose.

Case description: We present two cases highlighting genetic testing and its results in patients associated with PCD.

Patient 1 – A prematurely born 9-month-old presented with respiratory failure, suggestive of PCD. The patient's history reveals congenital anomalies such as diaphragmatic hernia (corrected with surgery) and type II atrial septal defect (ASD), along with psychomotor developmental delay. Whole exome sequencing of the patient revealed a Variant of Uncertain Significance in the AKAP6 gene.

Patient 2 – A 5.5-month-old exhibited respiratory distress. Imaging studies displayed visceral inversion and dextrocardia (hinting at Situs Inversus) along with slight dilation of the ventricular system. Genetic testing identified two pathogenic variants in the ZMYND10 gene.

Conclusion: These cases illustrate the diagnostic challenge associated with PCD, underscoring the importance of considering PCD in infants with respiratory distress and congenital anomalies. Additionally, we aim to contribute to the limited body of literature on PCD in Poland, highlighting the need for further research and awareness initiatives to enhance the diagnostic accuracy and management strategies for this rare disorder which in turn leads to improved outcomes for affected individuals.

DIET, MICROBIOTA, HEALTH

DIETA, MIKROBIOM, ZDROWIE

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Diet, Microbiome, Health is the title of the session we propose, please accept three short presentations – Microbiome, diet and autoimmune diseases, Microbiota in celiac disease and Intestinal microbiota in chronic kidney disease.

All these topics are very important due to the relationship between what we eat, the composition of the intestinal microbiota and maintaining health. It has been proven that the “Western” diet promotes an abnormal composition of the microbiota. Improper eating habits are not always the cause of microbiota disorders, but the presence of diseases such as celiac disease or kidney disease. Appropriate interventions can then help improve health and prevent complications. The aim of the session and the proposed lectures is to present the latest possibilities of influencing the intestinal microbiota, especially in groups of people with an increased risk of disorders.

IDENTIFICATION OF *TOXOPLASMA GONDII* IN WILD RODENTS IN POLAND BY MOLECULAR AND SEROLOGICAL TECHNIQUES

WYKRYWANIE *TOXOPLASMA GONDII* U DZIKICH GRYZONI W POLSCE ZA POMOCĄ METOD MOLEKULARNYCH I SEROLOGICZNYCH

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Rodents are recognized as reservoirs for *Toxoplasma gondii*, playing a crucial role in maintaining the parasite's presence in the environment. Biomonitoring was conducted to assess the role of sylvatic rodents in maintaining *T. gondii*, and to analyse the prevalence and seroprevalence of the parasite in seven wild rodent species. Rodents were collected in an open grassland study site located in northeastern Poland, and dissected. Brain, spleen, blood and serum samples were collected. Molecular (PCR assay, nested-PCR assay) and serological (ELISA and agglutination tests) methods were applied to indicate the best approach for application in the biomonitoring of *T. gondii* in small mammals. Samples were screened from 68 individuals using PCR assays but no T. gondii DNA were found. The agglutination test showed no signal. Antibodies against *T. gondii* were found in 5 sera samples out of 56 analysed (seroprevalence = 8.9% [4.4–16.8]). The results confirmed that rodents participate in the life cycle of *T. gondii* as reservoirs of this parasite in the sylvatic environment. However, for effective bio-monitoring of *T. gondii* in small mammals, the results suggest a preference for utilizing ELISA tests to detect *T. gondii* antigens, as opposed to relying solely on molecular methods.

GUT MICROBIOTA IN CHRONIC KIDNEY DISEASE

MIKROBIOTA JELITOWA W PRZEWLEKŁEJ CHOROBIE NEREK

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In patients with chronic kidney disease (CKD), significant alterations in the gut microbiota are observed, influenced by multiple factors intrinsic to the disease and its treatment. CKD is associated with a state of uremia, where the accumulation of uremic toxins and the reduction in renal function create an environment that fosters dysbiosis. This dysbiosis is characterized by a decrease in beneficial bacteria, such as *Lactobacillus* and *Bifidobacterium*, and an increase in pathogenic bacteria, including those producing uremic toxins like indoxyl sulfate and p-cresyl sulfate.

The reasons behind these changes are multifaceted. Firstly, dietary restrictions common in CKD patients, particularly reduced intake of fibers, are vital for the growth of SCFA-producing bacteria. in CKD, accumulated urea is hydrolyzed to ammonia under the influence of bacterial urease. Ammonia is then transformed into ammonium hydroxide, which increases the pH of the intestinal lumen, alters the living conditions of beneficial bacteria, irritates the mucous membrane, and increases the risk of intestinal inflammation. The use of antibiotics to manage infections in CKD patients further disrupts the balance of gut microbiota. Additionally, impaired immune function and the altered intestinal barrier in CKD contribute to the proliferation of pathogenic bacteria.

This altered microbiota not only exacerbates the progression of CKD by increasing systemic inflammation and oxidative stress but also affects the overall health and quality of life of the patients. Understanding these microbiota changes is crucial for developing targeted therapies.

APPLICATION OF PLATELET-RICH PREPARATIONS IN ORAL SURGERY AND IMPLANTOLOGY

ZASTOSOWANIE PREPARATÓW BOGATOPŁYTKOWYCH W CHIRURGII JAMY USTNEJ I IMPLANTOLOGII

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In dentistry and medicine, platelet-rich preparations (PRP) obtained from blood have been used in regenerative procedures for many years. PRP are autogenous materials and are divided into platelet-rich plasma and platelet-rich fibrin. in oral surgery and implantology, platelet concentrates are used to supply post-extraction sockets, to fill the cavity after cyst enucleation, after resection of root apex, in the treatment of medication-related osteonecrosis of the jaw (MRONJ), in guided tissue regeneration, during maxillary sinus floor lifting procedures, bone and soft tissue grafts or covering recessions. PRP contain a concentrate of platelets and growth factors that influence the regeneration, healing reduces the inflammation process, accelerates angiogenesis and hemostasis processes.

The aim of the study was to present the use of PRP in oral surgery and implantology.

ECHINOCOCCUS MULTILOCULARIS IN RED FOXES (*VULPES VULPES*) AND HUNTING DOGS IN HUNTING AREAS OF POMERANIAN PROVINCE, POLAND

ECHINOCOCCUS MULTILOCULARIS U LISÓW RUDYCH (*VULPES VULPES*) I PSÓW MYŚLIWSKICH W OBWODACH ŁOWIECKICH WOJEWÓDZTWA POMORSKIEGO, POLSKA

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In Poland, the main definitive host of *Echinococcus multilocularis* is red fox (*Vulpes vulpes*) and its population is being regulated. Hunting often involves hunting dogs. Direct contact of the dogs with wildlife results in increased exposure to infectious agents, including tapeworms. The aim of this study was to compare the prevalence of *E. multilocularis* infection in dogs assisting rangers and hunters and red foxes in a hunting areas of Pomerania Voivodeship. Faecal samples were collected from164 hunted red foxes and 72 dogs of hunting breeds. Fox faeces were collected during dissection directly from the intestine. Canine faecal samples were provided by owners along with a questionnaire describing the dog condition and behavioural habits. All faecal samples were examined microscopically using the flotation method and molecularly using nested PCR and Sanger sequencing. Tapeworms eggs of the family *Taeniidae* were detected in 4 (2.44%) faecal samples collected from foxes. in contrast, molecular study confirmed presence of *E. multilocularis* DNA in 19 (10.98%) and 6 (8.3%) fox and dogs faecal samples, respectively. According to questionnaire, all infected dogs had daily access to the forest and meadows where both foxes and rodents are seen, they were often let loose in all nearby areas and possibility of close contact with foxes and wildlife carcasses was indicated as high. Results of this preliminary study show that the prevalence of *E. multilocularis* infection in dogs accompanying hunters and rangers, with direct access to excreta and carcasses of wildlife, is at similar level to living in hunting districts red foxes. This indicates that hunting dogs may become as important reservoir of *Echinococcus* as foxes and wild canids are. in addition, a close co-habitation of humans with dogs, especially breeds used for hunting, makes it an important aspect of public health risk factor.

This work was supported by the National Science Centre grant no.2020/37/B/NZ7/03934.

ANALYSIS OF RELATIONSHIPS AND CO-INFECTIONS OF PATHOGENS TRANSMITTED BY THE COMMON TICK *IXODES RICINUS*

ANALIZA RELACJI I KOINFEKCJI PATOGENÓW PRZENOSZONYCH PRZEZ KLESZCZE POSPOLITE *IXODES RICINUS*

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Ticks are ectoparasites that feed on the blood of various animals, including humans. These arachnids are vectors and reservoirs of dangerous pathogens, including: bacteria, viruses and protozoa. One tick individual may be infected by more than one pathogen. Co-infection change the clinical picture in patients, making the course of the disease more severe and complicated, thus causing difficulties in treatment. Due to the risk of mixed invasion, there is a need to perform differential diagnostic that enable the detection of pathogens responsible for causing co-infection.

My objectives were to monitor the prevalence of *Borrelia* spp., *Anaplasma* spp., *Babesia* spp., *Rickettsia* spp. in common tick (*Ixodes ricinus*) found in Tricity Landscape Park and to assess the role of this parasite as risk of co-infection occurrence in human. Found *I. ricinus* individuals were stored in 70% ethanol for molecular analysis – nested Polymerase Chain Reaction (nestedPCR) and real-time Polymerase Chain Reaction (RT-PCR). Products of nested-PCR were observed by electrophoresis method. I detected *Babesia microti* in 4 from 61 found arachnids, with an overall prevalence of 6,6%; *Borrelia afzelii* in 9, with an overall prevalence of 14,8% and *Borrelia garinii* in 2, with an overall prevalence 3,3%. Obtained results were confirmed by molecular sequencing.

Biomonitoring contribute to our understanding of the abundance of *B. microti*, *B. afzelii* and *B. garinii* in common tick in Pomeranian Voivodeship and confirm that listed above pathogens circulates in *I. ricinus*. Therefore, common tick play a role as reservoir of this pathogens in urban environment.

EFFECTS OF RESISTANCE TRAINING AND MANUAL THERAPY ON FUNCTIONAL, CLINICAL AND BIOCHEMICAL OUTCOMES IN PATIENTS WITH SEVERE HEMOPHILIA: A CASE REPORT

WPŁYW TRENINGU OPOROWEGO I TERAPII MANUALNEJ NA WYNIKI FUNKCJONALNE, KLINICZNE I BIOCHEMICZNE U PACJENTÓW Z CIĘŻKĄ HEMOFILIĄ. OPIS PRZYPADKU

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Introduction: This report describes the case of adolescent patients with severe hemophilia who participated in an integrated physiotherapy program that included resistance training and manual therapy to improve physical function and quality of life. Four boys, aged 11 to 18, had suffered from movement limitations and chronic pain caused by recurrent joint bleeding since childhood. Due to the insufficient effectiveness of conventional treatments, it was decided to use an 8-week therapy program, with sessions twice a week, tailored to the individual needs of the patients. The goal of the therapy was to strength muscles, improve range of motion in the most affected joints, and improve proprioception and functionality in daily activities. Before and after the program, a detailed diagnostic evaluation was performed, including body composition analysis, muscle strength measurement, joint range of motion, biochemical analysis and joint ultrasonography.

Results: The results showed a significant improvement in muscle strength, an increase in lean body mass, a decrease in HJHS scores, joint range of motion and overall quality of life for the patients, with no increase in bleeding episodes.

Conclusions: The proposed physiotherapy program appears to be effective in improving physical function and quality of life in children and adolescents with severe hemophilia. The report emphasizes the importance of individually tailored physiotherapy interventions in the treatment of severe hemophilia.

ASSESSMENT OF VARIABLES MODULATING THE QUALITY OF LIFE OF STUDYING STUDENTS IN THE DISCIPLINE OF HEALTH SCIENCES

OCENA ZMIENNYCH MODULUJĄCYCH JAKOŚĆ ŻYCIA STUDENTÓW STUDIUJĄCYCH W DYSCYPLINIE NAUK O ZDROWIU

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Background: The demographic decline and constant shortages of nursing staff have resulted in an increase in the number of universities offering education in health sciences, especially in standardized fields. The high competitiveness of individual universities and fields of study on the educational services market means that the choice of a specific university, faculty or field of study will increasingly depend on the quality of education offered. A constant problem is students withdrawing from studies or having to earn money in order to support themselves during their studies. The study of students' opinions on the course of the educational process, as well as problems related to the workload and the financial situation of students are one of the important elements contributing to the assessment of the quality of life of students.

Aim of study: The aim of the study was to assess variables that modulate the quality of life of students studying health sciences.

Material and methods: The pilot study was conducted in 2024. The research method was a diagnostic survey using a survey technique. The tools used in the study were: the author's questionnaire, the Epforth Sleepiness Scale and the WhoQoL-Bref questionnaire. The study covered 400 randomly selected students of Health Sciences. They were students of the first, second and third year of full-time first-cycle studies, and the first and second year of full-time second-cycle studies.

Results: The overall satisfaction of nursing students with their field of study is average. The key factor influencing the quality of life of students is the financial situation, which is an important factor for 54.3% of respondents. There is an increase of 61.7% in students with symptoms of depression. Fatigue and excess responsibilities are the reasons for 34% of students to withdraw from studies. It is observed that 27% of students drink energy drinks every day.

Conclusions: The study identifies key factors leading to a decline in the quality of life of health sciences students. The results indicate the direction of changes in individual fields of study in the health sciences discipline, which may contribute to an increase in the number of students in health sciences fields. Factors influencing students' life satisfaction include: financial situation, level of sleepiness and the need to earn money while studying. This affects the assessment of oneself as a student, the course of studies, the time devoted to learning and the assessment of the quality of one's current life. These are important predictors that provide information that can be used in direction management.

RADIOLIGAND THERAPY OF PROSTATE CANCER

TERAPIA RADIOLIGANDOWA RAKA PROSTATY

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Prostate cancer is the most common malignancy in men in developed countries. More than half of patients initially treated with radical intent experience recurrence of the disease within a few years and require anti-androgen therapy. After certain time the cancer loses sensitivity to antihormons, eventually turning into metastatic castration-resistant prostate cancer (mCRPC). One of the therapeutic options for mCRPC is radioligand therapy using 177Lu-PSMA-617 – a ligand of the PSMA membrane receptor present on the surface of prostate cancer cells. The effectiveness of 177Lu-PSMA-617 in the treatment of mCRPC was demonstrated in the VISION and TheraP clinical trials. This presentation discusses the results of these clinical trials and other clinical studies concerning radioligand therapy in prostate cancer, including the use of PSMA ligands labeled with alpha emitters.

ASSESSMENT OF THE SAFETY AND POTENTIAL BENEFITS ASSOCIATED WITH FOOD SUPPLEMENTS

OCENA BEZPIECZEŃSTWA I POTENCJALNYCH KORZYŚCI SUPLEMENTÓW DIETY

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Food supplements are becoming increasingly popular among consumers worldwide, who are encouraged to choose them by their widespread availability and advertisements. These products are often treated as panaceas for all ailments. Unfortunately, few people know what they are or whether it is necessary to take them.

According to the Polish legal definition, food supplements are foodstuffs intended to supplement the normal diet. They constitute concentrated sources of vitamins, minerals, or other substances that exert nutritional or other physiological effects, excluding products that have the properties of a medicinal product as defined by pharmaceutical law [Ustawa o bezpieczeństwie żywności i żywienia z dnia 25 sierpnia 2006 r. Dz. U. Nr 171, poz. 1225].

Mistakes involving the use of supplements are frequent and can raise the risk of health problems. Patients are often unaware that some components of dietary supplements can affect the absorption of drugs and limit the effectiveness of treatment, while others can potentiate their effects and increase the risk of side effects. On the other hand, people who require supplements seldom take them.

Therefore, the decision to use dietary supplements should be preceded by an analysis of diet, health status, and pharmacotherapy. Dietary supplementation should not be implemented under the influence of advertising or recommendations from friends, as any nutrient used in excess can have adverse effects on health. The average consumer should be aware of what food supplements are, what their purpose is, when it is worth reaching for them, and in which cases they may show adverse effects.

MULTISYSTEMIC SMOOTH MUSCLE DYSFUNCTION SYNDROME: A CASE REPORT OF A PATIENT WITH A MUTATION IN THE ACTA2 GENE

ZESPÓŁ WIELOUKŁADOWEJ DYSFUNKCJI MIĘŚNI GŁADKICH ZE SPOWOLNIENIEM PERYSTALTYKI JELIT. OPIS PRZYPADKU PACJENTA Z MUTACJĄ W GENIE ACTA2

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Background: Multisystemic Smooth Muscle Dysfunction Syndrome (MSMDS), is a rare disease associated with a heterozygous mutation in the ACTA2 gene. It is characterized by the presence of patent ductus arteriosus, pulmonary artery hypertension, aortic and other arterial aneurysms, congenital dilation of pupils, hypomotility, and hypotonic bladder.

Case summary: We present the case of a 3-year-old girl with discrete facial dysmorphic features, hypotonia, gastroparesis, mydriasis and poor weight gain. The child is from the fourth pregnancy, third delivery, born by cesarean section at 39 weeks' gestation, in general good condition, with a birth weight of 2800 g. During the prenatal period, suspicion of prune belly syndrome with accompanying organ enlargement was noted. The girl has a history of atrial septal defect, patent ductus arteriosus that requires ligation, mydriasis, and gastroparesis. Psychomotor and speech development are delayed. She has presented a high pain threshold since birth. Karyotype and microarray findings yielded normal results. A pathogenic variant was identified in one allele of the ACTA2 within the NGS panel linked to generalized hypotonia. Mutations in this gene are known to cause MSMDS.

Conclusions: The multisystemic course of the disease and the associated diversity of non-specific symptoms can pose diagnostic challenges. Moreover, the rarity of the disease typically leads to a diagnostic process focused on excluding more probable causes, resulting in a late diagnosis, usually at the genetic testing stage.

ANALYSIS OF VERY LONG CHAIN FATTY ACIDS IN THE PANCREAS IN A MOUSE MODEL OF IKSHD DISEASE BY GC-MS

ANALIZA BARDZO DŁUGOŁAŃCUCHOWYCH KWASÓW TŁUSZCZOWYCH W TRZUSTCE W MYSIM MODELU CHOROBY IKSHD PRZY UŻYCIU GC-MS

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IKSHD (ichthyotic keratoderma, spasticity, hypomyelination, dysmorphic features) is a genetic disease caused by the p.Ser165Phe mutation in the fatty acid elongase 1 (ELOVL1) gene and was found in two unrelated male patients. The symptoms of the disease appear on the skin and in the nervous system. The lack of VLCFA can lead to cell decay, neurodegenerative diseases and possibly, dysfunction in other organs, where overexpression of ELOVL1 is detected, including the pancreas.

In the research pancreatic tissues from three-month-old (3M), six-month-old (6M) and twelve-month-old (12M) male and female mice Elovl1p.S165F/p.S165F, Elovl1p.S165F/wt and wild type (WT) C57BL/6J were analyzed. Lipids were extracted from the pancreas using the Folch method. The lipid extracts were derivatized to FA methyl esters and analyzed by gas chromatography mass spectrometry (GC-MS).

In both sexes, an accumulation of C20-C21 and a reduced of FA≥C23 in Elovl1p.S165F/p.S165F were observed at three time points compared to WT mice. Interestingly, in Elovl1p.S165F/p.S165F the level of C22 were upregulated in both sexes 3M compared to 12M mice. Moreover, in 3M Elovl1p.S165F/p.S165F female level of C20 and C22 was elevated compared to 12M Elovl1p.S165F/p.S165F female. in Elovl1p.S165F/p.S165F male similar tendency was observed in 3M in contrast to 12M mice.

The obtained results indicate that the mutation alters the levels of VLCFA between three genotypes of female mice and the effect of the mutation on C20 and C22 levels were visibly depending on the age. No such dependencies were observed in male mice.

Funding: National Science Center, grant no. 2020/37/B/NZ4/00821.

PARVOVIRUS B19 IN PREGNANCY: CAN BETTER RESULTS BE ACHIEVED THROUGH INTERDISCIPLINARY PEDIATRICIAN-OBSTETRICIAN COOPERATION?

ZAKAŻENIE PARWOWIRUSEM B19 W CIĄŻY: CZY MOŻEMY OSIĄGNĄĆ LEPSZE WYNIKI TERAPEUTYCZNE DZIĘKI INTERDYSCYPLINARNEJ WSPÓŁPRACY PEDIATRÓW Z POŁOŻNIKAMI?

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Parvovirus B19 causing the fifth disease or “slapped cheek syndrome” is one of the most common rash infectious diseases of childhood, were treatment is mostly supportive.

However, this mild childhood disease in a pregnant patient can gravely affect the fetus, often leading to serious consequences including fetal anemia and intrauterine fetal death (IUFD).

In the series of two cases, different adverse effects of intrauterine fetal parvovirus B19 infection are described with special attention to the diagnostic process.

A 29-year-old woman in 24th week of fourth pregnancy, was admitted to tertiary center due to fetal growth restriction and oligohydramnios. in the diagnostic process amniocentesis was performed confirming fetal parvovirus B19 infection with > 119 milion viral DNA copies per milliliter. Doppler ultrasonography excluded fetal anemia and patient was successfully monitored in the outpatient clinic.

Secondly, a 31-year-old woman in 32nd week of second pregnancy was admitted due to respiratory distress caused by polyhydramnios. Amnioreduction reveled fetal parvovirus B19 infection causing fetal hydrothorax which was treated by thoracocentesis. Due to hydrops fetalis, cesarean section was performed delivering a neonate in severe condition who remained in neonatal intensive care unit for 6 weeks.

Both patients during pregnancy had contact with kindergarten children with symptoms of parvovirus B19 infection and later observed mild cold-like symptoms. in year 2024, a sharp rise of parvovirus B19 fetal infections is observed which requires interdisciplinary pediatrician-obstetrician cooperation to enable early referral for diagnosis and possible treatment of pregnant patients after suspected contact with infected pediatric population.

ANTIBIOTIC RESISTANCE OF *AEROMONAS* SP. ISOLATES OBTAINED FROM WATER AND WET SAND IN THE GULF OF GDANSK AREA

OPORNOŚĆ NA ANTYBIOTYKI IZOLATÓW *AEROMONAS* SP. UZYSKANYCH Z WODY I MOKREGO PIASKU W REJONIE ZATOKI GDAŃSKIEJ

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Introduction: *Aeromonas* sp. is a facultatively anaerobic, Gram-negative group of bacteria commonly found in brackish waters. Most species of *Aeromonas* are associated with human diseases such as gastroenteritis, wound infections, pneumonia associated with Near-Drowning, necrotizing fasciitis, and many others. This study aimed to characterize different *Aeromonas* species occurring in the Baltic Sea and watercourses based on salinity sensitivity and antibiotic resistance.

Material and methods: Forty-one isolates were used in the study. The strains belong to the bank of isolates of the Department of Immunobiology and Environmental Microbiology and were obtained from water and wet sand at the shore of the Gulf of Gdansk and watercourses (freshwater). The research focused on the comparison of three species: *Aeromonas punctata* (*caviae*), *Aeromonas hydrophila*, and *Aeromonas sobria*. Preferred salinity was tested using NaCl solutions in Nutrient Broth at concentrations of 0%, 0.5%, 2%, 5%, 10%, and 15%. Antibiotic resistance was tested with the disc diffusion method according to the EUCAST protocol and CLSI breakpoints. The tested antibiotics included ofloxacin, piperacillin with tazobactam, cefotaxime, tetracycline, ciprofloxacin, meropenem, gentamicin, and amikacin.

Results: The study revealed the presence of one isolate (*Aeromonas hydrophila*) resistant to ciprofloxacin and one isolate (*Aeromonas punctata* (*caviae*)) resistant to tetracycline. Statistical comparison (ANOVA Kruskal-Wallis) of the sizes of growth inhibition zones showed statistically significant differences between tested species in the case of ofloxacin ($p = 0.0004$), cefotaxime ($p = 0.0023$), meropenem ($p = 0.00001$), and amikacin ($p = 0.0116$). All species showed the best growth at a salt concentration of 0.5%.

Conclusions: This research provides important data on the medical relevance of *Aeromonas* sp. from the aquatic environment. Significant differences in the antibiotic sensitivity of *Aeromonas* sp. may be an important clue in the context of infection therapy.

ANALYSIS OF THE EFFECT OF TABLET MATRIX ON THE POLYMORPHISM OF IBUPROFEN AND NAPROXEN IN COMMERCIALLY AVAILABLE PHARMACEUTICAL FORMULATIONS

ANALIZA WPŁYWU MATRYCY TABLETKOWEJ NA POLIMORFIZM IBUPROFENU I NAPROXENU W DOSTĘPNYCH KOMERCYJNIE PREPARATACH FARMACEUTYCZNYCH

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Pharmaceutical formulations, in addition to the medicinal substance(s), contain added excipients that do not cause detrimental effects on the body. At the same time, excipients make it possible to create a pharmaceutical product that will exhibit properties in terms of mechanical, physical, chemical and microbiological stability. Instead, these substances can act as release modifiers or improve bioavailability parameters. The addition of excipients makes also possible to achieve the best possible handling properties, allowing the drug to be dosed as safely and easily as possible. Literature data indicate that excipients, especially polymeric, can affect the polymorphism of the active substance. This influence can be evaluated using thermal and spectroscopic methods.

In the study, differential scanning calorimetry (DSC) and spectroscopic studies (FTIR and Raman spectroscopy) of ibuprofen and naproxen standards and pharmaceutical preparations containing these medicinal substances in their compositions were carried out.

DSC results indicated that a sharp melting peak was observed on the DSC curves of the standards, confirming their crystalline form. DSC results obtained for pharmaceutical formulations also indicated that the enthalpy of melting is sometimes lower than calculated by the percentage of active ingredient in the formulations. in addition, the melting peak is often broadened and shifted toward lower temperatures, suggesting the influence of excipients on the polymorphism of drug substances. The FTIR and Raman spectra of pharmaceutical formulations contained all peaks characteristic of the active substances. On the other hand, at the same time, possible chemical interactions between the components of the preparations have been excluded.

CHOROBY TROPIKALNE W POLSCE: BYŁY, SĄ CZY BĘDĄ?

TROPICAL DISEASES IN POLAND: WERE THEY, ARE THEY – WILL THEY BE?

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W Polsce w ostatnich latach można było zaobserwować coraz większą liczbę dni ciepłych, zwiększyła się średnia roczna temperatura, ubyło natomiast dni z temperaturą < 0 st. C. Jednak to nie w ostatnich latach zanotowano rekord temperatury – 40,2 st. C zapisano w 1921 r. w Pruszkowie w województwie opolskim. Malaria, denga, chikungunya, ameboza (pełzakowica), dur brzuszny, żółta gorączka, cholera, filarioza i inne. Wiele z nich jest przenoszona przez wektor, niektóre zaś drogą fekalno-oralną.

Zgodnie z danymi ECDC, komary *Aedes albopictus* (denga, zika, chikungunya) w 2023 r. były obecne już w 13 krajach europejskich i 337 regionach, głównie na południu Europy. Dla porównania 10 lat temu: *A. albopictus* w ośmiu krajach Europy.

Pod względem podróżowania rekordowy był rok 2019, przed pandemią COVID-19. W roku 2023 w zasadzie odrobiono straty, a przemieściło się wówczas z różnych powodów 1,286 mld ludzi. W 2022 r. ponad 5,5 mln polskich obywateli przekroczyło strefę Schengen drogą lotniczą, a 20 mln Polaków zadeklarowano chęć wyjazdu. Od 2010 r. gorączka denga występuje lokalnie w Europie, pierwsze rodzime przypadki zanotowano w Chorwacji, a później we Francji, Hiszpanii i Włoszech. We Włoszech w 2007 r. odnotowano pierwszą w Europie rodzimą epidemię zakażeń wirusem chikungunya.

W celu ochrony przed ukłuciem i zachorowaniem, należy stosować repelenty zgodnie z rekomendacjami:

DEET (N, N-dietyl-meta-toluamid) – Off!, Mugga, Ultrathon

Ikarydyna (Pikarydyna, KBR 3023) – Autan, Moskito Guard

IR3535 – Foresta Spray, Ziaja antybzzz

OLE syntetyczny olejek eukaliptusa cytrynowego – Reppel, Cutter

A także moskitiery, odpowiednią odzież, insektycydy.

Malaria – jedna z najstarszych chorób zakaźnych świata. Plasmodia pochodzą od wolno żyjących pierwotniaków zawierających chlorofil: 500 mln lat temu. W 2022 r. zostało zanotowanych o 5 mln przypadków więcej niż za rok 2021. Konieczna odpowiednia temperatura otoczenia do 1) rozwoju komarów malarycznych, 2) dojrzewania form sporogonicznych pasożyta. Dobrze także wiadomo, że w dwudziestoleciu międzywojennym opisano tysiące zachorowań na malarię. Wobec łagodnych zim i wyższej temperatury średniej, a także ustabilizowanej obecności kompetentnego wektora malarii, można spodziewać się w Polsce reintrodukcji malarii. Podobnie jak choroby arbowirusowe, łagodny klimat i rozprzestrzenianie się komara *Aedes* w Europie może doprowadzić do rodzimych przypadków w Polsce.

SPORTS SPECIALIZATION AND INJURY PATTERNS BETWEEN TEAM AND INDIVIDUAL YOUTH SPORTS. THE PROJECT "SCIENCE OF HEALTHY SPORTS FOR CHILDREN AND ADOLESCENTS"

SPECJALIZACJA SPORTOWA I WZORCE URAZÓW MIĘDZY ZESPOŁOWYMI I INDYWIDUALNYMI SPORTAMI MŁODZIEŻOWYMI. PROJEKT „NAUKA ZDROWEGO SPORTU DLA DZIECI I MŁODZIEŻY"

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Specialization in sports can have a detrimental impact on athletic performance, potentially leading to early burnout or an increased risk of injury. Moreover, any previous injury to the musculoskeletal system is one of the most well-known risk factors for subsequent injuries. Recent studies indicate a rising trend in injuries among certain sports disciplines, particularly highlighting the problem in individual sports. Therefore, the aim of our study was to compare sports specialization, training, and past injuries between young athletes participating in team sports and individual sports.

A total of 238 young athletes (12.5±1.7 years, 43.3% female) were examined during meetings held as part of the "Science of Healthy Sports for Children and Adolescents" project between 2022 and 2024. Data on specialization, injury history, training information, and body composition analysis were collected using custom-designed questionnaires and face-to-face interviews.

Among all participants, 105 (44.1%) reported at least one musculoskeletal injury in the past year, including 19 (8%) who reported more than one injury. There was no statistically significant difference between athletes in individual and team sports ($p = 0.08$). However, when considering injuries to the upper limbs, lower limbs, and torso, team athletes experienced more lower limb injuries than individual sport athletes ($p = 0.49$). Additionally, high sports specialization was more prevalent among team sport athletes ($n = 57$, 74%) ($p = 0.09$). Furthermore, team sport athletes demonstrated a higher weekly training volume in their primary sport ($p < 0.01$) compared to individual sport athletes.

In summary, our study highlights that sports specialization is more prevalent among team athletes, who also engage in higher weekly training volumes compared to their counterparts in individual sports. Despite the lack of a statistically significant difference in overall injury rates between the two groups, team athletes are more prone to lower limb injuries. These findings underscore the importance of monitoring training loads and injury patterns to mitigate risks associated with high sports specialization, especially in team sports.

EVALUATION AND PHYSIOTHERAPEUTIC MANAGEMENT IN CASES OF SPINE PAIN IN PATIENTS FOLLOWING EXTENSIVE ABDOMINAL SURGERIES – A CASE STUDY

OCENA I POSTĘPOWANIE FIZJOTERAPEUTYCZNE W PRZYPADKACH BÓLU KRĘGOSŁUPA U PACJENTÓW PO ROZLEGŁYCH OPERACJACH BRZUSZNYCH – STUDIUM PRZYPADKU

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Introduction: Abdominal scars are rarely seen as a cause of musculoskeletal pain due to the body's compensatory capabilities. Abdominal surgeries often cause fascial adhesions, leading to abdominal pain, digestive disorders, constipation, back pain, and postural disturbances.

Objective: to present physiotherapeutic options for treating back pain in patients after extensive abdominal surgeries.

Material and methods: A 29-year-old patient who underwent partial nephrectomy in 2019 presented with increasing thoracolumbar (Th-L) spine pain. The patient had digestive problems, constipation, and difficulty losing weight. Functional diagnostics excluded injuries and discopathies but found increased muscle tension in the lumbar region and impaired fascial mobility in the thoracolumbar region. The patient had a large scar on the right side of the abdomen, assessed using the MSS and POSAS scales before and after therapy. The therapy included 10 sessions (twice a week) with visceral therapy, manual therapy, kinesiotaping, and exercises.

Results: Thoracolumbar pain decreased from 7 to 2 on the VAS scale. There was significant improvement in the color, appearance, contour, distortion, and structure of the scar. The POSAS scale showed reduced itching and improved overall scar assessment. The patient's posture and bowel movement regularity also improved.

Conclusions: Scars after abdominal surgeries can cause muscle tension and impaired fascial mobility, affecting spinal biomechanics and causing pain. Comprehensive physiotherapeutic assessment should consider the scar's condition and its impact on the musculoskeletal system. Therapy improving scar elasticity and mobility can provide relief and enhance spinal function.

DIAGNOSTIC CHALLENGES OF CUTANEOUS INFECTION IN AN IMMUNOCOMPETENT ADOLESCENT

WYZWANIA DIAGNOSTYCZNE NOKARDIOZY SKÓRNEJ U NASTOLATKA Z PRAWIDŁOWĄ ODPORNOŚCIĄ IMMUNOLOGICZNĄ

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Introduction: Nocardiosis is a rare infection caused by aerobic, gram positive *Nocardia* bacteria. Infection occurs because of inhaling aerosol containing bacteria or through damaged skin contaminated by soil causing pulmonary or cutaneous subtype respectively. While pulmonary nocardiosis typically affects immunocompromised individuals, the cutaneous form can occur in immunocompetent patients. Due to variety of non-specific symptoms, the diagnosis of Nocardiosis remains challenging.

Case presentation: This case report highlights the diagnostic challenges of cutaneous nocardiosis in an otherwise healthy 16-year-old adolescent. in February 2023, the patient noticed a small, non-painful thickening on the dorsal surface of the left hand. Over the next month, the mass progressively enlarged and became painful. Despite treatment with anti-inflammatory, antibiotic and anti-fungal medications, no improvement was observed. in April 2023, the patient underwent extensive examinations, including skin and bone marrow biopsies, to investigate potential inflammatory or proliferative conditions. However, these tests didn't reveal any specific abnormalities. Finally, in May 2023, histopathological examinations excluded neoplastic etiology and microbial testing confirmed the diagnosis of Nocardia infection.

Conclusions: This case underlines the importance of considering rare diseases in the differential diagnosis of persistent, ambiguous cutaneous lesions, especially when initial treatment fails. It also highlights the diagnostic challenges encountered requiring a comprehensive approach integrating various examinations to reach an accurate diagnosis. Early diagnosis and appropriate therapy are crucial for successful management of cutaneous nocardiosis, as illustrated by the patient's eventual treatment response.

THE MENTAL HEALTH CONDITION OF POLES AND THEIR REPRODUCTIVE PLANS

STAN ZDROWIA PSYCHICZNEGO POLAKÓW A ICH PLANY PROKREACYJNE

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Introduction: According to the forecasts of the Central Statistical Office for the years 2013-2050, unfavorable changes in the number and age structure of women of reproductive age are expected, which will result in a systematic decrease in the number of newborn children.

Aim of the study: The main aim of the research project is answering the question, how the mental health condition of Poles influences the decline in fertility in Poland.

Material and methods: 736 Poles, aged 18-45, took part in the study. to conduct the study, the CAWI method was used. A descriptive online survey was conducted and provided quantitative data. The obtained data were subjected to statistical analysis.

Results: Our research indicated that the state of mental well-being has a significant correlation with procreation plans of Poles. Good mental health is considered as one of the most conducive factors to planning an offspring. Despite the huge dissatisfaction with the state of mental health, the majority of the respondents did not seek any treatment. Every tenth surveyed stated that they had experienced a traumatic obstetric or parental situation. The analysis showed a strong correlation with planning an offspring and experiencing a difficult situation in the past.

Conclusions: Planning offspring is a problem that should be approached in a multi-faceted manner. One of the most important factors influencing reproductive plans indicated by Poles is good mental health. Despite the increasing awareness of mental health, Poles still do not seek professional help. Traumatic obstetric events reduce the desire to have another child.

CO-OCCURRENCE OF *CRYPTOSPORIDIUM* AND *GIARDIA* SPECIES IN ENVIRONMENTAL AND CLINICAL SAMPLES

WSPÓŁWYSTĘPOWANIE GATUNKÓW *CRYPTOSPORIDIUM* I *GIARDIA* W PRÓBKACH ŚRODOWISKOWYCH I KLINICZNYCH

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Cryptosporidium and *Giardia* are parasitic pathogens commonly found in both environmental and clinical settings. This study aims to compare the co-occurrence of these parasites in sewage samples versus other types of samples, providing insights into their distribution and potential public health implications.

A dataset comprising 83 samples was analysed and categorised as sewage (sewage sludge from north France and raw sewage from Gdańsk) or non-sewage (patients reporting gastrointestinal complaints). Statistical analyses, including co-occurrence frequency and comparative assessments, were conducted to evaluate the differences between sewage and non-sewage samples.

Among 20 sewage samples, 70% (14 out of 20) exhibited *C. parvum* and *Giardia* sp. presence. About 30% (6 out of 20 samples) contained *C. parvum* or *Giardia*.

The analysis reveals a significantly higher co-occurrence of *Cryptosporidium* and *Giardia* in sewage samples (SC) compared to non-sewage samples. This observation suggests that sewage environments are hotspots for the co-existence of these parasites, likely due to higher contamination levels and diverse sources of pathogens. in contrast, non-sewage samples show a lower co-occurrence rate, indicating more isolated incidences of parasitic infections. These findings highlight the need for targeted interventions in sewage management to reduce the spread of these parasites and protect public health.

USE OF PSYCHOACTIVE SUBSTANCES DURING PREGNANCY – A NEW OR OLD MAJOR HEALTH PROBLEM FOR MOTHER AND FETUS?

UŻYWANIE SUBSTANCJI PSYCHOAKTYWNYCH W CIĄŻY – NOWY CZY STARY PROBLEM ZDROWOTNY DLA MATKI I PŁODU?

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The use of psychoactive substances during pregnancy is increasing worldwide, posing serious health risks for pregnant women, negative consequences for fetal and neonatal health. Commonly abused substances include cocaine, amphetamines, opioids, marijuana, ethanol, tobacco, caffeine, and toluene-based solvents; polysubstance use is widespread.

Cannabis is the most commonly used illicit drug during pregnancy. Between 2005 and 2018, there was a significant increase in the proportion of pregnant women using cannabis (1.2% vs. 17.1%, $p = 0.0004$) and cocaine (including crack) (4.7% vs. 14.3%, $p = 0.038$). Considering the first substance reported as leading to dependence, heroin significantly decreased (78.8% vs. 50.0%, $p = 0.0002$), whereas cannabis significantly increased (5.9% vs. 25.7%, $p = 0.0005$).

Prevalence of cannabis use was higher among women with small-for-gestational age (SGA) (10.2%), low birthweight (9.7%), and cigarette use during pregnancy (21.2%). Opiate use among pregnant women can range from 1% to 2% to as high as 21%. in the United States, opioid use among women who gave birth quadrupled between 1999 and 2014 (from 1.5 per 1,000 delivery hospitalizations to 6.5; $p < 0.05$). Amphetamine use increases the risk of hypertension, pre-eclampsia, premature placental abruption, stillbirth and neonatal death. Meta-analysis confirmed amphetamine and cocaine exposure in pregnancy significantly increases the risks of preterm birth, low birthweight, and SGA. Heroin crosses the placenta, opiate-dependent women experience a sixfold increase in complications such as low birthweight, toxemia, third-trimester bleeding, puerperal morbidity, fetal distress and meconium aspiration, and low-weight babies.

Substance use is associated with adverse birth outcomes and should be identified by physicians providing antenatal care.

THE ROLE OF RELIGIOUS VALUES AND BELIEFS IN SHAPING MENTAL HEALTH AND DISORDERS

ROLA WARTOŚCI I PRZEKONAŃ RELIGIJNYCH W KSZTAŁTOWANIU ZDROWIA PSYCHICZNEGO I ZABURZEŃ PSYCHICZNYCH

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Mental health is an area of continuous analysis, both in the context of understanding increasingly precise diagnostic criteria and the impact of therapeutic methods. in addition to these well-established directions of analysis and search, psychology tries to explore the factors that bring us closer to understanding the mechanisms of the genesis and development of disorders, as well as their importance in psychoeducation or therapy. The increased interest in issues of spirituality/religion observed in recent years translates into the pursuit to explore the relationship between religion/spirituality and health. This article reviews research into the ability of religion and spirituality to benefit or harm the mental health of believers. We also examine the mechanism of developing religious delusions in schizophrenia. Religion and spirituality can promote or damage mental health. This potential demands an increased awareness of religious matters by mental health practitioners, as well as ongoing attention in clinical psychology research.

PHYSIOTHERAPY CARE FOR A PATIENT WITH VULVODYNIA – CASE STUDY

OPIEKA FIZJOTERAPEUTYCZNA NAD PACJENTKĄ Z WULWODYNIĄ – OPIS PRZYPADKU

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Introduction: Vulvodynia is chronic vulvar pain of unknown etiology, lasting for at least three months. It significantly reduces quality of life, affecting both psychophysical health and social relationships. It hinders sexual intercourse and gynecological examinations.

Objective: to present the potential of physiotherapy and interdisciplinary collaboration in treating vulvodynia.

Material and methods: A 32-year-old patient with vulvodynia, which prevents her from engaging in sexual intercourse and undergoing preventive examinations. She complains of recurrent intimate infections, migraines, painful menstruation, urinary urgency, irritable bowel syndrome symptoms, and a past gastric inflammation in 2022. She has been married for 5 years, with no pregnancies or births. Previously treated in another center, she discontinued the therapy. She is under the care of a psychologist and psychiatrist. She tolerates only walking, dancing, and exercises on a large ball. Vaginal examination was impossible due to severe pain. Palpation revealed tension in the hip girdle area and significant tenderness of the sacrum and coccyx. CSIA, DASS, and PCS tests were performed. The therapy plan was based on a graded exposure approach, including manual therapy and relaxation exercises. Home exercises, including partner work, were recommended.

Results: After 6 months of therapy, the patient experienced significant reduction in tension and pain, which allowed for a full transvaginal ultrasound and cytology examination. The patient continues therapy and regular follow-up visits.

Conclusions: Physiotherapy is effective in treating vulvodynia. Individualized therapy tailored to the patient's needs and interdisciplinary collaboration are crucial for successful treatment, enabling a holistic approach to the patient's problems.

CASE REPORT OF SURGERY FOR PERITONEAL HEMORRHAGE IN PATIENT AT 33 WEEKS GESTATION

OPIS PRZYPADKU PACJENTKI OPEROWANEJ Z POWODU KRWOTOKU DO JAMY OTRZEWNEJ W 33 TYGODNIU CIĄŻY

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A 29-year old woman in her first pregnancy at 32 weeks and 2 days, presented to the obstetrics and gynecology emergency department on May 14, 2024 with epigastric pain and vomiting. After triage, a cardiotocography was recorded. Due to the FHR deceleration to approximately 90 beats/min, the patient was admitted to the Delivery Ward. The patient had no history of abdominal surgery or chronic diseases except for hypothyroidism during pregnancy.

Due to the peritoneal symptoms and the threat of intrauterine fetal hypoxia, she was immediately transferred to the operating room. After opening the abdominal cavity, under general anesthesia a large amount of blood was found estimated to 2000 ml. A cesarean section was performed, general surgeon was asked for consultation. Massive adhesions were found in the abdominal cavity connecting the posterior wall of the uterus with the parametria on both sides and the intestinal surface, preventing access to the Douglas pouch, raising suspicion of endometriosis. The source of bleeding were the disrupted venous vessels of the left parametrium near the uterine fundus, which were sutured. Samples were taken for examination.

After the procedure, the patient was transferred to the Intensive Postoperative Surveillance Unit. During the hospitalization, the patient received transfusion of 5 units of red blood cells and 2 units of fresh frozen plasma because of a massive blond loss. Because of the elevated inflammatory parameters (CRP 258 mg/l) antibiotic therapy was needed in the postoperative period. The patient was discharged home on the day 7, in a good condition.

DETECTION, GENETIC CHARACTERIZATION AND VERTICAL TRANSMISSION OF TICK-BORNE ENCEPHALITIS VIRUS FROM SYLVATIC RODENTS FROM NORTH-EASTERN POLAND

WYKRYWANIE, CHARAKTERYSTYKA GENETYCZNA I TRANSMISJA WERTYKALNA WIRUSA KLESZCZOWEGO ZAPALENIA MÓZGU U DZIKICH GRYZONI Z PÓŁNOCNO-WSCHODNIEJ POLSKI

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Tick-borne encephalitis virus (TBEV) is a flavivirus widespread in Eurasia, capable of causing infection of the central nervous system. Three TBEV subtypes are known – European, Siberian, and Far-Eastern, differing in clinical course and outcome. On average, 70% of reported cases of TBE come from northeastern Poland. Although up to this day, only the European subtype was detected in Poland, all three subtypes were detected in Estonia and Latvia. Rodents are considered good indicators of TBEV circulation, carrying persistent latent infections.

270 rodents from three study sites in north-eastern Poland were captured. Blood was tested for the presence of anti-TBEV antibodies using IFA. RNA was isolated from rodent's brains and TBEV detection was carried out using RT-PCR. Additionally, embryos of TBEV-positive rodents were examined. TBEV-positive samples were sequenced and subjected to phylogenetic analysis.

We detected RNA of TBEV in 37 out of 270 brain samples with an overall prevalence of 13.7% (95%CL 10.5-17.5). The IgG antibodies were detected in 18 of 270 (6.7%) blood samples. Ten complete TBEV sequences were obtained. All detected TBEV strains belong to the European subtype, forming two clusters. Vertical transmission of the virus was observed.

To our best knowledge, we report the first complete genomic sequences of TBEV strains from Poland. Our study brings novel data for understanding TBEV circulation in rodent populations. We believe that biomonitoring of rodents against zoonotic diseases is the best way to predict high-risk sites, helping prevent human cases of TBE and thereby contributing significantly to public health.

MIDWIVES FACING CULTURAL CHALLENGES IN PERINATAL CARE FOR UKRAINIAN WOMEN

POŁOŻNE WOBEC WYZWAŃ KULTUROWYCH W OPIECE OKOŁOPORODOWEJ NAD KOBIETAMI Z UKRAINY

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Introduction: The outbreak of war in Ukraine in 2022 caused mass migration to Poland, mainly women and children. The regulations enable Ukrainian citizens to use medical services, including perinatal care. Already in the year when the war broke out, there was a significant increase in the number of births of Ukrainian children (over 12,000) in Poland.

Methods: We conducted qualitative research using an in-depth, semi-structured interview technique on a group of 16 midwives employed in hospital wards. We categorized the collected statements based on cognitive analysis, identifying important, recurring meanings, which became the basis for developing the categorization of their statements.

Results: We analyzed the obtained statements in terms of the presence of stereotypes and cultural barriers, difficulties in providing health care to culturally different patients, solutions used and intercultural competences of obstetric staff. Midwives pointed out the language barrier, including the lack of free access to an interpreter and translations of medical documentation, as the main difficulty in caring for patients from Ukraine. Some respondents (n = 8) noted differences in health beliefs and forms of child care. in four statements, midwives revealed cases of conscious worse treatment of patients from Ukraine by medical staff and one case of aggression.

Conclusions: The obtained results will be used to develop materials and recommendations regarding Good Practices in Contacts with Culturally Different Birthers, as an element of support for midwives and non-Polish-speaking patients.

CYKL KONFERENCJI NAUKOWYCH
INTERDYSCYPLINARNE SPOJRZENIE NA NAUKI O ZDROWIU
PAMIĘCI PROFESORA PIOTRA LASSA

ISBN 978-83-67147-44-6