MEDICAL UNIVERSITY OF GDAŃSK

BOOK OF ABSTRACTS

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29th International Student Scientific Conference

11th-13th of April 2024, Gdańsk, Poland

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ISBN 978-83-67147-36-1

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POLSKIE TOWARZYSTWO ANESTEZJOLOGII I INTENSYWNEJ TERAPII

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MIGRATION AND PLEURAL SEEDING OF ENDOMETRIAL TISSUE – THEORY OF THORACIC ENDOMETRIOSIS

Natalia Szczepańska

Students Scientific Association at Department of Thoracic Surgery, Medical University of Gdańsk, Gdańsk, Poland

Introduction

Thoracic endometriosis (TE) is a condition identified by presence of endometrial tissue outside of the uterine cavity, specifically in the pleural cavity. Histological confirmation of TE focuses on the presence of hormone receptor-positive endometrial stroma and glands. Evident histological features are rarely observed, which makes the diagnosis of TE challenging. One of four, currently existing, theories of catamenial pneumothorax assumes that endometrial cells migrate from pelvis, through peritoneum, injuring the diaphragm to ultimately transfer to the pleural cavity and visceral pleura. This mechanism explains formation of subpleural emphysematous blebs and pneumothoraces.

Aim

We have meticulously reanalysed the morphology of resected pulmonary specimens of two patients (39 and 37 year old) operated due to recurrent catamenial right-sided pneumothorax. Both patients were previously operated on due to pelvic endometriosis. After initial treatment with pleural drainage, they both underwent surgical treatment with wedge resection of subpleural lesions, pleurectomy and reconstruction of the damaged areas of diaphragm. Histopathological analysis indicated characteristics of TE subpleural lesions, such as cells positive for estrogen receptors, revealed by immunohistochemical (IHC) staining. The subpleural distribution of the lesions together with the presence of the defects of the diaphragm favours the mechanism of migration and direct seeding in the pulmonary pleura. The presence of TE in the pulmonary parenchyma is subtle in every case and was not appropriately visualised without adequate IHC staining.

Conclusion

Transdiaphragmatic migration and pleural seeding of the clusters of endometrial tissue is the most probable mechanism of TE. Appropriate IHC staining is absolutely required for pathological confirmation of TE in resected specimens.

BIOMEDICAL SCIENCES

EFFECT OF PYRVINIUM PAMOATE ON 4T1 BREAST CANCER PROGRESSION IN A MOUSE MODEL

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Introduction

Pyrvinium pamoate (PP) is an FDA-approved drug for pinworms, which is investigated as a treatment for cancer, including breast cancer. Triple negative breast cancer (TNBC) is considered the most aggressive subtype of cancer, and one of the mechanisms connected with its aggressiveness is epithelial-mesenchymal transition (EMT). EMT is linked with cancer progression, especially increased tumor spread, treatment resistance and reprogramming of metabolism.

Aim

The aim of the study was to analyse the metastatic process and molecular changes occurring in a mouse model of triple-negative breast cancer after PP treatment.

Methods and Materials

The experimental model was Balb/c mice with orthotopically administered 4T1-GFP cells. Mice were divided into two groups: the study group (n = 20) was administered PP intraperitoneally (incremental dose from 0.1 to 1 mg/kg) every 2 days, the control group (n = 20) received DMSO in PBS. Tumor growth was monitored with a caliper. After sacrifice, blood, primary tumors and organs (brain, liver, lungs) were collected for further histopathological analysis. RNA-Seq was performed from the primary tumor.

Discussion

Transcriptomic profiling of the primary tumors revealed that PP treatment, among others, enhances immune response and neutrophils chemotaxis. On the other hand, treatment inhibits genes identified with EMT such as *SERPINA3N,* and also related to extracellular components, e.g. *WNT4, VITRONECTIN*. Histopathological evaluation of livers showed that PP-treated mice have fewer macrometastases ($p = 0.07$), but more severe acute inflammation ($p = 0.06$).

Conclusion

The results obtained so far show that PP alters the progression of TNBC in the Balb/c mouse model, possibly via neutrophils recruitment to cancer foci. Further analysis on the acquired material is ongoing in order to broaden understanding of the molecular effect of PP on TNBC.

JNK INHIBITION PARADOXICALLY INDUCES APOPTOSIS IN NEUROBLASTOMA CELLS

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Introduction

c-Jun N-terminal kinase(JNK) is a well-evidenced apoptotic kinase. However, under specific stress conditions in tumours, JNK may paradoxically evoke the opposite, anti-apoptotic effect, while its inhibition induces the apoptosis, which sheds light on the novel therapeutic potential.

Aim

The primary objective of the study was to evaluate the effect of pharmacological JNK inhibition in human neuroblastoma (NB) cell line SH SY5Y.

Methods and Materials

The JNK inhibition was achieved using the small-molecule JNK inhibitor V. XTT colorimetric assay was used for the cytotoxicity analysis. SH SY5Y cells were exposed to JNK V at 0.1-100μM or 0.01% DMSO (solvent). Cells treated with 20% DMSO served as a positive control, whereas untreated cells as a negative control. Caspase-3 colorimetric assay was performed to assess the apoptosis induction. Cells were treated with JNK V at 0.75-100 μM and 0.01% DMSO. Positive control constituted cells treated with 10μM staurosporine, whereas negative control – untreated cells.

Discussion

XTT test demonstrated a significant cytotoxic effect of JNK V towards SH-SY5Y cells at concentrations as low as 0.75μM and higher. Importantly, the viability of cells exposed to 100μM JNK V was significantly decreased by 92% compared to the negative control. Caspase-3 assay demonstrated a significant increase of apoptosis induction after cells treatment with JNK V at concentrations ≥ 6μM as compared to the negative control.

Conclusion

NB is challenging, the most frequently occurring extracranial childhood tumour. We may assume that targeting JNK via pharmacological inhibitors may contribute to the development of a novel targeted therapy against NB, that would selectively induce the apoptosis of NB tumour cells. This work was funded by Medical University of Łódź, Poland (No. 503/5-108-05/503-51-001-19-00) and the National Science Centre, Poland (grant PRELUDIUM BIS 3 no. 2021/43/O/NZ5/02068).

BIOMEDICAL SCIENCES

THE EFFECT OF EPITHELIAL-MESENCHYMAL TRANSITION ON GENOME STABILITY OF BREAST CANCER CELLS

Agnieszka Stankiewicz[1], Justyna Topa[1], Paulina Nastały[1], Zbigniew Czyż[2], Clara Chaiban[3], Marta Popęda[1,4], Anna J. Żaczek[1], Aleksandra Markiewicz[1]

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Introduction

Epithelial-mesenchymal transition (EMT) is a physiological process shown to be hijacked by tumor cells. During EMT, cells acquire migratory capacities allowing increased malignancy and metastasis. What is more, EMT was shown to be linked with DNA integrity.

Aim

My hypothesis is that mesenchymal phenotype correlates with higher levels of DNA repair/stability of breast cancer cells and EMT inhibition can decrease genomic stability.

Methods and Materials

GFP-expressing mouse cancer cell line of triple negative breast cancer (TNBC) subtype – 4T1-GFP was stained for EpCAM/E-cadherin (epithelial markers) in order to isolate single cells with epithelial (EpCAM/E-cadherin^{high}) or mesenchymal (EpCAM/E-cadherin^{low}) phenotype. Genomic aberrations of single 4T1-GFP cells (n = 13) with different EMT phenotypes were determined with low-pass sequencing. EMT inhibition in the 4T1-GFP cell line was performed with Pyrvinium Pamoate (PP) in 2D and 3D cell culture models. Based on publicly available gene expression dataset of human TNBC cell lines (n = 27), the expression level of DNA repair-related genes was compared between cell lines with epithelial and mesenchymal phenotype.

Discussion

Low-pass sequencing of single 4T1-GFP cells revealed a lower number of aberrant segments in cells with mesenchymal (EpCAM/E-cadherin ^{low}) phenotype (p = 0,0437). Treatment of 4T1-GFP cells with PP increased the level of epithelial markers and decreased the invasiveness (p < 0,0001) of the cells indicating the reversal of EMT process. Analysis of the gene expression dataset of human TNBC cell lines showed a positive correlation between the level of expression of DNA repair-related genes and proliferation in cell lines with mesenchymal (p = 0,002) but not epithelial (p = 0,102) phenotype.

Conclusion

Mesenchymal phenotype might confer higher genomic stability to TNBC cancer cells. It remains to be determined if modulation of EMT phenotype with PP can affect genomic aberrations in cancer cells.

THE EFFECT OF BASAL BREAST CANCER CELL PHENOTYPE ON THE EXPRESSION OF IMMUNE-RELATED MARKERS

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Introduction

Epithelial-mesenchymal transition (EMT) is a source of phenotypic heterogeneity of tumour cells and is commonly observed in basal breast cancer. In basal tumours, the mesenchymal phenotype of cancer cells has been linked with a worse prognosis and resistance to immunotherapy.

Aim

To evaluate the effect of EMT status on basal cell lines and the level of selected immune-related proteins.

Methods and Materials

Using publicly available transcriptomic data, we compared the expression of selected immune-related genes in epithelial (EPI, n = 11) and mesenchymal (MES, n = 12) basal cell lines. Based on the results, we chose two epithelial cell lines to induce EMT (HCC70 – treatment with TGFβ; HCC1806 treatment with TGFβ and TNFα) and two mesenchymal cell lines (CAL-51 and CAL-120) to inhibit EMT with pyrvinium pamoate (PP). As a part of an ongoing analysis, after the induction/inhibition, qPCR (EMT phenotype markers: *CDH1, EPCAM, PAI1, VIM*, *SNAI1*, *SNAI2*, *TWIST1*; stemness markers: *ALDH1A1*, *POU5F1*) and flow cytometry (testing MHC-I) have been conducted.

Discussion

In the transcriptomic data analysis, a decrease in the expression of *HLA-DQB1* ($p = 0.015$) and immunoproteasome subunits *PSMB10* ($p = 0.009$) and *PSMB8* ($p = 0.079$) was observed in the cell lines of MES phenotype. Moreover, the expression of immune checkpoints *CD86* ($p = 0.045$), *ICOSLG* ($p = 0.001$), *VTCN1* ($p = 0.003$), *TNFRSF14* ($p = 0.012$) and *GAL9* ($p = 0.00009$) was significantly decreased in MES.

qPCR has shown upregulation of mesenchymal markers – 5-fold increase in *PAI1*, 43-fold increase in *VIM* in HCC1806, and a 335-fold increase in *PAI1* expression in HCC70, indicating a successful EMT induction.

Conclusion

In basal cell lines, mesenchymal phenotype might be linked with decreased immunogenicity (via decrease immunoproteasome subunits), whereas epithelial phenotype shows increased level of inhibitory immune checkpoints. This indicates that the EMT phenotype of basal breast cancer cells may influence the immune response, but via different mechanisms.

BIOMEDICAL SCIENCES

MEASURABLE MORPHOLOGICAL FEATURES OF SINGLE CIRCULATING TUMOR CELLS IN SELECTED SOLID TUMORS

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Introduction

Liquid biopsy has developed into many technologies offering studies of circulating tumor cells (CTCs), which deepen knowledge of the biology of metastasis. Nevertheless, examination of CTCs is mostly limited to their enumeration and usually 2-3 markers-based phenotyping. In contrast, quantitative analysis of their morphological details might extend our knowledge about CTCs and improve isolation methods dependent on their physical features such as size, and deformability.

Aim

This study was conducted to describe CTCs' size, shape, presence of protrusions and micronuclei across various types of advanced cancers.

Methods and Materials

Patients with lung (n = 29), ovarian (n = 24), breast (n = 54), and prostate cancer (n = 33) were recruited at the Medical University of Gdańsk in the years 2018-2022. Immunofluorescent staining was prepared as described. CTCs were classified using both epithelial (pan keratins) and mesenchymal (vimentin) markers into 4 phenotypes using imaging flow cytometry. The morphology of CTCs were determined using a QuPath. The statistical analysis was conducted using IBM SPSS Statistics.

Discussion

CTCs (n = 1156) were larger, and more irregular in shape than leukocytes. Epithelial and mesenchymal CTCs manifested the largest and the smallest diameter, respectively. The largest CTCs were identified in lung, whereas the smallest – in prostate and breast cancers. Epithelial and CTCs negative for both epithelial and mesenchymal markers were the most elongated, whereas mesenchymal CTCs were the most irregular. Protrusions and micronuclei were observed extremely rarely within CTCs (0.59-0.84% of CTCs) of breast and prostate cancer. Micronuclei were observed only in epithelial and epithelial-mesenchymal CTCs.

Conclusion

This study underscores variability in morphology of CTCs upon their phenotypic classification or the particular organ system affected. To the best of our knowledge, it demonstrates, for the first time, the morphological measurements of CTCs undergoing epithelial-mesenchymal transition, and some specific morphological details within CTCs in general.

ANTIBIOTIC RESISTANCE AND SALINITY SENSITIVITY OF ENVIRONMENTAL SHEWANELLA SP. ISOLATES-RARE, BUT DANGEROUS HUMAN PATHOGENS

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Introduction

Our study compares two species in the Shewanella genus in the context of their antibiotic resistance and ecological adaptations. These gram-negative, rod shaped bacteria mostly cause food spoilage and fish diseases, but they can be responsible for soft tissue and biliary tract infections in humans. They may also cause bacteremia in neonates, pneumonia and otitis media.

Most infections historically attributed to *S. putrefaciens* are actually caused by *S. algae*, a bacterium characterised by a different C+G content, temperature tolerance, biochemical properties and haemolytic abilities. *S. algae* seems to be the more prolific human pathogen among the two.

Aim

Our aim was to screen environmental Shewanella isolates for emerging antibiotic resistance.

Methods and Materials

Fourteen *Shewanella* isolates, of which 10 were identified as *S. putrefaciens,* were found in the sand and water along the coast of Gulf of Gdańsk and identified by MALDI-TOf mass spectrometry. We tested their resistance to 9 different antibiotics in accordance to EUCAST-set standards of susceptibility testing. We also cultured them in broths with differing sodium chloride content to test their preferred salt concentration. We have shown the ability of *Shewanella putrefaciens* to grow at 5% salt solution, with highest growth at 2%, while S. algae exhibited the highest growth at 5%. None of the *S. algae* isolates were antibiotic resistant.

Discussion

These findings are consistent with the current literature. It requires further investigation, if our *S. putrefaciens* isolates can grow in 6% salt solution, as it is currently thought that only *S. algae* can grow in such media.

Conclusion

In conclusion, we tested antibiotic resistance and salt tolerance of a potentially dangerous pathogen found in the environment at the Polish coast. This knowledge has potential clinical implications for healthcare providers in this region.

BIOTECHNOLOGY, BIOMEDICAL ENGINEERING AND BIOINFORMATICS

POTENTIAL FOR COMPASSIONATE BEHAVIOR IN ROBOTS — AN ANALYSIS FROM THE PROSPECT OF MEDICAL ETHICS

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Introduction

Compassion seems to be an essential component of quality healthcare – even the intensity, duration, and objective measurements (for example IL-8 and neutrophils measures) of the most ordinary common cold greatly change when patients perceive doctors as compassionate. In a cross-sectional study, a group of certified healthcare professionals evaluated the responses of doctors and chatbots to patient inquiries posted openly on a public social media forum, using 195 randomly selected patient questions. The responses provided by a chatbot received much higher ratings for quality and empathy than those from doctors; these findings could imply that AI assistants might be useful in assisting with the preparation of responses to patient questions. The proportion of responses rated *empathetic* or *very empathetic* was 9.8 times higher for chatbots.**Aim**

We feel compassion for others' suffering, yet compassion itself hurts us by making suffering mutual. Therefore, we should pose a question: how mutual it should be and could it become our moral duty to foster it?

Methods and Materials

Methodologically, the work will be at the intersection of the humanities and sciences, the speech will be in the form of a lecture.

Discussion

Perhaps, a 'compassionate Dr. Bot', who in magazines appears to us as more compassionate than a human doctor, could be a case in point. Probably we could find some rationale behind the human willingness to create such a model and better understand the value of compassion, and the ideal behind the creation of Dr. Bot is not as abstract as it might first seem.

Conclusion

In light of semantic and behavioral aspects, we must admit that the idea of "compassionate robots" functions as a sensation. We categorize compassion in discourse according to our own premises, because if compassion requires understanding, it seems morally mutual.

GENETIC DIAGNOSIS IN PATIENTS WITH LEUKODYSTROPHY USING DIFFERENT APPROACHES OF NGS DATA ANALYSIS

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Introduction

Leukodystrophies (LD) are a heterogeneous group of rare, genetically driven disorders that primarily affects brain white matter. There have been several genes known to be causative of LD. Symptoms include different forms of neurological manifestations. The diagnostic process includes brain MRI and genetic tests. Application of next-generation sequencing (NGS) techniques facilitates diagnosis in difficult cases.

Aim

The aim of the study was to establish a genetic cause of symptoms indicative of LD in patients, using different methods of NGS data analysis, and to compare the utility of automated algorithm and interpretation tools to the human work.

Methods and Materials

A group of 20 patients of different ages were recruited. Neurological manifestations, and MRI findings in patients, were indicative of LD. Blood samples from patients and their families were collected. Isolated DNA was sent for whole-exome-sequencing (WES). Data was analyzed in two approaches. In the first one, we used Intelliseq software, in which the symptoms were coded, using The Human Phenotype Ontology (HPO) terms and the data was interpreted by an automated bioinformatic algorithm. In the second approach, data was analyzed by a research group in which we stratified the variants based on their traits and literature data. Results were analyzed in comparison to the phenotype.

Discussion

Automated data analysis using Intelliseq software showed no evident pathogenic variants that would contribute to the phenotype observed in patients. Variants revealed by Intelliseq did not match the patients' phenotype or inheritance. Data analysis by a research group revealed other variants that seemed missed by Intelliseq software and would qualify for segregational analysis.

Conclusion

Dedicated platforms for NGS data analysis are a helpful tool. However, automated data analysis might be ineffective in the diagnosis of cases where human supervision is still necessary. Improvement of bioinformatic tools should solve encountered problems.

BIOTECHNOLOGY, BIOMEDICAL ENGINEERING AND BIOINFORMATICS

FGFR2/IRS-1 INTERDEPENDENCE IN PROGRESSION OF ER-POSITIVE BREAST CANCER

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Introduction

Luminal breast cancer (BCa) is defined as estrogen receptor positive (ER+) or highly expressing ER-related genes. Emerging resistance to anti-ER therapy remains the main challenge in patients' treatment. Fibroblast growth factor receptor 2 (FGFR2) signalling has been proven to drive resistance to anti-ER therapies by altering ER transcriptional activity and ER-dependent gene expression including IRS1 (insulin receptor substrate 1). IRS-1 forms complexes with ER and as an effector of FGFR2 signalling may contribute to regulation of ER function and modulation of cell response to anti-ER therapies.

Aim

The aim of the project focuses on establishing IRS-1 prognostic value and its role in FGFR2-dependent resistance in ER+ BCa.

Methods and Materials

MCF7 and T47D luminal BCa cell lines (wild type and overexpressing IRS1) were grown in 3D culture (soft agarose and Matrigel®) in presence of FGF7 (FGFR2 ligand) and/or NT-157 (IRS-1 selective inhibitor) and/or Tamoxifen (selective ER modulator) and/or Fulvestrant (selective ER degrader). FGF7 impact on IRS-1 expression/phosphorylation was examined using RT-qPCR and Western Blotting, respectively. Influence of FGFR2 signalling on ER-IRS-1 complex formation was tested with the use of Proximity Ligation Assay.

Discussion

IRS-1 overexpression led to decrease in sensitivity to Tamoxifen/Fulvestrant in cells grown in 3D culture. Furthermore, IRS-1 inhibition abolished FGF7-dependent protective effects from anti-ER drugs. FGF7 stimulation also affected IRS-1 phosphorylation and induced ER-IRS-1 complex formation. All these results indicate that IRS-1 might be involved in FGFR2-mediated resistance to anti-ER drugs through its interactions with ER.

Conclusion

Taken together, our results indicate that FGFR2 activity regulates IRS-1-ER interplay, which in turn can lead to resistance to anti-ER therapies in luminal BCa. Integrating IRS-1 modulation into patient treatments, in combination with anti-ER drugs, holds promise for enhancing therapeutic outcomes in ER+ BCa patients.

REVOLUTIONIZING HEALTH RESEARCH USING TEXTUAL PATTERN RECOGNITION IN IMAGES

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Introduction

The case report, authored by a postgraduate Global Health student, explores the evolution of QR Code solutions during the Covid-19 pandemic for facilitating global travel. Initially considered costly with inherent failures, the research pivoted to leverage QR Codes for color identification through an open-source platform. The report will showcase a demonstration highlighting this innovative approach at the upcoming event.

Drawing from recent experiences with MS Word, the author utilized textual information to comprehend images, colors, and patterns. The author seeks to present these findings at the conference, fostering knowledge exchange and collaborative learning in the field of AI in healthcare.

Aim

In this discussion, the author shares insights on how the pandemic prompted the development of crucial knowledge in AI healthcare, incorporating advanced technologies like pattern recognition. Emphasizing the need for enhanced technology skills in the workforce, the author believes that engaging students in AI discussions at this conference is key. The second aim is to use this innovation, including pattern recognition, to train upcoming medical students. Ultimately, the third aim is to improve healthcare through the application of advanced technology.

Methods and Materials

In presenting findings from Canada, the author proposes a cost-effective alternative to pandemic travel responses. The abstract highlights a primary focus on QR Code developed in response to the pandemic. The presentation or poster will build on, emphasizing color identification and, significantly, pattern recognition through words.

Discussion

Recognizing the looming threat of potentially deadlier pandemics, the paper advocates for proactive solutions.

Conclusion

Leveraging over 10 years of experience in the tech sector and 7 years as a post-secondary student, the author shares insights into the journey that led to the development of this solution.

INTERNAL MEDICINE – CASE REPORTS

ONE IN A MILLION – A CASE REPORT OF BUDD-CHIARI SYNDROME AND IMPORTANCE OF IMAGING TECHNIQUES

Zuzanna Ostrowicz

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Introduction

Budd–Chiari syndrome is a very rare condition, affecting one in a million adults. It can be defined as hepatic venous outflow obstruction occurring at any level between the small hepatic veins and the junction of the inferior vena cava and the right atrium. The clinical picture may vary significantly – many patients might be asymptomatic for many years or present fulminant hepatic failure at first sight. This is why the diagnosis of this syndrome heavily relies on imaging techniques.

Case discussion

In March 2023 a 39-years-old woman was admitted to Gastroenterology Ward in WSS Olsztyn due to elevated cholestatic markers. Deviation from the normal state in the physical examination revealed an enlarged liver, palpable at around 7 cm. Patient denied alcohol consumption, mushroom or herb ingestion, contact with chemicals, and exposure to toxins. Due to suspicion of an autoimmune background in the described pathologies and the patient's history, an immunological panel of tests was conducted. Unfortunately, results did not indicate the reason of patient’s condition. Finally, imaging methods – abdominal MRI and angiography CT showed a contrast defect in the middle hepatic vein, raising suspicion of a Budd-Chiari syndrome. To confirm the diagnosis ultrasound with Doppler function was performed – hepatic veins were not visualised, and there were no traces of flow in the Doppler option at their location.

Conclusion

The results of imaging studies, such as MR, CT, or ultrasound with Doppler function, allow for precise localization and assessment of obstruction in the hepatic veins. The importance of a prompt and accurate diagnosis of Budd-Chiari Syndrome has been emphasized, especially considering the clinical diversity of this condition. Imaging methods, with their high sensitivity and specificity, serve as invaluable tools assisting physicians in establishing an accurate diagnosis, thereby enabling effective patient management and the adaptation of an appropriate treatment plan.

NON-STANDARD aHUS COURSE AND INCLUSION IN THE DRUG PROGRAM – CASE REPORT

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Introduction

80–93% of patients with atypical hemolytic uremic syndrome improve during eculizumab therapy, but qualification for treatment with this drug is not always smooth when the disease course is non-standard.

Aim

A 76-year-old patient was admitted to the Nephrology Department due to AKI and anemia. Patient's history: mitral and aortic valve replacement and numerous co-existent diseases. at the time of admission, the patient was in a serious condition, with signs of significant overhydration. Laboratory tests showed: Hb 5.3 g/dl, PLT 92 K/ul, creatinine 1.54 mg/dl, haptoglobin < 0.1/1, reticulocytes 38‰, BTA negative. Schistocytes were observed in the peripheral blood smear. CRP < 0.6 mg/l, procalcitonin 0.29 ng/ml. ENA profile, ANCA negative, C3 and C4 levels significantly reduced, CH50 reduced. Suspicion of TMA. STEC test negative, ADAMTS-13 activity 30%, CFH decreased and anti-CFH negative. Genetic tests for aHUS were ordered. IV GKS treatment was started with continued prednisone. Nine units of erythrocyte mass and 20 units of FFP were transfused during plasmapheresis procedures. The treatment improved the general condition and kidney function but without significant improvement in hemolysis parameters. The application for qualification to the eculizumab treatment program was rejected. The patient was discharged. Re-hospitalization on 01/2024 – AKI due to anemia and VKA overdose. On admission, the general condition was serious. Five units of ME were transfused and renal function parameters improved. Genetic tests results from Hungary correspond to aHUS. Re-application to the expert panel for treatment with eculizumab.

Conclusion

Despite meeting the qualification criteria, it is not always possible to obtain consent to join the drug program. In some cases, an in-depth analysis is necessary to use a drug, which delays the introduction of an effective treatment method and reduces the chances of cure.

INTERNAL MEDICINE – CASE REPORTS

ORBITAL INFLAMMATORY SYNDROME AFTER ADMINISTRATION OF ZOLEDRONIC ACID FOR TREATMENT OF OSTEOPOROSIS

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Introduction

Orbital inflammatory disease (OID) encompasses various inflammatory disorders impacting the eye's orbit. Orbital Inflammatory Disease (OID) is the third most frequent condition affecting the orbit, following Grave's orbitopathy and lymphoproliferative disorders. Typically presenting itself in a unilateral manner, the manifestation of OID symptoms and clinical observations varies based on the affected location and the extent of inflammation, fibrosis, and potential mass impact.

Aim

A 66-year-old woman received a single 5 mg dose of zoledronic acid (Aclasta) for treatment of postmenopausal osteoporosis. After the injection, the patient visits the eye trauma center with complaints of progressive discomfort, retrobulbar pain in the right eye, pain during eye movements, periodic double vision, and redness.

During the ophthalmological examination at the onset, visual acuity was recorded at OD 0.6 and OS 0.4.Intraocular pressure was measured at OD17 mmHg and OS15 mmHg. The examination noted proptosis in the right eye, with limited eye movements when looking upwards and to the right.

Following an ultrasound examination, thickening of the sclera in the right eye was observed, along with a "T-sign", indicative of posterior scleritis.

Based on these findings, a diagnosis of orbital inflammatory disease was made, and the patient was treated with intravenous Solu-Medrol 500 mg pulse therapy for 5 days.

After the therapy was applied, there was a noticeable reduction in symptoms. Proptosis in the right eye was no longer visible, eye movements were unrestricted and painless, and there were no signs of double vision. Visual acuity improved to 1.0 in both eyes.

Conclusion

Zoledronic acid belongs to the bisphosphonate class of medications used to treat osteoporosis. Complications can occur after taking zoledronic acid, so doctors should be aware of the potential complication that can cause orbital inflammatory syndrome.

A RARE CASE OF PARVOVIRUS-B19 INDUCED HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS COMPLICATED BY RHABDOMYOLYSIS

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Introduction

Hemophagocytic lymphohistiocytosis (HLH) is a life-threatening, hyperinflammatory disease that can be familial or sporadic in nature. The immune-regulatory defect observed in this condition results in widespread activation of macrophages, which infiltrate tissues. The effect is multiorgan damage and hemophagocytosis – the most characteristic feature observed in bone marrow biopsies.

Aim

A 30-year-old man presented with progressive weakness, high-grade fever, nausea, vomiting, and generalized musculoskeletal pain. His medical history included melanoma therapy with pembrolizumab four years prior, which was complicated by a severe infection requiring hospitalization. Physical examination revealed an enlarged spleen. Laboratory findings showed increased acute phase reactants. Although viral infection was initially suspected, PCR testing for common viral pathogens yielded negative results. Over the following days, the patient developed pancytopenia, and a diagnosis of febrile neutropenia was made. The standard regimen with antibiotic therapy was initiated. On the next day, the patient presented with dark urine and a maculopapular rash on the trunk. Laboratory testing revealed acute liver injury and rhabdomyolysis. Additionally, the patient exhibited extremely high ferritin levels (57,000 ng/ml), increased soluble IL-2 receptor α and hemophagocytosis on a bone marrow biopsy which led to the diagnosis of HLH. Extensive PCR testing detected Parvovirus B19 DNA, suggesting a probable etiology for the disease. Treatment with glucocorticoids and IVIG resulted in rapid clinical improvement. The patient was discharged after 10 days of hospitalization.

Conclusion

This case report describes an unusual association of HLH with rhabdomyolysis, which, to our knowledge, has never been described in the context of parvovirus B19-induced HLH. The patient's medical history is also remarkable, as pembrolizumab therapy can induce HLH itself. Diagnosing HLH can be challenging, as it may present with symptoms affecting virtually any organ. Careful differential diagnosis is necessary, considering rheumatic diseases, neoplasms, and infections.

INTERNAL MEDICINE – CASE REPORTS

NONSPECIFIC CHRONIC PAINS IN 72-YEAR-OLD PATIENT WITH MULTIPLE CHRONIC DISEASES

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Introduction

The diagnosis of chronic pain is compound and depends on the patient's clinical condition and medical history. The most common factors are age-related and include vascular changes, neurological disorders, immune-mediated disorders, neoplastic changes, genetic disorders or infections. Difficulties may be encountered in patients with multiple chronic diseases and rare causes of chronic pain, such as Lyme borreliosis.

Aim

The patient was a 72-year-old man admitted to hospital with chronic lower limb pain, loss of appetite and general malaise. The patient had multiple chronic diseases including hypertension, type 2 diabetes, hyperlipidaemia and obesity. Blood count revealed leukocytosis and mild anaemia. C-reactive protein level and liver enzymes were elevated. The patient underwent imaging tests (magnetic resonance imaging, computed tomography, ultrasonography) and endoscopy (gastroscopy, colonoscopy, bronchoscopy) which were unremarkable. Blood microbiology examination revealed Staphylococcus capitis due to which the patient received amoxicillin with clavulanic acid. Treatment resulted in a partial reduction in symptoms and a complete reduction in CRP. Blood serologic tests revealed increased IgG Borrelia-specific antibodies. The results were confirmed by Western-Blot. Treatment with doxycycline was initiated, which completely reduced the symptoms.

Conclusion

Causative factors of pain in patients with multiple chronic diseases are numerous and have to be excluded in order to establish adequate diagnosis and proper treatment. Less common factors, such as late borreliosis are easily missed in patients with multiple chronic diseases, especially considering the fact that over a half of patients do not recall tick bites. It underlines the importance of serological testing in patients with non-specific symptoms.

DIFFERENTIAL DIAGNOSIS OF PANCYTOPENIA IN FEMALE PATIENT WITH BONE MARROW HYPOPLASIA

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Introduction

Pancytopenia is characterised by reduced levels of at least two major cell lines. Patients typically present with chronic infections, pallor, mucous membrane bleeding, and bruising. Diagnosis is stated upon trephine biopsy, flow cytometry, and genetic tests. The combined pathophysiology of pancytopenia includes myelodysplastic syndrome (MDS), leukemias, and aplastic anaemia (AA).

Aim

The patient was an 82-year-old woman admitted for low platelet count. On admission she presented with petechiae and subcutaneous bleeding from previous injections. The patient had hypertension and hypothyroidism. She admitted to chronic use of non-steroidal anti-inflammatory drugs and analgesics for spinal and joint pain. The patient had previously been hospitalised for thrombocytopenia and received a blood transfusion. Family history revealed hypothyroidism and Graves-Basedow disease in daughters. The blood count on admission showed pancytopenia, for which she received a blood transfusion. Given her clinical condition, AA was suspected. The patient underwent trephine biopsy and flow cytometry, which revealed hypoplasia of bone marrow. Results were nonspecific and indicative of either AA and hypocellular MDS. The patient was treated with darbepoetin, red blood cell transfusion, and platelet transfusion.

Conclusion

Pathogenesis, syndromes and image of bone marrow in AA and hypocellular MDS is overlapping. Accurate differentiation is stated upon traits of dysplasia in bone marrow and genetic tests, although MDS may result from AA, therefore, differential diagnosis is difficult. Chronic use of anti-inflammatory and analgesic drugs may lead to the development of rare side effects, including aplastic anaemia. A family history of immune-mediated disorders and their co-occurrence in patients may play a role in the complex pathophysiology of AA and MDS. Our patient had traits of both AA and hypocellular MDS. Considering her medical history and risk factors, diagnosis of aplastic anaemia seemed more probable.

INTERNAL MEDICINE – ORIGINAL RESEARCH

BLOODSTREAM INFECTIONS IN SEVERE BURN PATIENTS: INTENSIVE CARE UNIT ANALYSIS 2014-2022

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Introduction

Severe burn patients face increased bloodstream infection risk, with elevated mortality rates. Our study, spanning 2014-2022, identifies the population of patients as well as the risk markers, enhancing understanding and guiding effective clinical strategies.

Aim

Severe burn patients constitute a highly susceptible group prone to bloodstream infections (BSI), which are associated with elevated mortality rates. This project aimed to uncover risk factors for BSI, providing predictive tools to enhance future detection and mitigate fatality, while also trying to understand the association with the type of infection.

Methods and Materials

Utilizing a sample of 433 patients admitted to the Burns Department Intensive Care Unit (ICU) at University Hospital Brno during the years 2014-2022, we investigated age, sex, total body surface area (TBSA), inhalation injury, number of surgical procedures, length of stay, circumstances of injury and abbreviated burn severity index (ABSI) as potential risk marker for positive hemocultures by using correlative analysis.

We conducted descriptive, comparative, and correlative statistical analyses employing Chi-square and Odds Ratio. Variables such as age, sex, TBSA, inhalation, number of surgical procedures, length of stay, circumstances of injury and ABSI were investigated as potential risk markers for positive hemocultures.

Discussion

Overall, we have noticed greater occurrence of Gram positive pathogens in the hemocultures. Women were slightly more affected than men. Analyses revealed an increased risk of BSI associated mainly with length of stay and number of surgical procedures.

Conclusion

This study identifies risk markers for the development of BSI in severe burn patients within the ICU setting. The study population comprised predominantly male patients, with a higher percentage of women experiencing BSI. The most common pathogens associated with these infections were Staphylococcus aureus and Coagulase-negative Staphylococci. These findings contribute valuable insights for the early identification and management of bloodstream infections in this vulnerable population.

COMPARISON OF COPPER OXIDE DRESSINGS TO NEGATIVE PRESSURE WOUND THERAPY IN WOUND HEALING PARAMETERS

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Introduction

Negative Pressure Wound Therapy (NPWT) is the standard of care for treating large and deep wounds, as well as deep cavities, and enhancing wound closure. Copper Oxide Dressings (COD) have been recently introduced into clinical practice due to their antimicrobial properties. Research and clinical experience showed their positive effect also in inducing wound healing, including stimulation of autolytic debridement, granulation tissue formation, and epithelization.

Aim

The aim of this RCT is to prove non-inferiority of COD in comparison to the standard of care for large and deep wounds, NPWT, in the areas of wound healing, convenience, and application time.

Methods and Materials

We initiated a randomized controlled trial with 60 diabetic patients comparing the reduction of wound size during 3 months of treatment between COD management to NPWT, by using an artificial intelligence program (Tissue Analytics, TA).

Discussion

46 patients have finished the study, 23 patients in each arm. Average wound area was 19.9 ± 4.36 cm2 in the COD arm and 14.1 ± 2.32 cm2 in the NPWT arm ($p = 0.25$). Reduction of wound size assessed by TA was 53.7% and 52.2% (Pooled = 0.866) after 1 month, 77.7% and 72.8% (Pooled = 0.533) after 2 months, and 89.5% and 89.7% (Pooled = 0.961) after 3 months, in the COD and NPWT arms, respectively.

COD dressings were more convenient than the NPWT to both the patients ($p < 0.001$) and the caregiver ($p = 0.0034$). Applying the COD was faster than applying the NPWT ($p < 0.001$). Cost is estimated to be ~15% lower in the COD Arm.

Conclusion

The results indicate statistically significant non-inferiority of COD therapy compared to NPWT in terms of wound healing rate and superior results in terms of convenience, and reduced application time in addition to lower cost. The findings suggest that COD may be considered as first-line of treatment for diabetic wounds patients when NPWT deemed necessary.

INTERNAL MEDICINE – ORIGINAL RESEARCH

EVALUATION OF THE CONTINUOUS POSITIVE AIRWAY PRESSURE EFFECT ON NEUROTROPHINS' GENE EXPRESSION AND PROTEIN LEVELS

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Introduction

Neurotrophins (NT) might be associated with the pathophysiology of obstructive sleep apnea (OSA) due to concurrent intermittent hypoxia and sleep fragmentation. Such a relationship could have implications for the health and overall well-being of patients; however, the literature on this subject is sparse.

Aim

This study investigated the alterations in the serum protein concentration and the mRNA expression of the brain-derived neurotrophic factor (BDNF), glial cell line-derived neurotrophic factor (GDNF), neurotrophin-3 (NTF3), and neurotrophin-4 (NTF4) proteins following a single night of continuous positive airway pressure (CPAP) therapy.

Methods and Materials

This study group consisted of 30 patients with OSA. Venous blood was collected twice after a diagnostic polysomnography (PSG) and PSG with CPAP treatment. Gene expression was assessed with a quantitative real-time polymerase chain reaction. An enzyme-linked immunosorbent assay was used to determine the protein concentrations.

Discussion

After CPAP treatment, BDNF, proBDNF, GDNF, and NTF4 protein levels decreased ($p = 0.002$, $p = 0.003$, $p = 0.047$, and $p = 0.009$, respectively), while NTF3 increased ($p = 0.001$).Sleep latency was correlated with ΔPSG + CPAP/PSG gene expression for BDNF ($R = 0.387$, $p = 0.038$),NTF3 ($R = 0.440$, $p = 0.019$), and NTF4 ($R = 0.424$, $p = 0.025$). OSA severity parameters were not associated with protein levels or gene expressions.

Conclusion

CPAP therapy could have an impact on the posttranscriptional stages of NT synthesis. The expression of different NTs appears to be connected with sleep architecture but not with OSA severity.

DIABETES MELLITUS AND SAFE DRIVING: LATVIAN MEDICAL PROFESSIONALS' KNOWLEDGE

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Introduction

Hypoglycemia is blood glucose levels below 4.0 mmol/L; individuals with diabetes may feel dizzy and confused. In more severe hypoglycemia patients can experience seizures, visual impairment, cognitive impairment. Such a state is considered unsafe to drive. First and foremost, medical professionals (MP) need to be competent in this area to guarantee that patients are informed.

Aim

The study aimed to investigate MP's, more specifically, endocrinologists', internists', and family physicians' understanding of diabetes mellitus (DM) and safe driving.

Methods and Materials

In total, 140 MP were included in the research. The MPs in Latvia were provided with an anonymous survey of 17 unique questions. IBM SPSS 29.0 was used for data analysis.

Discussion

The MP's mean age was 48.1 ±15.4 years. Females were 86.4% (n = 121), males 13.4% (n = 119). Of the responders, 90.7% (n = 127) were internists or family physicians, 9.3% (n = 13) were endocrinologists. MP work experience ranged from 1 to 55 years. 15% (n = 21) did not believe that DM is a risk factor for traffic accidents. Of those 85% (n = 119) who believed that DM is a risk factor, 66.4% (n = 79) talked to their DM patient about safe driving. 97% (n = 136) consider frequent and severe episodes of hypoglycemia to be a contraindication for driving, but only 39% (n = 53) of them had advised their DM patients not to drive. 88.6% (n = 124) believed that not recognizing hypoglycemia is a contraindication for driving, but only 38.7 (n = 48) recommended their DM patients to measure blood glucose levels before driving. Only 33.6% (n = 38) of respondents knew that blood glucose levels below 4.0 mmol/L are unsafe for driving.

Conclusion

Even though most doctors believe diabetes mellitus raises the risk of car accidents, less than half of them counsel their patients on how to avoid it. MP needs to get more knowledgeable on DM and safe driving.

INTERNAL MEDICINE – ORIGINAL RESEARCH

CORONARY SLOW-FLOW PHENOMENON IN TAKOTSUBO SYNDROME: THE PREVALENCE, CLINICAL DETERMINANTS, AND LONG-TERM PROGNOSTIC IMPACT

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Introduction

Takotsubo syndrome (TTS) is an acute and transient ventricular dysfunction, characterized by specific regional wall abnormalities extending beyond a single epicardial distribution. According to literature, approximately 1-2% of clinically suspected acute coronary syndromes are diagnosed as TTS. The coronary slow-flow phenomenon (CSF) is defined as angiographically normal or near-normal coronary arteries with delayed antegrade opacification of the distal vasculature. Patients with TTS may present CSF in angiography performed on admission. In a recent study, it has been shown that coexistence of these two factors might contribute to worse clinical outcomes.

Aim

The precise relevance of CSF in TTS and its long-term impact have not been conclusively established. Therefore, we sought to investigate its prevalence and clinical significance.

Methods and Materials

Among 7771 MI patients hospitalized between 2012 and 2019, TTS was identified in 82 (1.1%) subjects. The epicardial blood flow was assessed with thrombolysis in myocardial infarction (TIMI) scale and corrected TIMI frame count (TFC), whereas myocardial perfusion with TIMI myocardial perfusion grade (TMPG). CSF was defined as TIMI-2 or corrected TFC > 27 frames in at least one epicardial vessel.

Discussion

CSF was identified in 33 (40.2%) TTS patients. In the CSF-TTS versus normal-flow-TTS group, lower values of left ventricular ejection fraction on admission (33.5 vs. 40%, p = 0.019), more frequent midventricular TTS (27.3 vs. 8.2%, p = 0.020) and coexistence of both physical and emotional triggers (9.1 vs. 0%, p = 0.032) were noted. Within a median observation of 55 months, higher all-cause mortality was found in CSF-TTS compared with normal-flow TTS (30.3 vs. 10.2%, p = 0.024).

Conclusion

As shown in the longest follow-up to date, CSF-TTS patients have been characterised by specific clinical features. Moreover, CSF was identified as an independent predictor of unfavorable long-term outcomes.

CORRELATION BETWEEN STAGES OF PULMONARY SARCOIDOSIS, CD4+/CD8+ IN BRONCHOALVEOLAR LAVAGE AND PULMONARY FUNCTION TEST RESULTS

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Introduction

Sarcoidosis is often diagnosed in routine lung screenings, as there is no clear correlation between bronchoalveolar lavage fluid (BALF) findings and pulmonary function test (PFT) parameters. They can be highly variable, therefore leading to ongoing discussions about their diagnostic role.

Aim

To evaluate CD4+/CD8+ ratio in BALF and parameters of PFT in correlation to different stages of sarcoidosis.

Methods and Materials

The retrospective study was conducted by reviewing medical records of 53 patients with sarcoidosis from the Pauls Stradiņš Clinical university hospital, who were presented at multidisciplinary medical consilium during the period of 2018 - 2023. For statistical analysis IBM SPSS 23.0 was used.

Discussion

Out of 53 enrolled patients with mean age of 44.8±12.9 years, 51% were men. Extrapulmonary sarcoidosis was present in 27% of patients, and 58% had symptoms related to sarcoidosis. Most common stages of sarcoidosis were the second and the third stage, each having 33% of patients. Only 52.8% (n = 28) of patients underwent both BALF and PFT with maximum 2 months in between making only them eligible for statistics analysis. No statistically significant differences were observed in CD4+/CD8+ ratio and PFT parameters among patients at different stages of sarcoidosis. PFT parameters and clinical activity showed no significant differences, except for TLC (total lung capacity) and RV (residual volume). The mean parameter of TLC was 95% of predicted value in symptomatic patients and 83% of predicted value in asymptomatic patients, while the mean parameter of RV was 104% and 77% respectively, $p < 0.05$. The most important limitation of this study was the small group of patients, therefore, preventing meaningful differences from being detected.

Conclusion

This study showed no significant correlation between the stages of sarcoidosis, CD4+/CD8+ ratio in BALF, and PFT parameters. The main limitation is the relatively small sample size, while having larger populations, presumably, would yield statistically significant differences.

INTERNAL MEDICINE – ORIGINAL RESEARCH

MANAGEMENT OF IN-STENT RESTENOSIS IN DIABETIC PATIENTS: CURRENT AND EMERGING TRENDS

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Introduction

In-stent restenosis (ISR) remains a significant complication of percutaneous coronary intervention (PCI). Rates of ISR have reduced since the advent of drug-eluting stents (DES), however, they remain a nuisance in the field. Debate remains over whether diabetes mellitus (DM) has an effect on the incidence of ISR in the DES era and what interventions are most effective in this patient subset.

Aim

This review aims to comprehensively discuss the matter while offering an outlook on the currently available interventions in this patient population. DM is known to be a chronic inflammatory condition, and thus, we aim to explore the molecular mechanisms behind ISR in patients with DM and subsequent potential treatment options.

Methods and Materials

The review categorizes management into medical (i.e. pharmacological) and interventional (i.e. PCI, DES) modalities. The focus is on comparing intervention outcomes and identifying challenges and future trends.

Discussion

DM is a risk factor for ISR. Hypotheses regarding the molecular mechanisms of this development have been put forward. In the era of IVUS and OCT, second-generation DES and modern interventional modalities, the rates of ISR have been reduced dramatically as compared to the past. No conclusive evidence has been achieved regarding superior outcomes under a certain management plan in patients with DM.

Conclusion

Hyperglycemia, hyperinsulinemia, and elevations in C-reactive protein have been associated with higher rates of ISR. The effects of insulin sensitizing drugs such as metformin, pioglitazone, and SGLT-2 inhibitors have shown promising results in reducing ISR rates, so did anti-inflammatory medications such as colchicine. These findings warrant further investigation, alongside the current work being done on newer-generation stents. While DES and DCB remain superior to most interventions, they are limited in their own ways. Intravascular lithotripsy is a promising new modality in the management of calcified lesions.

ASSESSMENT OF TRANSTHORACIC ECHOCARDIOGRAM IMAGE QUALITY WITH THE USE OF MACHINE LEARNING ALGORITHMS

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Introduction

Echocardiography is essential in clinical diagnosis and accurate treatment of cardiovascular diseases. The reliability of echocardiographic measurements depends on the echocardiogram image quality. The lower the image quality, the greater the inter observer variability in echocardiography-derived measurements. Therefore, high-quality echocardiogram images are the cornerstone of reliable measurements of heart structures.

Aim

To develop, validate and compare machine learning and deep learning algorithms for accurate, automated, and objective transthoracic echocardiogram image quality assessment.

Methods and Materials

In total, 4090 single-frame two-dimensional transthoracic echocardiogram images were used from apical 4-chamber, apical 2-chamber and parasternal long-axis views sampled from 4030 adult patients. The data were extracted from CAMUS and Unity-imaging open-source datasets.

For every raw image, additional grayscale block histograms were developed. For every histogram dataset, six classic machine-learning (ML) algorithms were tested.

Moreover, a convolutional neural network (CNN) using the pre-trained EfficientNetB4 architecture was developed for every raw image dataset.

Discussion

For apical 2-chamber views, the mean accuracy of the ML and CNN were 75.8% and 81.0%, respectively ($p = 0.054$). The image quality was predicted for the apical 4-chamber dataset with 73.5% (ML) and 81.0% accuracy (CNN, $p = 0.004$).

For the Unity-imaging dataset, images in the parasternal long-axis view were predicted with 83.2% (ML) and 79.0% accuracy (CNN, $p = 0.004$). The image quality was predicted for the apical 4-chamber dataset with 91.2% (ML) and 90.1% accuracy (CNN, $p = 0.321$).

Conclusion

Both classic ML based on image histograms and CNNs trained on raw images are accurate echocardiogram image quality assessment methods. In addition, this study is a proof of concept of a novel and accurate method of training classic machine learning algorithms on block histograms calculated from raw images. Echocardiogram image quality assessment methods may improve reliability in clinical decision-making.

MIDWIFERY

SEXUAL FUNCTIONING AFTER CHILDBIRTH – WHAT AFFECT FOR WOMEN? A PILOT STUDY

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Introduction

It is still unclear how big of an impact factors affecting sexual life have, despite how common postpartum sexual problems are. Most women resume sexual activity within three months of childbirth and at that time, two out of three of them experience at least one problem connected to sexual functioning: vaginal dryness, dyspareunia, decreased libido or difficulty achieving orgasm. Decreased sexual activity in that period may result from reduced interest in sex, postpartum pain, tender breasts, and leaking milk. Factors affecting intimate and sexual functioning include role incompatibility, chronic tiredness, and body image issues leading to changes in libido.

Aim

The aim of this pilot study was to investigate factors affecting female sexual activity depending on infant feeding methods after delivery.

Methods and Materials

This pilot study was conducted in a group of 253 women in the postpartum period, following the STROBE guidelines for cross-sectional control analysis. The study design included a questionnaire for characterizing women's medical history, breastfeeding variables, sociodemographic, and the PL-FSFI (Female Sexual Function Index). All statistical analysis was performed on a dedicated software. The level of significance was taken to $p < 0.05$.

Discussion

A significant difference has been observed between the groups practicing different types of breastfeeding. Regardless of the infant feeding method, the most common problem occurred with lubrication and lack of sexual desire. Our findings indicate that women who exclusively breastfeed are more likely to develop sexual problems.

Conclusion

Couples are in need of extensive and professional counseling about postpartum sexuality, and the factors that affect it, such as breastfeeding, in order to maintain sexual health and promote long-term breastfeeding.

COOPERATION OF LACTATION COUNSELOR AND NEUROLOGOPEDIST IN SUPPORTING BREASTFEEDING

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Introduction

As WHO experts point out, promoting natural breastfeeding as well as protecting and supporting breastfeeding mothers is one of the most effective strategies for improving population health. It increases children's resistance to illnesses, creates a strong bond between mother and child, and has a positive impact on women's health. Nevertheless, current data indicate that only about 40% of infants are exclusively breastfed in the first six months of life.

Aim

A boy born at 41 weeks gestation, by spontaneous labour. The mother reported to a Certified Lactation Consultant (CLC) due to the oral abnormalities she perceived and the duration of breastfeeding that was too short in her opinion. After evaluation by the CLC, the patient was referred to the neurologopedic clinic for consultation. During the examination, the neurologopedist found: in the facial structure, highly arched palate, shortening of the upper lip frenulum penetrating, not limiting the movement of the lip, placing it in a tenting position, abnormal resting position of the tongue and lips. In the examination, primitive oral reactions were assessed, as well as the reactions and efficiency of the facial and supraglottic muscles. Due to the accompanying feeding sounds of nipple gaping, predominance of posterior tongue work, abnormal resting position of the tongue - myotherapy was recommended to regulate the functioning of the oral-facial complex.

Methods and Materials

The paper uses the case study method. It is a qualitative research method that uses multiple data collection techniques to solve scientific problems.

Discussion

Due to the benefits of natural feeding, it is important to support the mother during lactation. Collaboration and comprehensive therapeutic measures are crucial for early diagnosis and implementation therapy.

Conclusion

Cooperation between a neurologopedist and lactation counselor is very important in breastfeeding support, especially when the newborn has oral defects.

MIDWIFERY

THE INFLUENCE OF PERINATAL LOSS OR MISCARRIAGE ON WOMEN'S PARTNERSHIPS AND THEIR QUALITY OF LIFE

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Introduction

Despite the advancements in technology and medicine enhancing prenatal care, intrauterine treatments, and perinatal care, approximately 10 to 15% of pregnancies in our country end in miscarriage. In 2019, over 39,000 women faced pregnancy loss, with about 1,700 experiencing stillbirths. These statistics underscore the significant number of women grappling with the loss of a child, which can lead to changes in their quality of life and pose potential risks to partner relationships.

Aim

This research seeks to explore how perinatal loss or miscarriage affects partnerships and the quality of life in women.

Methods and Materials

The study involved 158 women aged 18 to 49 who willingly participated. The research employed a diagnostic survey method with Polish versions of survey questionnaires, including The Quality of Relationships Inventory and THE WORLD HEALTH ORGANIZATION QUALITY Of LIFE (WHOQOL) -BREF. Statistical analysis of the collected data was conducted using the IBM SPSS Statistics package (v. 28).

Discussion

This study revealed a significant difference in the perception of partner support based on the number of children compared to other studies. Perinatal loss or miscarriage was found to have a considerable impact on women's quality of life. Additionally, attention was given to the correlation between the quality of life and the assessment of relationship quality.

Conclusion

Women affected by pregnancy loss necessitate increased psychological support. The research presents findings that contradict the assertions of other researchers, emphasizing the need for further exploration of the topic.

A CASE REPORT OF COEXISTING ADENOMYOSIS AND ENDOMETRIOSIS IN A REPRODUCTIVE-AGE WOMAN

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Introduction

Endometriosis is a medical condition characterized by the occurrence of endometrial tissue outside the lining of the uterus. Some of the locations where endometriosis can occur include: ovaries, fallopian tubes, uterine ligaments, bladder and intestines. Adenomyosis occurs when the endometrial tissue grows into the muscular wall of the uterus. The displaced tissue behaves as if it were in its normal location. It thickens, breaks down, and bleeds during each menstrual cycle.

This research describes the case of a 21-year-old woman diagnosed with endometriosis in the uterosacral ligaments and posterior vaginal fornix, and widespread adenomyosis. The patient has been suffering from pain during menstruation, heavy bleeding, chronic fatigue, depression, since entering adolescence. Since she began engaging in sexual activity, she has been experiencing painful intercourse. The woman received the diagnosis at the age of 20 after undergoing a specialized MRI. The patient is undergoing treatment with dienogest and antidepressants.

Aim

The main aim of the study is to describe a case of coexisting adenomyosis and endometriosis, focusing on symptoms, diagnosis, and the impact of these conditions on the patient's quality of life.

Methods and Materials

This research used the case study method. Data was collected through patient interviews, observation, and analysis of medical documentation.

Discussion

For many years, the patient, despite chronic pain and frequent medical visits, did not receive a correct diagnosis, and her symptoms were trivialized. Following the implementation of treatment targeted at endometriosis therapy, the quality of her life improved. Actions should be taken to enable women to receive a prompt and accurate diagnosis.

Conclusion

Endometriosis has a significant impact on a woman's life, including her mental state, sexual, social, and family life. Treating endometriosis requires a holistic approach to the patient.

MIDWIFERY

WHAT INFLUENCES THE DECLINE IN FERTILITY IN POLAND?

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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. The Central Statistical Office also states that the observed variability in demographic processes is the result of multidirectional factors which consequently determine the personal decisions of Poles.

Aim

The main goal of the research project is answering the question – what influences the decline in fertility in Poland.

Methods and Materials

The study involved 736 Poles aged 18-45. The research was conducted using the CAWI method, which enabled collecting public opinion. A descriptive online survey was conducted and provided quantitative data. Standardized tools in Polish were used. The obtained data were subjected to statistical analysis using the IBM SPSS Statistics package. The level of significance was set to $p < 0.05$.

Discussion

One of the most important findings of this study indicates that, despite the social programs proposed by the government, economic factors significantly influence planning for children in the future. The factors that had the least impact on the decision related to offspring were government or social programs. In the biopsychosocial aspect of our research, participants' answers underscored the significant role of mental well-being. Regrettably, despite widespread discontent with the state of mental health in Poland, the majority have not undergone any form of mental health treatment. The next aspect examined in our analysis was legal factors with a focus on Poles' attitude towards abortion law in the context of procreation plans.

Conclusion

The factors determining Poles' reproductive plans are multi-faceted. Concerned about the reduction in birth rate, state authorities should pay attention to the economic, legal, sociological, and health-related elements that significantly discourage Poles from making the decision to become parents.

BREAST CANCER IN A WOMAN OF POSTMENOPAUSAL AGE – A CASE STUDY APPROACH

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Introduction

This comprehensive review explores risk factors associated with breast cancer, encompassing BRCA1/BRCA2 mutations, hormonal causes, and lifestyle. The article covers symptoms, diagnostic approaches, and treatment modalities, including surgery, chemotherapy, hormone therapy and radiotherapy, emphasizing importance of the type of cancer and the patient's age for the decision on future treatment.

Aim

Patient– 79-year-old woman diagnosed in January 2024 with invasive carcinoma of breast NOS, WHO grade 2, HER2: +1, ER:+, PR:+, without metastasis. Diagnostics included: USG, VABB, spectral mammography, RTG. Treatment: Letrozole hormone therapy (trade name of drug: Etruzil), planned continuation of treatment: BCS+SLNB, radiotherapy. Symptoms: skin tightening, thickening in the left breast, armpits loose. Data from the interview: FMP at age 15, LMP at age 54, Pregnancies:1, Births:1, breastfeeding: 2 months. Surgeries: cesarean section in 1975, laparoscopic surgery for ovarian cysts with bilateral ovarian removal (2018). Lifestyle: balanced diet, alcohol, cigarettes negate. Coexisting diseases: hypertension, arrhythmia. No family history of cancer.

Methods and Materials

The study presents an individual case – a 79-year-old woman diagnosed with WHO grade 2, NOS breast cancer. Utilizing a qualitative research approach, diverse data collection methods were employed to effectively address scientific inquiries, aiding midwives in understanding contributing factors to specific medical scenarios.

Discussion

Women with breast cancer should receive comprehensive, holistic care, and the interdisciplinary team should include not only doctors, but also midwives, nurses, dieticians, psychologists, physiotherapists among many others. Is it reasonable to abolish the upper age limit in the breast cancer prevention programme?

Conclusion

This case study underscores the effective interdisciplinary management of a woman with grade 2 NOS breast cancer. The collaboration among surgical, oncology, nursing teams is crucial in the case of medical treatment. Emphasizing the importance of appropriate treatment planning tailored to the needs of postmenopausal women clearly influences the future results.

MIDWIFERY

PERCEPTION OF HOME BIRTH ASSISTED BY A MIDWIFE BY MODERN SOCIETY – PRELIMINARY ANALYSIS OF THE RESEARCH

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Introduction

In recent years, home births assisted by a midwife have been gaining popularity again as one of the alternatives to hospital births. Nevertheless, opinions are divided on the best place for physiological childbirth. Some people believe that the safest place would be a hospital because of the possibility of a quick cesarean section if necessary. However, others believe that in the case of non-medicalized physiologic delivery, the advantages of home birth outweigh the low risk of finishing labor by cesarean section.

Aim

The aim of this study is to comprehensively examine the contemporary societal perception of midwife-assisted childbirth, identifying influential variables through an exploration of medical professionals' opinions, the impact of past births, public knowledge of complications, opinions on midwife competence, and the influence of previous childbirth experiences on the choice of birth location.

Methods and Materials

The study employed a diagnostic survey method with a self-designed electronic questionnaire administered to adults. The questionnaire included sections on metrics data, information on having children, place of delivery, midwifery profession in the context of home births, respondents' medical education, experience with home births, and statistics related to home birth.

Discussion

The preliminary analysis of the research highlights a nuanced debate surrounding the perception of home birth assisted by a midwife in modern society. Our findings suggest that while there is a growing interest in this alternative to hospital births, opinions remain divided.

Conclusion

In conclusion, our preliminary analysis underscores the need for a comprehensive exploration of the factors influencing the perception of midwife-assisted childbirth as the results from the survey show a major divide in society.

MEASURING HIGHER COGNITIVE FUNCTIONS USING EEG AND A SINGLE CHANNEL BRAIN-COMPUTER INTERFACE. PROJECT BRAINSYNC

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Introduction

EEG testing is a commonly known method for detecting abnormalities in the electrical activity of the brain in disorders such as epilepsy or sleep disorders. Research indicates that measuring beta waves in the frontal lobes may be an important factor in differentiating people with attention deficits from controls. The theta/beta frequency ratio seems to be significant. However, meta-analyses provide contradictory information; some confirm, others deny the statement that the theta/beta ratio differentiates people with attention deficits from control groups. We hypothesized that spectral power in the theta frequency will be a better biomarker of attention deficits and general cognitive performance.

Aim

The aim of this study was to investigate a potential biomarker of these functions in the electrophysiological activity of the brain.

Methods and Materials

Researchers emphasize that one of the best approaches to monitoring the state of attention in humans may be brain-computer interfaces. Based on these reports, in the study we used MindFlex, a simple brain-computer interface operating on the principle of neurofeedback therapy.

Discussion

The research objective is to prove that the excitation of brain waves responsible for attention through MindFlex will enable more effective analysis and determination of electrophysiological biomarkers of attention processes. This combination will allow us to obtain a wider spectrum of electroencephalographic changes.

Conclusion

Identifying a biomarker that correlates with the evaluation of attention functions examined using the interface as well as in standard neuropsychological tests would potentially be a breakthrough for objective measurement and diagnosis of cognitive functions in central nervous system diseases.

NEUROSCIENCE AND NEUROSURGERY

USING NEAR-INFRARED IMAGING AND MACHINE LEARNING IN INTRACRANIAL PRESSURE MEASUREMENT IN CLINICAL SETTINGS

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Introduction

Intracranial pressure is an important physiological parameter, which changes in many pathological states including trauma; therefore, its monitoring is imperative in certain patients.

Aim

We intend to develop a device that uses near-infrared (NIR) imaging to monitor intracranial pressure non-invasively by analyzing the pulse morphology of retinal vessels

Methods and Materials

The pulse morphology of retinal vessels changes in relation to intracranial pressure. We believe that using an NIR imaging camera and machine learning, such as Convolutional Neural Network, we will be able to predict intracranial pressure with a high degree of accuracy.

Discussion

Despite having a solid conceptual foundation and great potential, our project is still rather experimental and in the prototype stage. Thus, further efforts are needed to advance the project from its current experimental and prototype stage.

Conclusion

The use of near-infrared imaging shows great potential as an easy and cost-effective alternative for invasive cerebrospinal fluid procedures such as lumbar puncture and other non-invasive procedures.

IMPACT OF PHYSICAL ACTIVITY ON STEROID HORMONE LEVELS AND COGNITIVE FUNCTIONS

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Introduction

Engaging in physical activity appears to improve cognitive functions such as processing speed, attention or inhibition in young adults. Furthermore, physical activity seems to affect men and women differently and decreases levels of estradiol, free estradiol, progesterone, testosterone and free testosterone in adult women. Differences in steroid hormone levels have been shown to influence cognitive performance. Due to these reports, we investigated the potential impact of physical activity and hormone levels on cognition.

Aim

The study explored the relationship between the frequency and intensity of self-reported physical activity and cognitive functioning, considering the potential moderating influence of steroid hormones such as estradiol, progesterone, and testosterone in young adults.

Methods and Materials

To determine the frequency and intensity of physical activity, we administered a self-report questionnaire. Additionally, blood samples were collected from each participant for testing estradiol, progesterone and testosterone levels. To assess cognitive functions, we conducted neuropsychological testing, including short-term memory, attention and visuospatial function tests.

Discussion

The connection between physical activity, steroid hormones and cognitive functioning has been investigated in the elderly and children, the focus of this research is on young adults.

Conclusion

Our research might provide crucial insight on interactions between physical activity, hormonal differences and cognitive functioning in young adults. This information could contribute to establishing new areas of disorder prevention and healthier lifestyles.

NEUROSCIENCE AND NEUROSURGERY

SPINAL DEFORMITY PREDICTORS AFTER INTRADURAL TUMOR RESECTION VIA POSTERIOR APPROACH: SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction

Intradural spinal cord tumors account for 40% of all primary spinal cord tumors. The preferred treatment involves tumor resection through techniques such as laminectomy, laminoplasty, or laminotomy. Postoperative spinal deformity (SD) occurs in approximately 10% of adult cases, with a markedly higher risk, up to 100%, observed in pediatric patients.

Aim

The presented study aimed to identify risk factors for spinal deformity following resection of intradural spinal cord tumors via posterior approach.

Methods and Materials

We conducted a systematic review in accordance with PRISMA guidelines. Utilizing the databases PubMed, Web of Science, and Scopus, we employed keywords such as “laminoplasty”, “laminotomy”,“laminectomy”, “tumor”, “resection”, “spinal deformity”, “kyphosis”, “intradural”, “intramedullary”, and “extramedullary”. Odds ratios (OR) were estimated for dichotomous variables. Mean differences (MD) were calculated for continuous variables.

Discussion

Our review identified eleven retrospective studies comprising a total of 715 patients, with a mean age of 17.1 years. Among them, 183 patients developed postoperative SD. Notably, younger age (25 years or below; OR = 4.03; $p < 0.0001$; 13 years and below; OR = 3.72; $p = 0.003$) was associated with an elevated risk of SD development. Preoperative SD was a strong predictor of postoperative SD (OR = 12.19; $p = 0.0007$), particularly accentuated in the non-fusion subgroup (OR = 22.14; $p < 0.0001$). Moreover, involvement of the thoracolumbar junction increased the risk of SD (OR = 3.11; $p = 0.04$). In the fusion subgroup exclusively, surgery encompassing at least 3 spinal levels elevated the risk of SD (OR = 9.18; $p = 0.02$). Additionally, in the non-fusion subgroup, intramedullary tumor location emerged as a significant risk factor for postoperative SD (OR = 3.67; $p = 0.04$).

Conclusion

Risk factors for postoperative spinal deformity include younger age, preoperative SD, thoracolumbar junction involvement during surgery, decompression involving at least 3 spinal levels, and intramedullary tumor location. These findings provide crucial insights for clinicians in planning optimal surgical strategies for patients at high risk of SD development.

INTRAVENTRICULAR COLISTIN – AN EFFECTIVE STRATEGY FOR ACINETOBACTER BAUMANNII VENTRICULITIS: A CASE REPORT

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Introduction

Cerebrospinal fluid (CSF) shunts serve as the primary treatment for hydrocephalus. Nevertheless, prolonged usage of external ventricular drains (EVD) can lead to central nervous system infections such as ventriculitis. In the intensive care unit setting, gram-negative, multi drug resistant organisms such as Acinetobacter baumannii (AB) prevail, leading to poor outcomes. Notably, infections caused by AB pose a formidable challenge due to their remarkable genetic drug resistance.

Colistin, used against Gram-negative MDR pathogens, has limited CNS penetration via IV. Intraventricular or intrathecal administration is required to enhance its CNS therapeutic efficacy.

Aim

We present a 22-year-old male admitted to the emergency department after an electric scooter accident with extensive craniocerebral fractures. Diagnostic imaging confirmed a subdural hematoma and subarachnoid hemorrhage in the third and fourth ventricles, causing acute hydrocephalus. An EVD was inserted into the anterior horn of the right lateral ventricle. In the following days, suspicion of neuroinfection arose due to high fever, stiff neck, sweating, and slight weakness of the limbs. IV meropenem and vancomycin were indicated, additionally, different shunts were performed to drain the excess CSF and to try to diagnose the causative pathogen. The symptoms persisted for several weeks and no causative pathogen was identified until the perioperative removal of a lumbar drain revealed AB in CSF. IV colistin and meropenem were given after an antibiogram and showed no significant improvement. The addition of IVT colistin to the current regimen significantly improved neurological and reduced inflammatory markers. After multiple nosocomial complications, the patient was discharged in good condition to the rehabilitation department.

Conclusion

Here, IVT colistin outperformed its intravenous form, causing clinical improvement, suggesting that IVT colistin may be the preferred option. EVDs impose devastating complications, therefore, medical staff should be informed about correct prophylaxis and care for EVDs.

NEUROSCIENCE AND NEUROSURGERY

PREDICTORS OF ACUTE AND CHRONIC PAIN IN PATIENTS OPERATED ON FOR DEGENERATIVE SPINE DISEASE

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Introduction

Markers of acute and chronic postoperative pain are still not well understood. Single reports presenting the problem of pain in patients after neurosurgical spine surgery have been published recently. However, very little research has been conducted so far on the predictors of acute and chronic pain after spine surgery.

Aim

Our study aimed to find markers of postoperative acute and chronic pain disorders in patients treated for lumbar or cervical spondylosis, without any neurological deficits.

Methods and Materials

The study included 81 patients (mean age: 47.4 years). The exclusion criteria comprised: mental illness, neurological deficits, and serious chronic somatic diseases. All patients gave written consent to participate in the study. Upon admission, a physical examination and assessment of pain intensity (VAS), depression, and anxiety severity scale (HADS), and personality assessment (FCZ-KT) were performed. On the 3rd day and 12 weeks after the procedure, VAS and HADS scales were repeated. The collected data was subjected to statistical analysis using the STATISTICA 13.1

Discussion

Pain intensity (VAS) significantly decreased on the 3rd day ($p < 0.001$) and 12 weeks ($p < 0.05$) after surgery. Patients reporting acute postoperative pain were significantly more likely to be women ($p = 0.006$), with a shorter preoperative pain history ($p = 0.011$), and with lower perseveration intensity. Patients with higher endurance (FCZ-KT) reported lower pain levels 12 weeks after surgery. Furthermore, a relationship between the severity of anxiety and depression and pain intensity was observed.

Conclusion

In the study, both gender and preoperative history of pain duration turned out to be predictors of acute postoperative pain. Neurosurgical treatment was crucial for pain relief. Moreover, pain intensity significantly correlated with the level of depression and anxiety. The obtained results suggest a holistic approach to treating pain and the possibility of including these variables in further research programs.

EFFECTIVE TREATMENT OF A VERY LARGE SKULL BASE MENINGIOMA WITH VOLUME-STAGED HYPOFRACTIONATED GAMMA KNIFE RADIOSURGERY

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Introduction

Traditional gross surgical resection is nearly impossible for skull base meningiomas without significantly increased risk of morbidity, mortality due to complicated accessibility, proximity to vital structures. Gamma Knife Radiosurgery (GKRS) is a safe, less invasive, effective primary or additional treatment option. However, single-fraction GKRS has its limitations as delivering effective radiation doses in a single-fraction for tumors larger than 3-3,5 cm diameter can cause serious radiation-induced toxicity, damage critical radiosensitive functional areas near the meningioma.

Aim

A 30-year-old female patient diagnosed with meningiomatosis, surgically treated 3 times. The patient closely followed because of growing meningioma nodes after previous subtotal resection. Due to their size (28,883 cm^3), difficult access, proximity to vital brain structures (i.e. cavernous sinus, ACI sin., optic nerves, etc.) GKRS was chosen. A volume-staged hypofractionated treatment plan was devised. During stage I, the patient received 25Gy over 5 days with 52% isodose, after 2 months during stage II – 25Gy over 5 days with 50% isodose. After GKRS no complications or new neurological symptoms were noticed. Cranial MRIs at 6,12, 18, 24, 36 months after GKRS showed respectively 1,39%, 8,05%, 15,64%, 16,82%, 25,46% decrease in meningioma's volume compared to pre-GKRS MRI scan. Intracranial and intraorbital compression, pain and exophthalmos decreased.

Methods and Materials

Clinical case analysis

Discussion

Volume-staged hypofractionated method can be used to divide a large meningioma into parts, when each receives a similar radiation dose to single-fraction GKRS over 2-5 fractions with a months-long pause in between. GKRS offers a favorable outcome without invasive treatment for meningiomatosis patients.

Conclusion

GKRS is a viable option even for sizable meningiomas as volume-staged hypofractionated GKRS demonstrates good long term tumor growth control with reduced brain radiotoxicity risk and critical structure damage.

NEUROSCIENCE AND NEUROSURGERY

POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME – CASE OF 51-YEAR-OLD WOMAN

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Introduction

Posterior Reversible Encephalopathy Syndrome (PRES) is a rare neurological condition that typically presents with symptoms such as headaches, visual disturbances, altered consciousness, and epileptic seizures. PRES is usually triggered by a sudden increase in arterial pressure, but other potential causes include immunosuppressive drug use, septic shock, organ transplantation, or nephrotic syndrome.

Aim

A 51-year-old woman was admitted to the emergency department due to malaise, fever, and impaired consciousness. Following a kidney transplant from a deceased donor in 2006, during graft failure and end-stage renal disease, she resumed hemodialysis in July 2023. The patient had left dialysis the day before admission. According to her husband, she had been feverish, vomiting, and refraining from medication for four days. On admission, the patient was without logical contact, conscious, spoke unclearly, monologued, and moved her limbs. No focal neurological signs, stroke symptoms, meningeal signs, tremors, or myoclonus were observed. HR 90/min, BP 200/90 mmHg. Occasionally foamy discharge from the mouth. Physical examination was difficult. Subsequently, the critically ill patient was admitted to the nephrology department. A seizure occurred during the stay – midazolam was administered. Non-contrast head CT revealed extensive hypodense areas up to 50mm in the white matter of both occipito-parietal regions – an ambiguous picture, suggesting inflammation. Symmetric ventricular system, centrally positioned, not dilated. Based on clinical presentation and typical CT findings, the neurologist diagnosed posterior reversible encephalopathy syndrome and recommended aggressive blood pressure reduction along with intravenous antiepileptic drugs in case of seizures.

Conclusion

The PRES syndrome is challenging to diagnose. It is crucial to differentiate it from reversible cerebral vasoconstriction syndrome, ischemic stroke, Creutzfeldt-Jakob disease, or neoplasms. This case illustrates how important accurate imaging diagnostics and staying updated with the latest findings in the field of medicine are for making a correct diagnosis.

A RARE CASE REPORT OF MALIGNANT MESOTHELIOMA TUNICA VAGINALIS TESTIS

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Introduction

Malignant mesothelioma tunica vaginalis testis (MMTVT) is an exceptionally rare malignancy accounting for less than 1% of all mesothelioma cases with mean survival of 24 months. It does not have a specific clinical presentation and thus may be mistaken for benign conditions which could be treated conservatively, delaying the diagnosis, hereby worsening the already poor prognosis.

Aim

In June of 2021, a 76-year-old male presented complaining of a palpable mass in the left scrotum. The patient had a significant history of prostate cancer successfully treated with brachytherapy in 2016. The histopathological investigation of the specimen obtained in the left inguinal orchiectomy revealed an epithelioid variant of MMTVT which was later treated with radical scrotectomy with urethral repositioning and inguinal lymph-node dissection. After 3-months without signs of disease progression the patient was put on active surveillance. In March of 2023, the patient presented complaining of a hard palpable mass in the right inguinal area which was later verified to be a metastasis suggesting a systemic progression of the disease. Whole body CT revealed possibly metastatic multiple lymphadenopathy. Adjuvant chemotherapy of Carboplatin/Pemetrexed was applied and later changed to Gemcitabine due to continuous systemic progression. The patient is currently alive and well.

Discussion

The pathophysiology of MMTVT is unknown, but local exposure to trauma, radiotherapy or asbestos may play a key role. The treatment usually includes radical orchiectomy, lymph-node dissection, radiotherapy, and chemotherapy. Most MMTVT cases share a lymphatic spread pattern making radical scrotectomy with lymph-node resection of high importance in disease management. Despite all efforts, the entity shows a great rate of recurrence within the first 2-years posing both diagnostic and therapeutic challenges.

Conclusion

Based on this clinical report, it is clear that MMTVT still poses great diagnostic and therapeutic challenges.

ONCOLOGY

JUVENILE-ONSET RECURRENT RESPIRATORY PAPILLOMATOSIS (JoRRP) ON THE EXAMPLE OF A 4-YEAR-OLD PATIENT

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Introduction

Recurrent laryngeal papillomatosis is a rare condition, yet the most common benign neoplastic disease of the respiratory system in children. Its etiological factor is the human papillomavirus (HPV), which is most commonly transmitted during childbirth. The disease manifests with the appearance of cauliflower-like changes in the respiratory tract, including the larynx, which causes dyspnea and phonation disorders. Surgical interventions are mainly used in the treatment process, but in recent years, the importance of vaccination against HPV has also been emphasized. The prognosis for JoRRP is particularly unfavorable in patients who develop the condition before the age of 1 year.

Aim

The case of a 4-year-old patient is described in the paper, who was first diagnosed with papillomatous changes at 8 months of age. During many hospitalizations, recurrent symptoms were reported, including voiceless crying, hoarseness, inspiratory stridor, and even dyspnea. The patient with JoRRP underwent 10 direct laryngobronchoscopies with papillotomy (both scheduled and emergency) from diagnosis to the present moment. Each time, symptoms improved after the procedure but recurred with the regrowth of papillomas. The patient received the HPV vaccine 2 months before the last direct laryngobronchoscopy. Examination did not show signs of lesion regrowth.

Conclusion

Currently, symptomatic methods such as papillotomy procedures are mainly used in the treatment of recurrent respiratory papillomatosis. However, they are associated with the risk of complications such as the formation of adhesions of the anterior larynx, restricting the movement of the vocal folds, as observed in the described patient. Therefore, increasing attention is being paid to the possibility of effectively treating the causal infection through vaccination against the HPV virus.

PREGNANCY MANAGEMENT AND CHEMOTHERAPY CHALLENGES IN ALVEOLAR SOFT TISSUE SARCOMA: CASE REPORT

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Introduction

Cancer occurring during pregnancy is relatively uncommon, with an incidence of approximately 1 in 1,000 pregnancies. However, it ranks as the second most frequent cause of death among women of reproductive age. Alveolar soft part sarcoma (ASPS) is an infrequent type of soft tissue sarcoma characterized by its origin from unknown tissue, significant invasiveness, propensity for rapid metastasis, and unfavorable prognosis. It comprises less than 1% of adult soft tissue sarcomas and predominantly affects female patients, typically with a median age of 20 years.

Discussion

A 23 year–old pregnant female was admitted to Pauls Stradiņš Clinical University Hospital on the 10th of May 2021, with a five-month history of gradually increasing right supragluteal edema. On the 8th of April, biopsy results showed the characteristic features of ASPS. The initial MRI showed a right side abnormal mass that has destroyed the right-sided os coxae above the level of spina iliaca anterior inferior. It has also infiltrated the right sided sacroiliac joint and partially affected the sacrum. at the L4-5, L5-S1 level, the formation compressed the right L4-5, L5-S1 foraminal roots with involvement of the right L4, L5, S1 pedicles. The mass spread into the small pelvis, compressing the small pelvic organs, without a sign of their infiltration, while also compressing the fetus in the left. The patient started the ASPS chemotherapy protocol of Ifosfamide and Doxorubicin. The patient received 1 cycle of chemotherapy, but she presented with ASPS progression. On the 9th of June, a baby was born via C-section. A month later, the patient had a follow-up CT scan where lung metastasis was detected. Later, the patient had a second-, third- and fourth-line systemic therapy and pain relief radiation therapy for the gluteal region with 20 Gy, but in 2022 year young women died.

Conclusion

ASPS ranks among the least common soft tissue sarcomas, which is associated with poor prognosis.

ONCOLOGY

NAVIGATING OVARIAN CANCER COMPLEXITY THROUGH COMPREHENSIVE CARE – A CASE STUDY APPROACH

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Introduction

This comprehensive review explores risk factors associated with ovarian cancer, encompassing genetic syndromes, BRCA1/BRCA2 mutations, nulliparity, Lynch syndrome in relatives, and ovulation stimulation. The article covers symptoms, diagnostic approaches, and treatment modalities, including surgery, chemotherapy, and radiotherapy, delving into molecular aspects of ovarian cancer lesions. The FIGO classification is discussed, emphasizing its role in staging the disease.

Aim

In September 2020, the patient underwent laparotomy and HIPEC for cytoreduction, maintaining good general condition and cardiovascular health (initial AS 85 bpm, RR 127/81 mmHg). Experiencing abdominal pain, urinary issues, and with a family history of breast and colorectal cancer, she underwent successful cytoreduction, including hysterectomy. Postoperative care, managed by a nurse, focused on pain management, nutritional support, and interdisciplinary collaboration among nursing, surgery, and oncology teams.

Methods and Materials

The study presents an individual case – a 34-year-old woman diagnosed with FIGO IIIC malignant serous adenocarcinoma of the right ovary. Utilizing a qualitative research approach, diverse data collection methods are employed to effectively address scientific inquiries, aiding midwives in understanding contributing factors to specific medical scenarios.

Discussion

Once the diagnosis of ovarian cancer has been made and established, the stage should be determined, according to the four-stage FIGO classification, and the malignancy of the resulting lesions based on molecular features.

The midwife is essential in the process of diagnosis, treatment, and recovery of the woman with a gynaecological illness. In providing care, she performs direct professional functions.

Conclusion

This case study underscores the effective interdisciplinary management of a 34-year-old woman with FIGO IIIC malignant serous adenocarcinoma of the right ovary. The collaboration among nursing, surgical, and oncology teams proved pivotal in navigating the patient's preoperative, intraoperative, and postoperative phases, emphasizing the importance of a comprehensive and integrated approach in addressing the complexities of ovarian cancer care.

EPITHELIAL-TO-MESENCHYMAL TRANSITION-RELATED PHENOTYPE AND TRANSCRIPTOMIC PROFILE OF SINGLE CIRCULATING TUMOR CELLS IN BREAST CANCER

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Introduction

Through epithelial-to-mesenchymal transition (EMT) circulating tumor cells (CTCs) acquire phenotypes linked with aggressive disease manifestation in several cancers, including breast cancer (BC). Therefore, characterization of CTCs' phenotypes from BC patients, especially those undergoing EMT, is urgently needed.

Aim

We aimed to detect single CTCs with different EMT phenotypes, perform their transcriptomic profiling, and correlate CTCs presence with clinico-pathological characteristics of BC patients.

Methods and Materials

CTCs were enriched from blood samples of 116 BC patients by density gradient centrifugation, CD45-based immunodepletion and immunofluorescent (IF) staining. CTCs were picked by micromanipulation, subjected to transcriptome quality control and gene expression profiling.

Discussion

In early BC patients' (n = 104) CTCs were classified based on IF staining for epithelial (EpCAM/E-cadherin) and mesenchymal (cell-surface vimentin/MCAM) markers. Fifty-one percent of the patients were CTCs-positive, with epithelial CTCs (eCTCs) detected in 7.4%, mesenchymal (mCTCs) in 50.0%, epithelial-mesenchymal (emCTCs; co-expressing epithelial and mesenchymal markers) in 11.1%, and various CTCs' phenotypes in 31.5% of the patients. The occurrence of mixed CTC phenotypes was higher in triple-negative compared to luminal BC patients ($P = 0.002$).

Number of CTCs was elevated in patients with unfavorable tumor characteristics: T2-4 (total CTCs; $P = 0.037$), G3 (total CTCs; $P = 0.006$), ER negative (total CTCs, eCTCs, emCTCs, mCTCs; $P < 0.05$), PR-negative (eCTCs; $P < 0.001$) and HER2-positive (mCTCs; $P = 0.024$) and involved lymph nodes (total CTCs, eCTCs, emCTCs; $P < 0.05$).

Thirty-three single cells from BC patients underwent transcriptome sequencing. Among 471 genes downregulated in CTCs, 115 were involved in transcription, translation, and post-translational processing. Only 2 genes were upregulated in CTCs – CYFIP1 implicated in translation inhibition via mRNA's binding, and KDM3B, involved in ferroptosis inhibition.

Conclusion

Our method enables isolation, detection, and transcriptomic assessment of single CTCs with diverse EMT statuses. Transcriptomic analysis reveals indications of translation inhibition in CTCs, potentially triggered by stressful conditions.

PAEDIATRICS

TREATMENT OF RECURRENT DESMOID FIBROMATOSIS IN 12-YEAR-OLD PATIENT – CASE REPORT

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Introduction

Aggressive fibromatosis (AF) is a rare, locally aggressive tumor characterized by a heterogeneous character varying from spontaneous regression to local relapse. The main treatment method is a radical resection, which is often impossible due to the infiltrative growth of the adjacent structures.

Aim

A 10-year-old boy was diagnosed with desmoid fibromatosis (DF) of his right popliteal fossa. The primary tumor was resected radically. After 1.5 years, he was admitted to the Department of Orthopedics due to a right knee flexion contracture, knee pain, and a walking disorder. The biopsy confirmed a recurrence of DF. According to the right knee MRI, the R0 resection was impossible.

Methods and Materials

According to CWS Guidance 2010, 3 VAC (vincristine, actinomycin-D, and cyclophosphamide) chemotherapy cycles were administered, complicated by the mobility worsening and cachexia leading to the percutaneous endoscopic gastrostomy. Due to the persistent disease stabilization, the patient completed the next 3 treatment lines with good tolerance, subsequently: 11 methotrexate-vinblastine cycles, 3 months of 3rd-line sorafenib therapy, and 3 months of 4th-line sorafenib-celecoxib therapy. Thanks to mobility rehabilitation, the patient now moves on crutches. Due to the lack of response to administered therapy and impossible sparing surgery, the patient is prepared for the right extremity amputation.

Discussion

A pediatric patient with AF requires strict monitoring after surgery due to the frequent relapses. AF of the lower extremities can lead to severe mobility impairment, despite its locally aggressive character. There is a need for mobility rehabilitation parallel to oncological treatment. In unresectable AF, chemotherapy plays a key role in enabling R0 resection. It can lead to significant body weight loss that requires nutritional intervention.

Conclusion

There is a rising role of novel therapies in the treatment of DF. However, their application in pediatric patients is limited. In case of lacking AF regression, extremity amputation has to be performed to eradicate neoplasm.

INTRAORAL ATYPICAL SPITZOID TUMOR ASSOCIATED WITH PEUTZ-JEGHERS SYNDROME: A CASE REPORT

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Introduction

Peutz-Jeghers syndrome (PJS) is a hereditary cancer syndrome caused by an autosomal dominant inheritance pattern from mutations in the STK11 gene. It is characterized by the presence of melanocytic lesions (mouth, fingers) and hamartomatous polyps of the gastrointestinal tract.

Aim

STK11 gene analysis for each of the family members revealed the variant c.920+7G > C;(p.?), re-classified with time from VUS to benign. Subsequent diagnostics of SMAD4, BMPR1, PTEN genes, and aCGH didn't reveal any abnormalities. Re-analysis of the STK11 gene reported a heterozygous, likely pathogenic variant c.451_452del,p.(Cys151Profs*11) in the father, which finally confirmed PJS. For the remaining members of the family, the result of the analysis is pending.

In 2022, the youngest boy was examined for a pink-red intraoral lesion on the left cheek's mucosa. Histological analysis showed markers ALK-BOND(+/-), BAP-1(+), BRAFV600E(-), cyclinD1(+), p16(+/-), CKPAN(-), melanA(+/-), HMB-45(+/-), and a Ki67 positivity rate of around 18%; diagnosed as Atypical Spitz Tumors (ALK-positive), showcasing a distinct histopathological profile of melanocytic intradermal neoplasm. Subsequently, a similar lesion emerged on the right cheek, which was excised along with an extension of the margins from the initial tumor.

Methods and Materials

We present a family (father and 3 children) with PJS features: a 43-year-old father with a history of small bowel tumor, gastrointestinal tract hamartomatous polyps, and mucocutaneous lesions; a 17-year-old daughter with similar symptoms; a 9-year-old son with mucocutaneous lesions; and a 3-year old son with two atypical spitzoid tumors.

Discussion

PJS increases the risk of various cancers, although the incidence of tumors in individuals under the age of 20 remains very low (2%).

Conclusion

This case represents the first documented instance of an intraoral Atypical Spitz Tumor within the family of PJS, which might be showing the potential link between these two conditions, contributing to the expanding spectrum of clinical manifestations associated with this genetic disorder.

PAEDIATRICS

SCHWANNOMA OF THE PARAPHARYNGEAL SPACE ON THE EXAMPLE OF A 14-YEAR-OLD MALE PATIENT

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Introduction

Tumors of the parapharyngeal space are only 0.5% of head and neck cancers, and only 30% of them are neurogenic tumors such as schwannoma, also called neurilemoma. Schwannoma is a benign tumor that arises from the Schwann cells of the myelin sheaths of nerves. If the tumor is in the parapharyngeal space, it may cause a sensation of a foreign body in the throat, dysphagia, and inarticulate speech.

Aim

A male patient was diagnosed with a schwannoma in the right parapharyngeal space. The patient had a history of frequent nosebleeds and a feeling of discomfort in the throat for several months. The physical examination revealed asymmetry of the palatal arches and anisocoria. MRI (magnetic resonance imaging) was performed, and the patient was qualified for surgery to remove the tumor. He underwent it successfully. One day after the operation, the patient was diagnosed with symptoms of Horner's syndrome, which, according to the mother, had been present even before the surgery. A neurological and ophthalmological consultation was performed, and a genetic consultation was recommended.

Conclusion

The most common method of treating schwannoma of the parapharyngeal space is radical surgery, which, due to the complex location of the parapharyngeal space, is not a simple procedure. Possible complications include hematomas and damage to numerous cranial nerves. It was possible to avoid serious difficulties in the described case and significantly improve the patient's quality of life. The follow-up examinations showed no recurrence of the disease.

UNIQUE CASE OF TINEA CAPITIS IN 4 YEARS OLD CHILD

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Introduction

Tinea Capitis (TC) is a fungal infection affecting the scalp hairs. It's characterized by the invasion of the hair shaft, follicles, and surrounding skin, often leading to uncomfortable swelling of nearby lymph nodes. Between 2018 and 2022, TC affected a small percentage of the population in Georgia, ranging from 0.013% to 0.019%. However, statistical analysis showed a gradual increase in cases each year. The FDA has approved oral terbinafine for TC treatment in children, while oral ketoconazole is an alternative when griseofulvin is not tolerated.

Aim

In 2022, a 4-year-old male patient was brought to the clinic by his parents with a scalp problem. On physical examination, the patient displayed multiple inflammatory lesions on the scalp. These lesions were erythematous, hyperemic, and exhibited signs of hemorrhage and pus formation.

Different healthcare providers prescribed a combination of therapies, including oral prednisone and mometasone lotion, that caused erythema, pain, progressive spread, and the formation of a yellowish, purulent crust. Despite interventions, the patient's condition worsened, leading to the surgical removal of a persistent scalp crust, a mistake due to incorrect diagnosis and treatment. Complications such as bleeding and infection arose, prompting admission to the Todua clinic, from where new treatments began, which involved oral terbinafine 125 mg/day for 6 weeks, ketoconazole 2% shampoo twice weekly, and topical betamethasone + clotrimazole + gentamicin cream twice daily. Over 8 weeks, there was a significant improvement, but alopecia areata remained a concern. The FDA has approved oral terbinafine for TC treatment in children, while oral ketoconazole is an alternative when griseofulvin is not tolerated.

Conclusion

This case report highlights the complex diagnostic and treatment challenges of TC, emphasizing the need for precise diagnosis and knowledge of treatment planning.

PAEDIATRICS

NEW ONSET OF POLYDIPSIA AND POLYURIA IN A 10-YEAR-OLD BOY

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Introduction

Central diabetes insipidus (CDI) is a rare disorder resulting from inadequate hypothalamic production or pituitary secretion of vasopressin or antidiuretic hormone (ADH). CDI usually manifests as a new onset of polydipsia and polyuria, accompanied by appropriate changes in blood plasma and urine. The diagnosis is made after desmopressin stimulation, which relieves the symptoms.

Aim

A 10-year-old boy was referred to the endocrinology department due to recently developed polydipsia and polyuria, noted 8 weeks before admission. Clinical examination revealed obesity, an appropriate height for parental target height, and no signs of puberty. His medical and family histories were unremarkable. Initial laboratory tests confirmed normoglycemia, hypernatremia, and low urine specific gravity. The fluid deprivation test, followed by a vasopressin challenge test, enabled the final diagnosis. Anterior pituitary hormone deficiencies were excluded, and the magnetic resonance imaging (MRI) showed the absence of a posterior pituitary signal in an otherwise normal pituitary gland, including the pituitary stalk. Serum b-human chorionic gonadotropin (bhCG) and alpha-fetoprotein (AFP) were negative. The patient was diagnosed with idiopathic central diabetes insipidus, and treatment with desmopressin was initiated.

Conclusion

The onset of idiopathic diabetes insipidus may be associated with rare occult malignancies such as germinoma. The risk of underlying malignancies increases in cases of pituitary stalk thickening, coexisting endocrinopathy, or impaired vision. Therefore, close follow-up is essential, including repetitive anterior pituitary hormone evaluation, initial MRI scanning every 3 months, repetitive measurements of serum or cerebrospinal fluid tumor marker concentrations, and optometric assessments.

INNOVATIVE APPROACH IN TREATING ACNE VULGARIS: A LITERATURE REVIEW

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Introduction

Acne Vulgaris induces inflammation and scarring. Three forms of Botulinum neurotoxin A (BTX-A): OnaBTX-A, AboBTX-A, and IncoBTX-A, aid in acne and scarring by blocking acetylcholine, reducing sebum, intercepting microbiome changes, and halting follicular keratinization. However, BTX-A's higher cost warrants an evaluation of benefits versus drawbacks.

Aim

To analyse scientific studies on BTX-A's use in acne vulgaris treatment, side effects, and long-term application.

Methods and Materials

A systematic literature review was performed following the PRISMA guidelines, using the PubMed database from January to February 2024. Keywords: botulinum neurotoxin, acne vulgaris, facial pores, sebum, hyperpigmentation. Inclusion criteria: full-text articles, in English, published within the last 10 years, presenting the response to the applied treatment. Excluded: case reports, literature, systematic reviews, meta-analyses. Out of 78 articles, 11 were selected.

Discussion

For facial pores treatment (n = 87), IncoBTX-A/OnoBTX-A was intradermally injected into the forehead and cheeks; average total dose (ATD) – 42 U, average focal dose (AFD) – 4 U. Pore quantity decreased by 42%, size by 63%, effects lasting 4 months. 20% experienced temporary redness and burning. For sebum hypersecretion (n = 134), OnaBTX-A/AboBTX-A was injected (ATD – 20 U, AFD – 2,5 U) into the cheeks and chin, with effects lasting 5 months. One reported temporary mouthlift issues. For acne lesions (n = 80), IncoBTX-A/OnaBTX-A were injected (ATD – 20 U, AFD – 2 U) into the cheeks, chin, and forehead. Lesions decreased by 21%. The effects lasted 4 months. For acne scars and hyperpigmentation (n = 82), OnaBTX-A/AboBTX-A/IncoBTX-A were injected (ATD – 20 U, AFD – 3 U) into the cheeks and forehead, with 34% optimal and 30% satisfactory improvement. No adverse reactions and long-term efficacy were monitored.

Conclusion

OnaBTX-A/IncoBTX-A is the most favourable option for acne vulgaris, influencing every phase of acne development. Despite the absence of long-term adverse effects, BTX-A efficacy typically lasts 4 months, a factor that might not warrant the expense for all patients.

POSTER SESSION

YERSINIA GASTROENTERITIS IN AN IMMUNOSUPPRESSED PATIENT: A CASE REPORT

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Introduction

Yersinia enterocolitica is a foodborne pathogen able to withstand low temperatures and cause yersiniosis in humans, characterized by acute gastroenteritis and potentially severe conditions like sepsis. Patients with other comorbidities such as immunosuppression and malignancy have a higher risk of yersiniosis. In 2021, 28 EU/EEA countries reported 6,876 confirmed cases of yersiniosis, with an overall rate of 1.9 cases per 100,000 population. Enteropathogenic yersiniosis is usually harmless to healthy people but can be deadly for immunocompromised patients due to widespread bacterial infection, leading to a mortality rate of up to 50%.

Discussion

A 67-year-old man with a history of gastric cancer underwent chemotherapy and subsequently developed recurrent diarrhea > 6 times a day. He presented to the emergency department on the 9th day post-chemotherapy with severe symptoms including profuse vomiting, fever > 38°C, and diarrhea without blood. Blood tests showed pancytopenia and CRP 76.7mg/l. He received intravenous fluids and Sol. Ampicillin/Sulbactam 1.5g x4/day. Treatment also included Smecta powder. After 2 days of treatment, the patient no longer had a fever or vomiting, but diarrhea with watery stools persisted 10 times a day. Further tests revealed worsening inflammation: CRP 111.8 mg/l., leukopenia, hypotension, fever leading to the septic condition, and the addition of IV Sol Metronidazole. Stool and blood cultures identified Yersinia enterocolitica, sensitive to Ampicillin. The patient's condition gradually improved with decreased diarrhea and improved physical tolerance. After 3 days, CRP levels began to decrease (42.5 mg/l) and after 8 days of treatment, there was no bacterial growth in the blood culture. He was discharged with a prescription for Sultamicillin tablets to continue for another 5 days.

Conclusion

Factors such as gastric cancer and chemotherapy leading to immunosuppression are risk factors for the development of Yersinia enterocolitica-induced enterocolitis with septic condition.

ACUTE ESOPHAGEAL NECROSIS: AN OVERVIEW OF CLINICAL CASES

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Introduction

Acute esophageal necrosis is a rare, life-threatening condition, with an unknown etiology. It is more common in males, occurring in the general population at a rate of 0,008-0,2%.

Aim

To analyse clinical cases of acute esophageal necrosis published between August 1, 2013, and August 1, 2023.

Methods and Materials

Based on *Google Scholar*, *PubMed,* and *ClinicalKey* databases, 16 clinical cases were analysed.

Discussion

Acute esophageal necrosis (AEN) predominantly affected individuals aged 40 to 86, with an average of 63,5 years (SD 13,301). Males had a significantly higher prevalence (93,8%, N = 15) than females (6,2%, N = 1), with the highest morbidity in the 60-69 age group (31,3%, N = 5).

Major risk factors for AEN include diabetes, hypertension, kidney dysfunction, and sepsis. Certain medications, including aspirin, alendronate, clozapine, and olanzapine, can induce ischemic esophageal changes. In one case, psychotropic substances (cocaine and marijuana) were the sole cause of ischemic changes.

Common AEN symptoms included gastrointestinal bleeding, epigastric pain, fever, and weakness, less common-syncope, diarrhea, pallor, hypothermia, hypotension, confusion, tachypnoea, and tachycardia.

Esophagogastroduodenoscopy detected diffuse black circumferential discoloration of the esophageal mucosa, stopping abruptly at the gastroesophageal junction. Suspected complications prompted an esophagogram or CT scan, revealing 5 complicated cases, including 2 with perforations, and 3 with strictures.

Primary AEN treatment included conservative measures: fluid therapy, proton pump inhibitors, *nil per os*, and parenteral nutrition. Antibiotics were given to 50% (N = 8) of patients for infection, intestinal obstruction, or fever. Three patients required erythrocyte transfusions for anemia correction. Endoscopic methods, including stricturoplasty and balloon dilation, were used to treat esophageal stricture. The perforation case underwent esophagectomy.

19% (N = 3) of patients died, posing challenges in determining if AEN directly caused death or resulted from comorbidities.

Conclusion

AEN, a multi-etiological disease, presents with upper gastrointestinal bleeding, epigastric pain, fever, and weakness. Diagnosis involves endoscopy, while primary treatment includes conservative measures.

POSTER SESSION

NYELOID SARCOMA WITH INITIAL PRESENTATION IN ORBIT: A CASE REPORT

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Introduction

Myeloid sarcoma (MS) is a low-frequency neoplasm, it occurs mainly in patients with acute myelogenous leukemia (AML) subtype M2. On the other hand, presentation in orbit is uncommon and is usually associated with serious systemic affectation.

Discussion

A 42-year-old female patient with no relevant medical history started her condition three months ago with exophthalmos of the right eye, edema in the eyelid region, and pain. She went to a private clinic and received medical treatment; however, she did not improve so she came to our institution. A computerized tomography was performed, which showed an intraorbital lesion with respect to the right eye. Two days later, a biopsy and bone marrow aspirate were performed, showing decreased cellularity in myeloid series and cells morphologically compatible with some type of lymphoma, so a consultation with the hematology service was requested, who indicated cyclophosphamide, partially reducing the lesion in size. However, it grew again, so a biopsy of the lesion was taken, diagnosing MS and starting chemotherapy (CTX) with the R-CHOP scheme. One month later the patient presented dry cough and dyspnea, a chest x-ray was taken showing right basal pulmonary consolidation, suspecting nosocomial pneumonia, so antibiotic therapy was started, however, she presented abdominal pain and data of septic shock, and antibiotic therapy was changed, unfortunately, 24 hours later the patient passed away.

Conclusion

This neoplasm presents signs and symptoms that can be confused with lymphoproliferative diseases or Sweet's syndrome. Although it is associated with an unfavorable prognosis, CTX for AML has shown good results. Another option is bone marrow stem cell transplantation, which has been shown to improve survival. It is important to make an individual approach to define the best therapeutic approach and to have a positive impact on the patient's prognosis.

IMPACT OF EARLY PREGNANCY BODY MASS INDEX ON THE DEVELOPMENT OF GESTATIONAL DIABETES

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Introduction

Gestational diabetes (GD) is defined as a glucose tolerance disorder occurring during pregnancy. This condition, associated with maternal and neonatal adverse outcomes, is the most common medical complication of pregnancy. However, the prevalence of GD has been increasing even more in parallel with the worldwide epidemic of obesity.

Aim

To determine whether a higher BMI before pregnancy is associated with a significantly increased risk of developing gestational diabetes.

Methods and Materials

A retrospective study was conducted at the Obstetrics and Gynecology Clinic of Kaunas Clinics. Patients who had a trial of labor after cesarean (TOLAC) section from September 1, 2020, to September 1, 2022, were selected from the clinic's registry. Women were divided into four groups based on body mass index (BMI) during their first visit to the gynecologist: Group I consisted of women with BMI < 18.5 kg/m^2 , Group II BMI 18.5-24.9 kg/m^2, Group III BMI 25-29.9 kg/m^2, and Group IV comprised women with BMI > 30 kg/m^2. Data was analyzed using IBM Statistics SPSS for frequencies and $\chi 2$ tests. Results with values of $p < 0.05$ are considered statistically significant.

Discussion

The results of the analysis were based on 370 patients who underwent a Trial of Labor After Cesarean (TOLAC). The study found that the average BMI during the first trimester was 25.779±5.7242 kg/m^2, ranging from a minimum BMI of 15.8 kg/m^2 to a maximum BMI of 48.5 kg/m2. When examining the influence of BMI at the beginning of pregnancy on the development of gestational diabetes controlled by diet, no statistically significant data were found($p > 0.05$). However, a statistically significant association was identified, indicating that women in Group IV were more frequently diagnosed with gestational diabetes controlled by insulin therapy compared to women in other groups($p < 0.001$).

Conclusion

Obesity at the onset of pregnancy is associated with gestational diabetes controlled by insulin.

POSTER SESSION

SOLID – LIQUID EXTRACTION OF CARBAMAZEPINE FROM *URASTERIAS LINCKI* COLLECTED FROM THE SVALBARD FJORDS

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Introduction

The global consumption of pharmaceuticals is growing which results in an increase of their concentration and accumulation in the environment. Furthermore, the sewage wastewater treatment technologies are not effective enough to remove those compounds, leading to a significant increase in the presence of pharmaceuticals and their metabolites in Arctic marine waters.

Aim

The aim of this study was to extract carbamazepine (CBZ) (a common antiepileptic drug) from the *U. lincki* homogenized tissues utilizing solid-liquid extraction (SLE) technique, and to measure its concentration using liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS).

Methods and Materials

As part of the PHARMARINE project, in summer 2021, benthic fauna organisms, e.g. starfish *Urasterias lincki* were collected from the Svalbard fjords of Kongsfjorden and Hornsund.

For the detection of CBZ in homogenized starfish tissue, a triple SLE method with acetonitrile (ACN) was used. Each extraction cycle involved shaking the samples for 5 minutes and sonication in an ultrasonic bath for 1 minute, followed by filtration of the collected supernatant with 0.2 µm syringe filters for further sample purification. Prior to the LC-MS/MS analysis, the samples underwent concentration using a centrifugal evaporator set to 30°C, and then dry residues were dissolved in 100 µL of ACN:H2O mixture. LC-MS/MS analysis was performed in a total time of 4.5 minutes using the Kinetex C18 column.

Discussion

The obtained results revealed the presence of CBZ in *Urasterias lincki* tissues.

Conclusion

This is confirming the bioaccumulation of this drug in benthic fauna organisms.

COMPARATIVE ANALYSIS OF LASER INTERSTITIAL THERMAL THERAPY AND GAMMA KNIFE RADIOSURGERY FOR TRIGEMINAL NEURALGIA

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Introduction

Trigeminal neuralgia, an incapacitating ailment characterized by excruciating facial pain, presents therapeutic avenues such as Laser Interstitial Thermal Therapy (LITT) and Gamma Knife radiosurgery. This research endeavors to meticulously evaluate and juxtapose the efficacies and rates of complications stemming from these two therapeutic modalities, as they relate to the mitigation of pain in individuals afflicted with trigeminal neuralgia.

Aim

Both LITT and Gamma Knife radiosurgery effectively relieve trigeminal neuralgia pain, with LITT offering superior complete pain relief and Gamma Knife showing lower recurrence rates. Complication rates were low for both, with LITT demonstrating fewer transient sensory issues. Further research is needed for definitive treatment guidelines.

Methods and Materials

240 trigeminal neuralgia patients were studied, with 150 undergoing LITT (Group A) and 90 Gamma Knife radiosurgery (Group B). Patient demographics, pain relief outcomes, recurrence rates, and complications were analyzed statistically.

Discussion

In Group A (mean age 55±7.2, 62% females), there was a significant improvement in pain relief compared to baseline ($p < 0.001$). 80% experienced complete pain relief, with 15% reporting partial relief. Recurrence was modest at 5%. Complications, mainly transient numbness, or dysesthesia, occurred in 6% of patients, with no infections or major issues. In Group B (mean age 58.3±6.8, 67% females), pain relief also significantly improved ($p < 0.001$), with 75% achieving complete relief and 20% partial relief. Recurrence was slightly higher at 10%. Complications, mainly facial numbness, or weakness, occurred in 8%, with no radiation-induced issues.

Conclusion

Both LITT and Gamma Knife radiosurgery effectively relieve trigeminal neuralgia pain, with LITT offering superior complete pain relief and Gamma Knife showing lower recurrence rates. Complication rates were low for both, with LITT demonstrating fewer transient sensory issues. Further research is needed for definitive treatment guidelines.

POSTER SESSION

LYMPHOPROLIFERATIVE DISEASE WITH INITIAL PRESENTATION IN THE ORBIT: A CASE REPORT

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Introduction

Orbital non-Hodgkin's lymphoma (NHL) is an extremely rare neoplasm representing 1% of all NHL. Lymphoproliferative disease (LPD) has been associated with its development in patients who received long-term renal transplantation.

Aim

A 33-year-old male patient with a history of kidney transplantation 23 years ago, who presents a right intraorbital tumor with proptosis and pain, a contrasted brain magnetic resonance imaging was performed showing a spindle-shaped tumor. Two days later a biopsy was performed, and the patient showed improvement and was discharged four days later. One month later he returned with pain, treated again, and the biopsy result was reported with NHL, positive for CD45, BCL6, and KI67 of 80%. A simple full-body computed tomography (CT) scan was performed, without evidence of lymphadenopathy in other body regions. However, the patient started with fever, abdominal pain, hematemesis, and decreased blood oxygen saturation. A simple CT scan was performed in which pancreatitis with Balthazar E classification and intestinal pneumatosis were found, unfortunately, the patient died hours later.

Conclusion

LPD mainly affects patients who receive a solid organ transplant. It is usually associated with Epstein-Barr virus infection, however, 48% will be negative for this pathogen. The late development has been related to long-term immunosuppression and its prognosis is poor, with a survival rate of 39% at five years, in contrast with a 78% survival rate when there is no relationship with LPD. It is important to closely follow up with post-transplant patients to avoid and/or diagnose this type of disease as early as possible.

LUPUS ERYTHEMATOSUS TUMIDUS: CASE REPORT

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Introduction

Lupus erythematosus tumidus (LET) is a rare chronic inflammatory skin disorder that usually affects sun-exposed areas. Roughly 50% experience rashes with itching, burning, and sensitivity to light. Patients need to be monitored for side effects and potential relapses while treatment progresses from topical corticosteroids to antimalarial drugs**.**

Aim

A 19-year-old patient developed a facial rash, followed by a rash on elbows and toe. The week before, he had a fever of 38°C, weakness, and fatigue.Before this, he had been exposed to direct sunlight. Objectively, 0,3-1,5 cm in diameter reddish papules and plaques were observed on the cheeks and nose, diffusely distributed 2-4 mm papules on both elbows and a 1 cm pinkish plaque on the left foot's 1st toe. Negative direct immunofluorescence and histology showed hyperkeratotic epidermal tissue fragments, edema in the papillary dermis, superficial and deep perivascular lymphocytic infiltration, and abundant mucin deposits between collagen fibres, which indicated a superficial and deep perivascular dermatitis, compatible with Lupus tumidus diagnosis. Blood cell count, general urine test, ALT, AST, creatinine, creatine kinase, ferritin, ESR, and CRP were all within normal limits, and ANA and ANCA were negative. For systemic treatment, Hydroxychloroquine 200 mg dose was prescribed twice a day for 4 months, and later, 200 mg once a day for 2 months. Topical treatment was started with Mometazone furoate 0.1 % cream once a day, but after 2 weeks, steroid acne developed, and it was changed to Tacrolime 0.1% ointment once per day for 6 weeks. The rash had completely disappeared 2 months after the start of the treatment. 10 months post-complition of systemic therapy, the rash had not recurred.

Conclusion

All LET patients are advised sun protection. Combining it with topical glucocorticoids yields positive results. However, Hydroxychloroquine is considered the first-line treatment for LET, especially in cases where topical corticosteroids are ineffective or contraindicated.

POSTER SESSION

FETOSCOPY IS SURGERY: MYELOMENINGOCELE REPAIR

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Introduction

Myelomeningocele (MMC) is the most common congenital anomaly that impacts the nervous system and leads to significant physical impairments. Historically, treatment involved postnatal closure with management of the associated sequelae. Fetoscopy – fetal surgery performed in utero – is a modern alternative to fetal defect repair.

Aim

To assess the efficacy of fetoscopic surgery for MMC with a focus on long-term infant motor function outcomes.

Methods and Materials

Articles published between 2013-2023 in the PubMed database were selected based on a search strategy using the key terms «("Fetoscopy" [Mesh]) AND ("Meningomyelocele" [Mesh])». Ten articles out of sixty-six in which one of the surgical approaches for MMC was fetoscopy were selected, including original studies and reviews. Studies that had not analysed/quantified motor function were excluded. The target population consists of patients with a prenatal diagnosis of MMC and surgical repair who were followed up postnatally. PRISMA guidelines were used for data synthesis and bias risk was not evaluated.

Discussion

The prenatal intrauterine approach seems to yield superior results regarding the preservation of motor function compared to postnatal surgery, especially the walking independently ability.

The results in the improvement of motor function due to the fetoscopy compared to the open surgery are noticed in articles. However, two authors consider that there should be no definitive conclusions because of the absence of long-term results.

One article from our selection introduces a different perspective regarding the outcome: the large MMC sac volume affects the prenatal motor function after surgery, but the fetoscopic approach is the only one that reduces the association.

Conclusion

Prenatal repair has revolutionized the treatment of MMC and current research into further improving outcomes is promising.

OPTIMIZATION OF SPME-LC-MS/MS METHODOLOGY FOR ANALYSIS OF PHYTO- AND ENDOCANNABINOIDS IN SERUM SAMPLES

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Introduction

The endogenous cannabinoid system is an important component of the organism that provides the proper state of the body by participating in multiple physiological processes, including energy metabolism, regulation of remembrance, and motor activity. This system consists of several types of receptors, such as CB1 and CB2, ligands for those receptors, and enzymes involved in the metabolism of endogenous cannabinoids (endocannabinoids, ECBs). Apart from ECBs, those receptors are also affected by exogenous compounds, e.g. plant cannabinoids (phytocannabinoids, PCBs).Aim

The purpose of this study was to optimize a methodology for simultaneous analysis of selected ECBs and PCBs, namely AEA, NADA, 2-AG, THC, 11-COOH-THC, 11-OH-THC, CBD, and 7-CCOOH-CBD in serum samples with the use of solid-phase microextraction (SPME) technique along with liquid chromatography-tandem mass spectrometry (LC-MS/MS). Optimization of the sample preparation step based on SPME included the selection of extraction time, desorption time, and solvents used in the desorption of analytes from the selected coating, i.e. C18.

Methods and Materials

In optimized conditions, extraction of analytes from serum samples was performed for 30 min. After the extraction step, the analytes were desorbed from the coating to a mixture of MeOH/IPA (50:50, v/v) for 30 min. The obtained extracts were then subjected to LC-MS/MS analysis. Analytes were separated on the Kinetex XB-C18 column (100 × 2.1, 2.6 µm). The time of a single analysis was 4.5 min. The analysis was performed in positive ionization mode.

Discussion

The optimized SPME-LC-MS/MS method facilitated the successful separation and analysis of all studied compounds and three deuterated internal standards in serum samples in a short analysis time.

Conclusion

The developed method is the basis for further analysis of the level of ECBs and PCBs in real biological samples.

POSTER SESSION

CASE REPORT: UNIQUE CASE OF CORTICOBASAL DEGENERATION SYNDROME ACCOMPANIED WITH DEMENTIA

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Introduction

Corticobasal degeneration (CBD) is a rare, progressive neurodegenerative disease, causing ataxia and dementia. Worldwide more than 55 million people are affected by dementia.

Aim

A 35-years-old male presented to the neurologist with mild symptoms of dementia, such as headache, loss of memory, dizziness, disturbance of balance while walking, numbness in the right arm and leg, difficulty in speaking, and aggressiveness. Angiography (Avanto/Aera-1.51) had been done, where gross atrophic changes of the cortex were revealed. In the MMSE (done in 2021), the patient got 23 points, but one year later, the condition became so severe (was aggressive and inadequate) that the test couldn't even be conducted. The patient underwent digital EEG (electroencephalogram), MRI (in 2021), where were detected: mild atrophic changes in the temporal lobe, Right hypoplasia of the vertebral artery, primary progressive aphasia. On MRI (done on 14.06.2022), appeared that the coils of the left temporal and frontal lobe were much thinner, and the subarachnoid spaces – expanded (compared to the previous study). Such changes are consistent with Frontotemporal Lobar Degeneration.

Medicational treatment was started by national protocol with Donepezil (Aricept) and Namenda. After 1 year of treatment, the patient is stabilized but neurodegeneration of tissues continues.

Methods and Materials

Method: case report, that aims to highlight why standardized treatment is ineffective despite modern medicine advancements. Early onset, frontotemporal lobar atrophies, and rapid degeneration without any genetic or environmental factors make the case unique.

Discussion

To rule out neurological infections, the patient underwent a series of tests, including Anti TP for syphilis, and Anti-HIV 1/2, which all came back negative.

Conclusion

Despite modern medical advancements and innovative diagnostic examinations, standardised treatments for neurodegenerative syndromes can be ineffective. Therefore, reporting similar cases is crucial in identifying common patterns and treatment strategies.

EXPLORING WILD PLANT CONSUMPTION PATTERNS: A COMPARATIVE PILOT STUDY AMONG SCOUTS AND NON-SCOUTS

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Introduction

With increasing concerns over chemical usage in conventional plant production, interest in the consumption of wild plants as a natural alternative is on the rise. Scouts, known for their close connection to nature, may prefer wild plant consumption.

Aim

The study aims to evaluate wild plant consumption among scouts and non-scouts.

Methods and Materials

A validated Block Food Frequency Questionnaire (BFFQ) on dietary habits with an anonymous survey on wild plant consumption was distributed from February 1st to 10th, 2024, on Scout online forums (Scout Group-SG) and among patients at the UCC in Gdańsk (Control Group-CG) from 16 y/o.

Discussion

A total of 187 scouts (63M/124F) and 117 individuals from the CG (40M/77F) completed the questionnaire. There was no difference between SG and CG in prioritizing healthy diets and correct dietary habits according to BFFQ (> 20 scores) (40,1% vs 49,57%; 75,4% vs 74,35% respectively $p < 0.05$). There was a difference between groups in consuming wild plants (SG vs CG; 74,33% vs 52,99%; $p > 0.05$). Most participants consumed mushrooms (75,8%) and raspberries (70,3%), mostly raw (85,8%) or as infusions (64,2%). Most consumed in SG were mushrooms (77,7%) and different berries (76,26%), and CG mushrooms (93,55%), raspberries 74,19% and mint (64,52%). Only a few participants consumed tree leaves (8,2%) and pinecones (8,7%) Most of them (85,8%) reported consuming wild plants several times a year or more.

Conclusion

Wild plant consumption is more popular with scouts than with other people. Predominantly consumed are mushrooms and berries and additionally mint in non-scouts. Scouts show significant wild plant intake.

Future efforts should focus on promoting wild plant consumption through education primarily amongst non-scouts.

POSTER SESSION

RECONSTRUCTION OF NEGLECTED RUPTURED PATELLAR TENDON USING HAMSTRING AUTOGRAFT

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Introduction

Rupture of the patellar tendon is a rare injury, usually occurring in patients under 40 years of age. The prognosis depends in large part on the interval between injury and repair. Immediate surgery over a 2-week period post injury is recommended. In this case, proximal retraction of the patella and extensor mechanism adhesions makes the treatment more difficult. We present a surgical technique with a figure-of-eight hamstring autograft for the reconstruction of the patellar tendon.

Aim

A 14-year-old patient sustained an injury to the left knee, leading to a diagnosis of medial patellar retinaculum tear, surgically repaired at another hospital with a suture anchor to the patella. 13 months post initial diagnosis, the patient was consulted at Kaunas clinics due to complaints of partial knee extension and high position of the patella. MRI confirmed chronic distal rupture of the patellar tendon. 16 months after primary diagnosis reconstruction was performed, during which scar tissue in the remnants of the patellar tendon was excised. The distal insertions of the semitendinosus and gracilis tendons were stripped while leaving the distal attachment intact.A Horizontal tunnel through tibial tuberosity was drilled and both tendons were passed to the lateral side. The tunnel was drilled horizontally through the patella; one of the tendons was passed from medial to lateral and another to the opposite direction forming a ‚figure of 8'. Repair was confirmed isometric before the ends of the tendons were fixed into the tibia. The native patellar tendon was additionally augmented with a suture tape using the Kessler suture technique and the ends of the suture were passed vertically through the patella and tied on the proximal pole.

Conclusion

After reconstruction 90° of flexion was gradually achieved at 6th week post surgery. at 6 month follow-up full ROM of the knee was achieved and extensor mechanism was fully restored with no extension lag.

NEARLY TWO DECADES OF SPECIALIZED EXPERIENCE IN HANDLING CASES OF BURNS IN CHILDREN

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Introduction

In public health and research, children's health is of utmost importance. We have seen ongoing changes in lifestyle, technology, and medicine over the last 20 years, which may have an impact on epidemiological patterns for a range of pediatric illnesses. Pediatric epidemiology of burn injuries is one of these important fields; it is a serious health concern that could have detrimental effects on children's physical and mental health.

Aim

The basic epidemiological features of children with burns who were hospitalized at the Department of Burns and Plastic Surgery Faculty Hospital Brno, Czech Republic, between 2005 and 2022 were the focus of this study.

Methods and Materials

We gathered and analyzed epidemiological information, including age, gender, etiology of burns, and location of the burned area.

Discussion

The study included 2604 children (1.8:1 male-to-female ratio, aged 0–17 years) with an average burn area of 6.18% TBSA. Notably, 14 children had burns exceeding 50% TBSA. Burns was most common at school (29 incidents) and at home (25 incidents). Saturdays had the highest burn rate (18.29%), followed by Sundays (15.02%), with January having the peak incidence (9.57%). Scalding (77.52% in 2018) was the predominant cause. ICU stay averaged 9.89 days, hospital stay was 6.88 days, and 66% underwent skin grafting. Unfortunately, one child (0.038%) died during the reporting period.

Conclusion

In our report, we pinpoint essential facts about burns in hospitalized children, aligning with the study's goals. Preventing most burn injuries is possible. Additionally, studies and mortality data provide opportunities to boost awareness and enhance precautionary measures.

POSTER SESSION

NEW ONSET OF PERIPHERAL PAINFUL DIABETIC NEUROPATHY IN 43 YEAR OLD PATIENT WITH T1DM

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Introduction

43 year old male with a over 30 year history of T1DM admitted to the hospital with newly onset of peripheral painful diabetic neuropathy for intravenous admission of alpha-lipoic acid. Medical history of the patient contains proliferative diabetic retinopathy and photocoagulation of the both eyes, diabetic nephropathy, abdominal obesity, hyperlipidemia treated with statin and vitamin D deficiency. Additionally he is treated for arterial hypertension, with combo-pill (perindopril, indapamide, amlodipine).

Aim

Due to diabetic neuropathy and lack of the sense of pain, temperature and vibration, architecture of the foot was changed. For this reason he developed ulceration of the right foot with bacterial contamination, which resulted in foot phlegmon. He underwent tissue debridement and antibiotic therapy according to culture, which was unsuccessful. The patient developed sepsis and necrosis of II, III and IV toes of right foot, which were amputated.

During therapy he didn't obtain good metabolic control of diabetes, his HbA1c was 10,6%. He was introduced with aggressive insulin therapy in the first three days with intravenous infusion. After that, the patient developed painful diabetic neuropathy, probably due to "insulin neuritis". For this reason, the patient was introduced with alpha-lipoic acid, vitamin B1 and pregabalin therapy. Now, he is in a wheelchair in order to off-load the right foot and he was switched into functional intensive insulin therapy with a personal insulin pump. The patient is also implanted with continuous glucose monitoring with Dexcome 6. He is planned to be switched into CGM/insulin pump loop.

Conclusion

In patients with diabetes with hyperglycemia over 500 mg/dl lowering the glycemia should be careful and slow to avoid the risk of developing "insulin neuritis" due to fast osmolality changes, which may result in painful diabetic neuropathy.

ANALYSIS OF THE INCIDENCE, CONTRIBUTING FACTORS, AND CHANGING TRENDS OF PEDIATRIC HAND BURNS

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Introduction

Pediatric hand burns pose a significant public health concern due to their potential for long-term physical and psychological consequences. Understanding the epidemiological landscape of these injuries is crucial for developing targeted prevention strategies and improving the overall well-being of affected children. This retrospective study aims to provide a comprehensive analysis of pediatric hand burns, focusing on incidence rates, causative factors, and outcomes.

Aim

The aim of the study on pediatric hand burns is to understand their epidemiology, causes, clinical presentation, treatment outcomes, and factors influencing them. This research aims to improve the care and outcomes for children affected by hand burns by informing clinical practice and preventive measures.

Methods and Materials

The retrospective analysis included hand burn patients under the age of 18 years, who were hospitalised in the Department of Burns and Plastic Surgery Faculty Hospital Brno, Czech Republic from January 1, 2005, to December 31, 2022.

Discussion

An analysis of pediatric hand burns from 2604 patients revealed that 22.6% suffered from hand burns, primarily due to accidents (99.5%). Most incidents occurred at home (77.2%), with hot liquids (46.1%) and contact burns (25.2%) being common causes. Hospitalization durations varied, with 7-13 days being the most frequent (37.8%). Prompt first aid was provided in 97.2% of cases, often using water (92.7%).

Conclusion

In conclusion, this epidemiological retrospective study provides valuable insights into the landscape of hand burns in pediatric patients over the studied 18-year period. The findings highlight the significance of understanding incidence rates, causative factors, and outcomes to enhance targeted prevention strategies.

POSTER SESSION

A CASE REPORT OF MOTOR NEURON DISEASE IN AN ELDERLY FEMALE PATIENT

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Introduction

Motor neuron disease (MND) is an uncommon illness that mainly impacts individuals in their late 50s to early 60s, with a higher prevalence in men. It consists of a group of rapidly advancing, nerve-damaging disorders that specifically affect motor nerves. Early manifestations of the disorder usually entail muscle weakness, hand tremors, as well as fasciculations, and changes in speech and swallowing abilities. This case report unravels the diagnostic pathway of an individual affected by MND, providing a comprehensive overview of the diagnostic process and its key findings.

Aim

In 2022, a 78-year-old woman experienced intensifying hand and voice tremors, speech difficulties, and increased saliva production. She reported dealing with these amplified issues for half of the year, although her medical records show signs of declining hand muscle strength and worsened speech as far back as 2020. Previous diagnoses were made based on the mentioned symptoms: essential tremors, carpal tunnel syndrome, and compression of nerve roots and plexuses in intervertebral discs. Upon examination in 2022, it was determined that she has spastic dysarthria and unstable postural tremors in her hands and head, thus electroneuromyography (ENMG) was performed, and results indicated axonopathy affecting the motor nerves of her arms and legs, with predominant lesions of the lower extremities. Needle EMG revealed widespread spontaneous activity in all limbs and the tongue. Doctors concluded that the data are typical of extensive motoneuron damage and diagnoses of MND was confirmed.

Conclusion

Diagnosing MND is challenging because wide variations of symptoms in the early stages can complicate assessment and lead to misdiagnosis. Hence, a thorough approach is required to identify MND accurately. Currently, there is no cure for motor neuron disease, treatment focuses on symptom management and enhancing quality of life. The prognosis for MND is bleak, typically offering a life expectancy of 2-5 years post-diagnosis, however, notable leaps in the field of medicine provide hope for MND patients.

DEMOGRAPHIC PREDICTORS OF READINESS FOR A ROMANTIC RELATIONSHIP WITH INDIVIDUALS SUFFERING FROM CHRONIC ILLNESSES

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Introduction

The presence of a chronic illness represents a significant obstacle to establishing intimate relationships, not only due to physical limitations but also because of various social barriers within the societal context. Researchers agree that cultivating appropriate attitudes toward individuals with chronic illnesses requires experiential learning through interactions with them. Surprisingly, deepening relationships and increasing intimacy may not necessarily shorten the social distance towards individuals with disabilities, including chronic illnesses. This phenomenon is observed primarily during transient, short-term interactions, prompting consideration of factors influencing readiness to enter a relationship with someone with a chronic illness beyond personal experience.Aim

The aim of the study was to examine demographic predictors of readiness for engaging in a romantic relationship with an individual with a chronic illness (RERRICI). It was hypothesized that women and singles would exhibit higher levels of RERRICI, and additionally, that age and the level of education would be positively correlated with RERRICI.

Methods and Materials

The study was conducted on a sample of 113 individuals, including 55 females and 54 males, with 4 participants not declaring their gender. Participants were queried about gender, age, the level of education, place of origin, and relationship status. RERRICI was assessed using a modified version of the Acceptance of Illness Scale (AIS).

Discussion

The results showed no evidence of a relationship between gender and RERRICI or between age and RERRICI. Contrary to the expectations, the level of education was negatively correlated with RERRICI. As for relationship status, singles exhibited higher levels of RERRICI compared to individuals currently in a romantic relationship.

Conclusion

These findings may contribute to the development of modern psychotherapeutic methods for individuals with chronic illnesses and their close relationships.

PSYCHOLOGY AND PSYCHIATRY

BIG FIVE PERSONALITY TRAITS, ATTACHMENT AND PROBLEMATIC PORNOGRAPHY CONSUMPTION: THE MODERATING ROLE OF GENDER

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Introduction

Pornography usage is a widespread phenomenon but pornography watched compulsively can lead to mental health problems conceptualized within behavioral addiction framework. Previous studies showed that problematic pornography consumption (PPC) is related to specific personality traits and attachment.

Aim

The present study examined the links between personality traits and attachment styles to PPC separately for women and men.

Methods and Materials

The sample consisted of 273 men and 318 women from Poland. Problematic Pornography Consumption Scale was used to measure PPC, the Polish adaptation of the Ten-Item Personality Inventory was applied to assess the five-factor personality model and the short version of the Polish adaptation of the Experience in Close Relationships-Revised scale was used to measure adult attachment.

Discussion

Correlation coefficients for expected relationships between Big-Five personality traits and PPC were significant only among men. According to regression analysis, emotional stability was related to PPC only in men, and attachment anxiety was related to PPC in both genders. Lack of the link between expected big-five personality traits among women hints at the possibility that women with PPC do not exhibit personality profiles distinctive for addiction; meanwhile the “addictive personality” profile was visible in the sample of men. In men, the link between attachment anxiety and PPC was more pronounced than in women, highlighting the moderating influence of gender. Possible explanation is that individuals with an anxious attachment style may seek non-committal sexual encounters to mitigate separation and abandonment fears.

Conclusion

This research emphasizes the critical role of gender differences in PPC, advocating for interventions and support tailored to the specific needs of both genders.

PROBLEMATIC OVER-STUDYING, BIG FIVE PERSONALITY, AND MUSIC PERFORMANCE ANXIETY: ASSOCIATIONS WITH WELL-BEING AND ACADEMIC PERFORMANCE

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Introduction

Problematic over-studying is a compulsive and pathological overinvolvement in studying leading to harm and considerable functional impairments. It is conceptualized as “study addiction”, a precursor to work addiction. It has been investigated within the addictive behaviors framework in general populations of students for over a decade. A previous study analyzed the problem among young musicians as a particularly vulnerable group. It found some important differences in potential personality risk factors among music academy students compared to general populations of students and showed an important role of social anxiety.

Aim

The study aimed to validate the previous findings concerning associations among Big Five personality, social anxiety, study addiction and well-being, and academic performance in a separate larger sample and extend them by investigating the role of MPA as a crucial variable in the psychology of music.

Methods and Materials

The study was conducted among 213 students of music academies. Valid and reliable measures of study addiction, MPA, Big Five personality and well-being were used.

Discussion

The results showed that MPA played a similar role as social anxiety in terms of being a predictor, mediator, and moderator of the main replicated effects supporting the hypothesized mechanisms regulating study addiction. However, extraversion was not associated with study addiction in multiple hierarchical regression analysis, but conscientiousness and neuroticism were. Study addiction was associated with indicators of decreased well-being, above and beyond MPA, and personality.

Conclusion

These results show that MPA plays an analogous role to social anxiety and that the role of Big Five personality in study addiction among young musicians requires further investigation due to inconsistent findings.

PSYCHOLOGY AND PSYCHIATRY

DECIPHERING THE SOCIOLOGICAL PUZZLE: PROFESSIONAL IDENTITY FORMATION IN MEDICOS

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Introduction

It is believed that, to quote Robert K. Merton – "medical education should shape the novice into the effective practitioner of medicine, to give him the best available knowledge and skills and to provide him with a professional identity so that he comes to think, act and feel like a physician", but this critical area of Professional Identity Formation is more often than not neglected by medical students, training to become practicing professionals. The incongruence of their expectations and perceptions of medical education forces them to deal with a dialectic tension when shifting their role from young lay men and women to students of medicine to become professionals. Predictably, sometimes the consequences can be gruesome.

Aim

Herein, we report a case study of medical students and graduates diving into their compound world where they are going through a transitive period in their professional career and explore the challenges that they face and the strategies and factors in force which constructs their sense and patterns of professional identity

Conclusion

The concept of Professional Identity Formation is quite a complex matter and cannot be addressed with pinpoint accuracy. It is therefore important to broaden the understanding of this sociological issue and develop an integrational web, examining ways that can blend different aspects of two worlds of a medical student to make this transition smoother and dynamic.

EXPERIMENTAL IMPACT: FAVORITE MUSIC DURING LEARNING ON MEMORY RETENTION WITH QEEG

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Introduction

Expanding on the provided theoretical background, there's growing recognition of background music's profound impact on cognitive processes, particularly in learning and memory retention within cognitive psychology. Existing literature emphasizes theta activity's predictive role in learning outcomes, and ongoing research highlights auditory neurofeedback's potential in enhancing cognitive performance.

Aim

This study delves into the intricate relationship between music and cognition by investigating the effects of listening to favorite music on theta wave activity, memory consolidation, mood, and extraversion during learning tasks. By elucidating these dynamics, the research aims to contribute to the broader comprehension of how music influences cognitive functioning, potentially informing educational practices and individualized learning strategies.

Methods and Materials

The control group underwent mood assessment and QEEG diagnosis before engaging in learning tasks without music. The experimental group, on the first day, included listening to favorite music during learning tasks. On the second day, the experimental group listened to music before learning tasks. Both groups completed mood assessment and learning tasks including the Rey figure test, AVLT, and reading comprehension with IDS-2.

Discussion

The study found that the experimental group, which listened to favorite music during learning, did not show significant differences in theta wave amplitude or short- and long-term memory compared to the control group. Both groups exhibited similar results in mood assessments and cognitive tasks.

Conclusion

These findings suggest that while music may influence mood and concentration, it may not necessarily translate into improved memory processes. These conclusions highlight the need for further research into the various aspects of music's impact on cognitive functions and the potential for individualized and effective use of music in educational processes.

PSYCHOLOGY AND PSYCHIATRY

ANALYZING THE CHRONOTYPE AND ITS PREDICTIVE FACTORS IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA

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Introduction

Obstructive sleep apnea (OSA) is a chronic condition characterized by recurrent pauses in breathing during the night. Chronotype is considered an individual's preference toward a particular time of the day for optimal functioning.

Aim

The study aimed to evaluate chronotype aspects such as eveningness and its distinctiveness and to assess their predictive factors.

Methods and Materials

The study included 332 participants, who underwent polysomnography examination (PSG) divided into 2 groups: the control group (n = 86) and the OSA group (n = 246). Participants filled out the following questionnaires: Chronotype Questionnaire (CQ), evaluating eveningness- morningness (EM) and distinctiveness (DI) of chronotype, Pittsburgh Sleep Quality Index (PSQI), Beck Depression Inventory (BDI), Athens Insomnia Scale (AIS), and Epworth Sleepiness Scale (ESS).

Discussion

Out of the questionnaires, only the EM scale differed between the control and OSA groups ($p = 0.001$), with OSA participants achieving higher scores (preference for eveningness). In multivariable linear regression in the OSA group, for eveningness, the model explained 23.7% of the variance ($p < 0.001$) and included age, arousal index, minimum oxygen saturation, AIS score, BDI score, and the only significant variable ESS score ($p = 0.033$), while for the greater distinctiveness of chronotype obtained model accounted for 36.8% of the variance ($p < 0.001$) and comprised of AIS, BDI, PSQI, and ESS score (all $p > 0.05$).

Conclusion

Eveningness and greater distinctiveness of chronotype are rather associated with subjective sleep parameters (questionnaire results) than objective ones (PSG results), with no direct association between OSA severity and chronotype aspects.

TO AMPUTATE, OR NOT TO AMPUTATE: THE ETHICAL IMPLICATIONS OF TREATING BODY INTEGRITY DYSPHORIA

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Introduction

Body Integrity Dysphoria (BID) or previously referred to as Body Identity Integrity Disorder is a rare condition of different origins that can be considered on neurological, psychiatric, and psychological grounds. People who suffer from BID feel incomplete and unsatisfied with their actual body and feel a strong desire to amputate a healthy limb or become paralyzed.

Methods and Materials

This work focuses on analysis of Body Integrity Dysmorphia or Body Identity Integrity Disorder varying treatment methods and outcomes proposed in the scientific literature published in years 1997-2023 on PubMed, WoS, Google Scholar and Scopus.

Discussion

Treatment methods vary in outcomes, but from the perspective of BID individuals the most effective is amputation. That sparks fierce debate. Many surgeons turn down such requests because of many reasons e.g., jurisdiction or interpretation of medical ethics. Assessment of all the possible treatment options is therefore essential for arriving at conclusions. Nevertheless, the main problem remains unsolved – some individuals might perform self-amputation, which puts the individual's life at risk.

Conclusion

Clinicians faced with a patient asking for the amputation of a healthy limb should make a complex diagnostic assessment and case evaluation, as well as take into consideration the risks and benefits of amputation and other less effective ways of treatment. It is crucial to determine whether those patients should be allowed to undergo such surgery or is it entirely against the most remarkable rule of the Hippocratic oath "primum non nocere". It is recommended for medical professionals to publish the results of treatment trials to deepen understanding of such conditions and allow growth in the knowledge of BID. Shifting focus to, especially, incorporating new technologies or noninvasive methods for treatment may be the key.

PSYCHOLOGY AND PSYCHIATRY

PSYCHOLOGICAL WELFARE AND BURNOUT OF MEDICAL STUDENTS AFTER COVID-19 PANDEMIC LOCKDOWN IN POLAND

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Introduction

Medical educational opportunities are limited in number, and the studies are recognized as some of the most academically and psychologically demanding courses. Students often show features of diminished psychological welfare, depressive symptoms, anxiety, and educational burnout.

Aim

In this study, we intended to examine the psychological welfare, burnout, and stress-related coping mechanisms of medical students at the Medical University of Gdańsk, Gdańsk, Poland.

Methods and Materials

Medical students completed an online survey assessing general mental health and stress coping mechanisms. We used copies of the PHQ 9; CAGE questionnaire; and the OLBI, to quantify depressive-symptoms, screen for problematic alcohol drinking, and assess the risk of burnout.

Discussion

The mean total OLBI score ± standard deviation was 44.6 ± 7.3 (N = 700), with 91.1% of participants scoring ≥ 35 points. Female students had significantly higher total and exhaustion domain OLBI scores than their male counterparts ($p < 0.05$). About 76% of all respondents reported high levels of studies-related stress and 44% of survey participants agreed/strongly agreed that they considered dropping out of university courses due to the stress. The suicidal/self-harm ideations were found in 33.6% of students. Most students (64.4%) were screened positively for moderate-to-severe depressive symptoms, and 19% of them for risky alcohol use. Students with OLBI scores ≥ 35 achieved notably higher PHQ-9 and CAGE results.

Conclusion

Medical students are a vulnerable group at risk of developing mental health problems. A great number of survey participants screened positively for the presence of depressive symptoms, risky alcohol use, and burnout. The PHQ-9, and CAGE results, were significant predictors of OLBI outcomes. The improvement of COVID-19 pandemic-related social isolation restrictions did not produce a marked improvement in somatic/mental health-related quantifiers as compared to the time of strict social restrictions.

LGBTQ+ AND HETEROSEXUAL WOMEN'S LIFESTYLE HABITS: ARE THE EXISTING STEREOTYPES TRUE?

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Introduction

In nowadays society there are still stereotypes regarding LGBTQ+ community and its members' certain lifestyle habits. These theories may further stigmatize the members of LGBTQ+ community as well as worsen the accessibility of health care system for this community.

Aim

The aim of our study was to compare the lifestyle habits of LGBTQ+ and heterosexual Lithuanian women in order to test the validity of certain stereotypes regarding the lifestyle habits of LGBTQ+ community.

Methods and Materials

Data was collected by an online survey in Lithuanian language. Respondents were asked questions about their sexual identity and orientation, smoking, alcohol drinking and drug using habits, about regular physical activity and their body mass index. The data obtained was analyzed using MS Excel and IBM SPSS Statistics 28.0.

Results

In total, 256 respondents participated in this study: 127 LGBTQ+ and 129 heterosexual respondents, aged 18-45 y/o. The results revealed that there were statistically significantly more LGBTQ+ respondents smoking and using psychoactive substances in comparison with heterosexual respondents ($p = 0.0373$ and $p = 0.0013$, accordingly). However, smoking respondents of LGBTQ+ community smoked smaller numbers of cigarettes compared with heterosexual smoking respondents. Moreover, alcohol consumption did not differ significantly between these groups and there were no statistically significant differences found between LGBTQ+ and heterosexual respondents' answers regarding their regular physical activity as well as their BMI and usage of anabolic steroids.

Conclusion

Different lifestyle habits may be the risk factors for specific diseases. Therefore, by learning about the differences in lifestyle habits between LGBTQ+ and heterosexual women, specialists may better understand the health care needs and challenges of these population's groups and to provide the more individualized approach.

PUBLIC HEALTH AND EPIDEMIOLOGY

UNVEILING NICOTINE ADDICTION THROUGH DERMATOLOGICAL MANIFESTATIONS – A CASE REPORT

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Introduction

Nicotine addiction is a health problem with an impact on various aspects of the body. The skin, as the largest organ of the body, is particularly exposed to the harmful effects of substances associated with tobacco burning. Moreover, smoking tobacco also adverse effects mucous membranes, and teeth. However, if the patient does not provide information about his smoking history, despite attempts to talk, the most significant thing may be to look for one of nicotine stigmata during a physical examination.

Aim

A 71-year-old man was admitted to the dermatology department with a long-term history of many diseases, including obstructive pulmonary disease, type II diabetes, prostatic hypertrophy, residual schizophrenia, vascular brain damage and cortical-subcortical atrophy of the central nervous system. The reason for admission was scabies incognito – erythematous-papular lesions with erosions and crusts, accompanied by severe itching.

During the medical interview, the patient admitted to have over 114 pack-years of smoking, but currently does not smoke cigarettes. He reported sun exposure in his youth. During a dermatological examination, a number of skin lesions were noticed, including symptoms typical of nicotine addiction, such as yellowish discoloration of the hair and mustache. Additionally, during the physical examination, the presence of Favre-Racouchot Syndrome was identified – the occurrence of open comedones, skin cysts and solar elastosis.

Conclusion

The effects of smoking cigarettes may manifest themselves in a variety of dermatological changes, from erythematous and papular lesions to pigmentation disorders and faster skin aging. Therefore, knowing the stigmas of nicotine addiction can be extremely useful, especially when the patient denies smoking. Detecting such symptoms during a physical examination may open up a conversation about smoking, which may prompt the patient to admit his addiction and take steps to quit.

SELF-REPORTED AND PHYSICIAN-CONFIRMED ALLERGY IN LITHUANIAN WOMEN POPULATION

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Introduction

In the last century, the prevalence of allergies has grown rapidly, causing significant impacts on individuals' comfort and health. In women, allergic reactions can be influenced by physiological factors, such as hormones or microbiome composition.

Aim

This study aimed to investigate the prevalence and types of self-diagnosed or physician-diagnosed allergies, as well as to identify the common allergens triggering allergic reactions among the participants.

Methods and Materials

An anonymous survey was conducted inviting all adult women from Lithuania to participate. 870 women responded to the questionnaire, providing insights into self-diagnosed allergies. Additionally, 183 of the participating women were further questioned about physician diagnosed allergies. The median age of respondents was 24±10 years old. The data obtained was analyzed using MS Excel.

Discussion

Out of 870 women, 532 (61,15%) had self-diagnosed allergies. Additionally, 105 (12,07%) respondents were uncertain about their allergy status. Of all women who reported having allergies, 335 (62,97%) reported allergy to inhalant allergens, 176 (33,08%) to food, 161 (30,26%) to insects, 99 (18,61%) to drugs, 37 (6,95%) to chemical substances. The most common inhalant allergen was pollen – 220 (65,67%) women reported being allergic to grass, tree, weed pollen. However, within women, who were questioned additionally, allergies were confirmed by a physician for only 96 (52,46%) respondents.

Conclusion

In conclusion, our study highlights allergy rates among adult Lithuanian women. Over half of respondents reported self-diagnosed allergies, which underscores the significant impact of allergens on individuals' lives. The findings reveal a diverse spectrum of allergens triggering reactions, with inhalant allergens, particularly pollen, emerging as the most prevalent. A notable proportion of women remain uncertain about their allergy status, suggesting a gap in allergy diagnosis. These insights underscore the importance of heightened awareness, diagnostic clarity, and targeted interventions to reduce the burden of allergies effectively.

PUBLIC HEALTH AND EPIDEMIOLOGY

ASSESSMENT OF THE PERCEPTION AND UTILIZATION OF TOBACCO HEATING SYSTEMS AMONG STUDENTS

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Introduction

Smoking shortens the men's life by 13.2 years and women's life by up to 14.5 years. Being medically aware of the health effects of smoking, many medical students give up smoking cigarettes, but often decide to use new tobacco products available on the market, such as tobacco heating systems.

Aim

The aim of the study was to assess the perception and use of electronic cigarettes and tobacco heaters by students, including their awareness and level of their nicotine addiction.

Methods and Materials

The survey covered a randomly selected group of 280 students. The Fagerstöm test was used to assess the level of their nicotine addiction. Data from the study were processed using the STATISTICA 12.0 statistical program.

Discussion

Research has shown that the field of study significantly influenced student's frequency of using emerging tobacco products. Despite their medical knowledge, 34% of medical students identify as smokers. Additionally, 48% of respondents believed that heat-not-burn systems are less harmful than traditional cigarettes, but only 4,2% felt they had undergone sufficient testing. Moreover, 18,5% of participants believed that the aerosol from heating systems contains only nicotine and minimal amounts of other substances. Notably, 66,6% of heat not-burn users reported experiencing adverse health effects. 24,2% of respondents supported promoting heating systems as an alternative to traditional cigarettes, but 68,6% expressed concerns that such promotion could encourage smoking among non-smokers.

Conclusion

The obtained results indicate the need to deploy the campaigns and legal regulations of heat-non-burn systems use and promotion, especially particularly among young individuals who may perceive them as a healthy alternative to traditional cigarettes. The relatively short observation period limits the ability to definitively determine whether the use of these devices correlates with decreased life expectancy or the onset of various diseases, including cancer.

WOMEN'S INFERTILITY AND ALLERGY: IS THERE A CONNECTION?

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Introduction

Infertility stands as a significant global public health concern, impacting millions of individuals worldwide. While some factors, such as hormones, are known contributors to women's infertility, recent research suggests a potential connection between allergic diseases and infertility.

Aim

The aim of the study was to identify the patterns and possible connections between allergy prevalence and infertility based on the analysis of women's responses from an online questionnaire.

Methods and Materials

An anonymous survey was conducted inviting all adult women to participate. Total of 870 women responded to the questionnaire, providing insights into self-diagnosed allergies and their prevalence in Lithuania. Additionally, 183 of the participating women were further questioned about physician-diagnosed allergies. The median age of respondents was 24 ± 10 years old. The data obtained was analyzed using MS Excel.

Discussion

Out of all 870 respondents, 53 (6,09%) were diagnosed with infertility by a specialist. Within the group of infertile women, 30 (56,9%) reported having allergies, 8 (15,09%) had not been tested, and 15 (28,3%) reported no allergies. Most infertile respondents reported allergy to food and inhalant allergens: 11 (36,67%) allergic respondents for each of these allergen groups. Less frequent sensitivity to chemical substances (7 (23,33%)), insects (5 (16,67%)), and drugs (3 (10%)) were reported. Among allergic infertile women, the most common inhalant allergens were grass, tree and weed pollen, affecting 23,33% of this subgroup.

Conclusion

The results highlighted a significant prevalence of allergies among infertile women, with food and inhalant allergens emerging as predominant triggers. This observation prompts further exploration of the connections between allergies and infertility, holding the potential to provide valuable insights. The findings from such investigations could contribute to a better understanding of association between allergies and infertility, consequently guiding future research and shaping treatment approaches for individuals grappling with both pathologies.

PUBLIC HEALTH AND EPIDEMIOLOGY

PECULIARITIES AND DIFFERENCES OF OBSTETRIC-GYNECOLOGICAL OUTPATIENT CARE FOR HETEROSEXUAL AND LGBTQ+ PATIENTS

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Introduction

Both heterosexual and LGBTQ+ individuals face gynecological issues, where a professional opinion from obstetrician-gynecologist (OBGYN) is crucial. In order to obtain a suitable advice it is important for LGBTQ+ members to be open about their sexual and gender identity. Unfortunately, most of LGBTQ+ members fear that the quality of care will be negatively affected if they disclose their sexuality or gender identity.

Aim

The aim of this study was to explore and compare the experiences of heterosexual and LGBTQ+ women visits to the OBGYN.

Methods and Materials

Data was collected by an online survey in Lithuanian language. Respondents were asked questions regarding the reasons and frequency of their visits as well as their personal experiences in the OBGYN office.

Discussion

In total, 256 respondents participated in this study: 127 LGBTQ+ and 129 heterosexual respondents, aged 18-45y/o. Of all, 225 respondents have ever visited an OBGYN: 114 (88.4%) heterosexual and 111 (87.4%) LGBTQ+ respondents. Only in 20 (18%) cases, LGBTQ+ respondents revealed to their OBGYN that they belonged to the LGBTQ+ community. Of those, 30% claimed that OBGYN started to treat them differently after finding out about their sexual or gender identity. 94,2% of patients from both surveyed groups claimed that when visiting a new OBGYN, he never enquired about their sexual and gender identity. 93(83.8%) of LGBTQ+ respondents have been asked by an OBGYN about having sex with a man without enquiring about their sexual identity. Only 2(1.8%) LGBTQ+ respondents have ever asked their OBGYN a question related to same-sex intimate relationships.

Conclusion

LGBTQ+ women may experience negative emotions at the OBGYN and feel unable to disclose their gender and sexual orientation due to OBGYN behaviour, fitted to heterosexual women. Embracing LGBTQ+ needs as well as writing and speaking in gender-neutral language is essential to improve the quality of healthcare services.

A RARE OCCURRENCE OF CATAMENIAL HEMOPTYSIS IN THORACIC ENDOMETRIOSIS

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Introduction

Thoracic endometriosis is a rare condition characterized by the presence of endometrial tissue in the chest cavity. It primarily affects younger women and frequently presents with non-specific symptoms. Uncommonly, it manifests with catamenial hemoptysis, described as recurrent respiratory bleeding coinciding with menstruation

Aim

A 29-year-old female patient experiencing catamenial hemoptysis was admitted to the Department of Thoracic Surgery. She was a non smoker with an office job and no significant comorbidities. She conceived twice, both after a year of attempts. The patient had been experiencing recurrent episodes of hemoptysis for four months on the first and second day of the menstrual cycle, along with concurrent pelvic and back pain. Episodes occurred approximately four to five times a day and totaled up to 100 mL of blood. A single episode of hemoptysis of 100 mL of blood was reported. The patient had been previously hospitalized twice in the Department of Pulmonology and treated with hormonal therapy, which yielded partial improvement. However, the cause of hemoptysis remained undetermined. After admission to the Department of Thoracic Surgery, she underwent two bronchoscopies, both without signs of pathology. The decision to perform a CT scan in the near-menstruation period was made. It showed no evolution of small-nodular lesions or other signs of pathology. She was discharged with a diagnosis of thoracic endometriosis. After referral to an endometriosis specialist, hormonal treatment with dienogest was implemented. The treatment was well-tolerated and resulted in symptom resolution. This confirmed the diagnosis of thoracic endometriosis.

Conclusion

This case underscores the difficulties in identifying thoracic endometriosis, particularly when presenting with catamenial hemoptysis. It presents that clinical history, catamenial symptoms and resolution of symptoms after implementing hormonal therapy can be sufficient for a thoracic endometriosis diagnosis, even without confirmation in CT imaging or bronchoscopy.

SURGERY – CASE REPORTS

COMPREHENSIVE SURGICAL MANAGEMENT OF SEVERE OPEN SKULL TRAUMA: CASE STUDY WITH OSTEOSYNTHESIS AND ENDOSCOPIC TECHNIQUES

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Introduction

This comprehensive abstract delves into a critical clinical case of severe open skull trauma involving a male patient. A diverse team of medical specialists, including neurologists, cardiologists, hematologists, toxicologists, neurosurgeons, trauma surgeons, therapists, infectious disease specialists, and ophthalmologists, collaborated extensively, underscoring the intricate nature of the patient's condition.

Aim

The collected data encompassed a spectrum of injuries, including bilateral subdural hematomas, subdural effusions, minor intracranial hemorrhages, pneumocephalus, multiple fragmented and comminuted fractures of the skull bones, bilateral fractures of the orbital floor, extensive and fragmented fractures of the facial and skull bones, bilateral fractures of the lower and upper jaws, bilateral fractures of the maxillary sinuses, bilateral fractures of the zygomatic arches, maxillary, frontal, ethmoid, and sphenoid sinus involvement. The extensive nature of these injuries prompted a meticulous six-hour surgical intervention involving osteosynthesis of fractured bones, resection, reconstruction, and fixation. Surgical techniques included fracture mobilization, correct positioning, and fixation with plates and screws. Additional procedures included endoscopic opening of the maxillary sinus, endoscopic ethmoidectomy, frontal sinus trepanation, and sphenoidotomy.

Discussion

The comprehensive surgical approach orchestrated through collaboration among various specialists proved successful in managing the intricate injuries. The patient underwent successful frontal sinus fracture reconstruction, repair of facial and skull fractures, and resolution of postoperative symptoms, resulting in satisfactory outcomes.

Conclusion

Drawing upon a decade of surgical and research experience, this structured approach serves as a paradigm for managing severe open skull trauma. The successful execution of these intricate procedures not only mitigated structural and functional consequences but also highlighted the evolving landscape of surgical methodologies in craniofacial trauma management. Continued postoperative care and vigilant follow-up are imperative, ensuring the sustained well-being of the patient and contributing to the evolving standards of comprehensive patient care.

A COMPREHENSIVE TREATMENT ALGORITHM FOR HIDRADENITIS SUPPURATIVA

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Introduction

Hidradenitis suppurativa (HS), also known as Verneuil's disease, is a chronic inflammatory skin condition characterized by lesions associated with hair follicles. It is described as a pyoderma of adnexal structures, located in predilection areas such as the axillae, breasts, inguinal, perianal, or gluteal regions. Nodules, fistulas, sinus tracts, abscesses with purulent or serosanguinous suppuration, or fibrotic tissue develop. The condition is not very common, with a prevalence of 1% in Europe. The exact etiology is unknown, although several predisposing factors are recognized, such as obesity, smoking, genetics, female gender, bacterial colonization, medications, autoimmune diseases and endocrine disorders. The correct and timely diagnosis of this disease, is often delayed due to the similarity of its clinical symptoms to other diseases.

Aim

We present a case of a 59-year-old woman who came to the Burn and Plastic Surgery Clinic of the Faculty Hospital Brno with characteristic chronic inflammatory skin lesions, including deeply seated nodules, abscesses and fibrotic tissue in the axillae, upper lateral quadrants of the breasts, inframammary folds, and both groins. The first signs of this chronic condition appeared in the patient in 2020, and the primary diagnosis was made at the dermatology department. The patient had been treated with antibiotic therapy for two years, with an unsatisfactory response. Consequently, a decision was made to initiate biological treatment with adalimumab, administered for eight months. Simultaneously, surgical treatment was recommended, involving wide excision of affected areas. It was done two years after the diagnosis was established, and a good aesthetic and functional outcome was reached.

Conclusion

This case illustrates the varied pharmacological and surgical interventions for hidradenitis suppurativa, showcasing their effectiveness and encapsulated within a comprehensive treatment algorithm.

SURGERY – CASE REPORTS

V-Y ADVANCEMENT FLAP IN BASAL CELL CARCINOMA RESECTION: CASE INSIGHTS AND CZECH SKIN CANCER EPIDEMIOLOGY

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Introduction

This case study focuses on a 70-year-old male with a history of basal cell carcinoma on the nose, admitted to the Burns and Plastic Surgery department at the University Hospital Brno. The patient underwent re-excision of the residual tumor and subsequent defect reconstruction.

Aim

The presented case involves the successful application of the V-Y Advancement Flap in the resection of facial basal cell carcinoma (BCC). Amid the discussion of the surgical technique, the epidemiological context illuminates the broader implications of skin cancer, emphasizing its increasing global prevalence. In the Czech Republic alone, non-melanoma skin cancer affected 192,267 individuals as of December 31, 2018, with a notable 3.5% rise from the previous year. The prevalence stood at 1,809 per 100,000 population, underscoring the urgency of effective management strategies. Gender-based disparities are highlighted, with a prevalence ratio of 0.9:1 for men and women in 2018. This context emphasizes the need for innovative approaches to skin cancer treatment, considering the distinct impact on different demographic groups. The discussion delves into the financial strain posed by skin cancer treatment, prompting consideration for preventive measures. Despite the high cost-effectiveness of skin cancer prevention, current funding remains insufficient. Shifting resources toward prevention could significantly benefit healthcare systems by reducing the burden of diseases lacking effective preventive strategies.

Conclusion

In light of the epidemiological challenges, the successful utilization of the V-Y Advancement Flap in this case takes on added significance. The technique's potential to minimize long-term scarring aligns with the broader goal of improving outcomes while addressing the increasing prevalence of skin cancer. The case discussion thus integrates clinical insights with a broader epidemiological perspective, fostering a comprehensive understanding of the challenges and opportunities in skin cancer management.

SIMULTANEOUS SURGICAL MANAGEMENT OF HEPATOCELLULAR CARCINOMA WITH INFERIOR VENA CAVA THROMBUS AND CORONARY ARTERY DISEASE

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Introduction

Hepatocellular carcinoma (HCC) is the most common primary liver cancer. The hepatic vein tumor thrombus (HVTT) extends to the inferior vena cava (VCI) in only 4 % of cases, indicating a higher mortality rate. The lack of therapeutic protocols often results in palliative care as the main option. Survival without invasive interventions is limited, ranging from a few days to a few months.

Aim

A 63-year-old patient was diagnosed with HCC measuring 13x16cm and underwent a percutaneous radioembolization before surgical treatment. A control CT scan showed a thrombus mass within VCI extending to the right atrium (RA) and a tumor measuring 10x11cm situated in the right lobe of the liver. Additionally, during the cardiac test the critical stenosis in the left anterior descending coronary artery was revealed.

According to the multidisciplinary council's decision the patient was qualified for simultaneous coronary artery bypass grafting and liver resection. The first stage of the operation was heart revascularization achieved by grafting the left internal thoracic artery to the anterior descending branch of the left coronary artery. The second stage was laparotomy with removal of the tumor thrombus from the VCI utilizing extracorporeal membrane oxygenation and right-sided hemihepatectomy. The procedure was uneventful. The patient was discharged in a stable condition and was treated with sorafenib. A few months later, two additional operations were needed, because of metastasis in adrenal glands and the remaining liver. The patient survived three years after diagnosis.

Conclusion

The rare combination of multiple methods has shown clear efficacy in treatment advanced HCC with HVTT. Surgical procedure is still recommended whenever possible and the presence of a thrombus should not be a contraindication. In such cases, collaboration with cardiothoracic surgeons is crucial, especially when a thrombus infiltrates into RA and patient suffers from coronary heart disease.

SURGERY – CASE REPORTS

MANAGEMENT OF POSTOPERATIVE SURGICAL SITE INFECTION FOLLOWING MASTECTOMY AND IMMEDIATE BREAST RECONSTRUCTION WITH IMPLANT

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Introduction

Implant-based breast reconstruction is currently the most popular method of immediate breast reconstruction. However, surgical site infection is also a common complication in the immediate postoperative period with incidence rates varying between 5% and 30% and can have negative impacts on patient safety, hospital resources and aesthetic surgical outcome.

Aim

A 46-year-old patient underwent a left breast mastectomy with immediate implant-based reconstruction. Postoperatively, ischemic skin changes occurred and were addressed a week later through wound revision and closure. Eighteen days post-surgery, the patient presented to the emergency department with left breast pain, redness, and fever. Breast examination revealed redness, tenderness, and fluctuation, along with elevated inflammatory markers in blood tests. Metronidazole and cefuroxime were initially prescribed, but as inflammatory markers continued to rise, antibiotic therapy was switched to tazocin. Ultrasound revealed a fluid collection around the implant, prompting ultrasound-guided puncture and culture collection, which identified oxacillin-sensitive S. aureus. Pus extracted after repeated puncture. Due to persistent redness in the operated area and the condition not improving, it was decided to remove the implant, and perform lavage and drainage. Postoperatively, inflammatory markers decreased, the patient's general condition improved, and antibiotic therapy was discontinued after a week. The patient was discharged for outpatient follow-up.

Discussion

Immediate breast reconstruction carries inherent risks, including surgical-site infection. Infections, often the primary cause of implant removal, pose a significant complication in breast cancer reconstruction. Factors such as diverse bacteria causing implant infections, biofilm formation, bacterial resistance, and prolonged infection development present challenges in effective treatment, frequently resulting in implant removal.

Conclusion

This case emphasizes the importance of vigilant postoperative monitoring and prompt intervention in patients undergoing mastectomy and immediate breast reconstruction, particularly when faced with signs of infection.

A MACHINE LEARNING MODEL FOR RISK ASSESSMENT OF STROKE IN CAROTID ENDARTERECTOMY

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Introduction

Accurate risk assessment for stroke in patients undergoing carotid endarterectomy (CE) is crucial for optimal clinical outcomes. Existing methods often lack the granularity needed for individualized risk evaluation.

Aim

To create a more precise, AI-driven tool employing fuzzy logic for assessing stroke risk in CE patients, facilitating individualized surgical planning.

Methods and Materials

The tool, developed in Python with Tkinter and scikit-fuzzy, integrates variables such as age, hypertension, genetic factors, diabetes, smoking status, cholesterol levels, cardiovascular history, gender, blood pressure, BMI, prior stroke, and medication usage. It utilizes fuzzy logic to manage the inherent uncertainties in these risk factors. The user-friendly GUI allows clinicians to input patient data, generating a personalized stroke risk profile.

Discussion

Preliminary testing in a simulated clinical environment indicated the tool's ability to categorize stroke risk effectively. The software aligns well with established clinical risk assessment models while offering enhanced specificity.

Conclusion

This software presents an advanced approach for stroke risk assessment in CE patients, potentially improving surgical decision-making. Further validation with extensive clinical data is necessary to confirm its effectiveness and adaptability in diverse patient settings.

SURGERY – ORIGINAL RESEARCH

PET/CT ROLE IN BREAST CANCER STAGING

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Introduction

Although nowadays diagnostics of breast cancer have improved, often it is discovered in advanced stages. PET/CT is a relatively recent diagnostic method in Latvia and may have some advantage regarding to CT imaging when it comes to detecting regional and distant metastasis.

Aim

To compare PET/CT and CT findings regarding regional and distant metastasis and to study PET/CT overall role in breast cancer metastasis diagnostics.

Methods and Materials

This retrospective study included 119 women aged 27-85 with diagnosis of breast cancer who were treated in Pauls Stradiņš Clinical University Hospital, Breast Unit, from 2016 to 2022 and did both PET/CT and CT imaging with a maximum of 2 months in between. Patients were divided into 3 groups based on when the imaging was done: before (51 patient), during (41 patient) or after-treatment (37 patients). Data was collected from medical records and ''Datamed'' database. Analysis was done with SPSS Statistics using Cohen's kappa method.

Discussion

Overall assessment of regional metastasis both in PET/CT and CT were not significantly different between the groups, measuring substantial agreement ($\kappa = 0.8$ both before and during-treatment, $\kappa = 0.7$ after-treatment, $p < 0.001$). Similarly, findings of distant metastasis in the during and after-treatment group showed substantial agreement (both $\kappa = 0.7$, $p < 0.001$). However, in the before-treatment group only weak to moderate agreement transpired ($\kappa = 0.5$, $p < 0.001$).

In before-treatment group 47% (24) of patients also had uncertain metastasis assessment, decreasing to 24% both in during and after treatment. During treatment a majority of patients had PET/CT revealing additional findings not observable in CT, whilst in before and after treatment majority had CT findings doubtful, but PET/CT denied them.

Conclusion

PET/CT and CT showed similar metastasis assessments, with only moderate agreement on distant metastasis in before-treatment group. More precise analysis would require a larger population and detailed examination of medical history to assert the accuracy difference of imaging methods.

EPIDEMIOLOGICAL PATTERNS AMONG ADULT BURN PATIENTS: A SEVEN-YEAR RETROSPECTIVE ANALYSIS (2016-2022)

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Introduction

Burn injuries pose momentous public health challenges globally. In the Czech Republic, on average 3% of burned patients require hospitalization. A clear understanding of their epidemiology is vital to guide the development of prevention and treatment approaches.

Aim

The aim was to analyze the epidemiology, clinical characteristics, and outcomes of burn injuries over the years from 2016 to 2022.

Methods and Materials

Data analysis in this retrospective study involved reviewing records from 1378 adult patients admitted to the Department of Burns and Plastic Surgery, University Hospital Brno.

Discussion

The gender distribution showed a higher number of males than females (males 66.91%, n = 922; females 33.09%, n = 456). The mean age was 47.54 years (IQR 32.25-61, range 18-97). The average BMI among the patients was 27.01 (IQR 22.91-29.89, range 15.41-57.24).

Full-thickness burn injuries were predominant, comprising 943 cases (68.43%). Inhalation injury was present in 59 (4.28%) of cases. The average TBSA was 7.11% (range 0-88, SD 8.98). The mean ABSI score was 5.24 (SD 1.53). Surgical intervention was required in 857 patients (62%), with 185 (13.4%) needing immediate surgery. The mean hospital stay was 16.64 days (IQR 7-22, range 1-154). ICU admission was required for 275 patients (19.96%) with a mean duration of 21.01 days (IQR 8-27, range 1-129). The most affected body part was the lower limb, with 667 patients (48.40%). Wound infection was observed in 1072 wounds (77.79%).

The highest number of burns occurred on Saturdays (17.74%), and the lowest frequency was observed on Tuesdays (12.12%). The leading etiologies of burn injuries were flame burns (42.96%), scalding by hot liquids (29.46%), and contact burns (10.38%). Most of the cases were accidental (98.40%).

Conclusion

This study summarizes the basic demographic parameters and characteristics of burn injuries, which may be beneficial for reducing their incidence and improving patient outcomes.

SURGERY – ORIGINAL RESEARCH

SHAPING THE FUTURE OF PEDIATRIC HEALTHCARE: VIRTUAL REALITY IN BURN CARE AND REHABILITATION

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Introduction

Numerous highly painful procedures are part of the treatment process and subsequent rehabilitation of burn patients. Virtual reality (VR) emerges as a promising tool that could help alleviate the pain.

Aim

This study aims to review the latest studies that evaluate the impact of incorporating virtual reality in the acute burn treatment process, as well as in post-burn rehabilitation, for both adult and pediatric populations.

Methods and Materials

PubMed database was screened up to July 2021 to identify randomized controlled trials (RCTs) and systematic reviews and meta analysis that cover the use of virtual reality in burn patients. For burn care one randomised clinical trial (total of 90 children aged 6-17 years, 50% girls, mean age 11,3) and two systematic reviews and meta-analysis (first one six studies with total of 241 pediatric patients and second one thirty studies with total 1293 patients) were included. For burn rehabilitation one randomised clinical trial (total of 22 pediatric patients, aged 9 to 16 years, 13 boys and 9 girls) and one systematic review and meta-analysis (sixteen studies with total of 535 patients) was included .

Discussion

These studies confirmed that the involvement of virtual reality into the process decreased total and maximal pain level during wound dressings and other procedures. It also decreased pain level during rehabilitation as well as time spent thinking about pain and also it's affective and cognitive components. Patients also achieved better joint range of motion but didn't achieve better pinch strength.

Conclusion

The scientific perspective on VR in the context of pediatric burns and rehabilitation underscores its transformative potential. VR proves to be a scientifically validated tool addressing both physical and psychological dimensions of pediatric burn care and rehabilitation. It provides better pain control and distraction for pediatric (as well as adult) patients.

PREVALENCE OF SARCOPENIA IN PATIENTS TREATED FOR CHRONIC LIMB ISCHEMIA

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Introduction

Sarcopenia is a condition characterized by loss of skeletal muscle mass and function. Although this disease mainly affects the elderly population, its development may be also related to chronic diseases such as advanced arteriosclerosis leading to chronic lower limb ischemia (CLLI). Handgrip strength, measured with a dynamometer, is a well-established indicator of overall muscle strength and functional capacity. In this study, it was used to investigate the possibility of sarcopenia in patients with CLLI.

Aim

The aim of the study was to investigate the incidence of sarcopenia defined as low handgrip strength in patients with CLLI.

Methods and Materials

This prospective study included 26 patients treated at the vascular surgery clinic, Gdańsk between December 2023 and January 2024. We analyzed a group of patients qualified for vascular procedures due to lower limb ischemia. Each patient's handgrip strength was measured using a dynamometer before the procedure. Patient's medical data were collected. Basic descriptive statistics was performed.

Discussion

Mean handgrip strength in our study group was 25.8 kg for the left hand and 27.6 kg for the right hand, while the median was 24 kg for the left hand and 30 kg for the right hand. According to the literature, sarcopenia is defined as the value of hand grip < 30 kg in men and < 20 kg in women. Based on this definition 56% of our population was sarcopenic (6/8 women were sarcopenic – 75%, 8/17 men were sarcopenic – 47%).

Conclusion

Handgrip strength assessment provided a simple, non-invasive, and cost-effective method for initial screening and monitoring of muscle health in CLLI patients. Handgrip strength testing should be implemented both in preoperative and postoperative contexts to evaluate physical potential of patients and drive rehabilitative activities toward the most impaired domains. Intervention studies are needed to determine whether strength training in PAD patients can prevent premature mortality.

SURGERY – ORIGINAL RESEARCH

AVERAGE PSOAS MUSCLE AREA AND DENSITY IN POPULATION OF PATIENTS TREATED FOR ABDOMINAL AORTIC ANEURYSM

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Introduction

Sarcopenia is a negative prognostic factor of survival. Psoas muscle area (PMA) and density (PMD) are useful tools for sarcopenia assessment. Studies have shown that sarcopenic patients if properly prehabilitated have improved postoperative survival. As AAA surgery is mostly an elective procedure, there's time to implement prehabilitation in sarcopenic individuals.

Aim

To assess the psoas muscle measurements in patients qualified for AAA surgery in our population.

Methods and Materials

This retrospective study included 162 patients qualified for elective open aortic repair (OAR) or endovascular aortic repair (EVAR) in Vascular Surgery Clinic, Gdańsk, Poland between January 1, 2020, and December 31, 2023. Clinical data were collected from the institutional database. Pre-operative computed tomography was used to measure the psoas muscle area (PMA) and density (PMD) at the third lumbar vertebra. The lean psoas muscle area was subsequently calculated (LPMA; area in cm2 multiplied by attenuation in Hounsfield Units).

Discussion

Evaluation of sarcopenia may be based on psoas muscle measurements, although have to be based on individual population-specific characteristics. This is a preliminary study aiming to assess the psoas muscle measurements which will be used to determine the prevalence of sarcopenia in patients qualified for AAA surgery in our population.

Conclusion

We were able to obtain a sufficient amount of data, for our population, which allows us to proceed with a follow-up study to establish cut-off values for our population and test the correlation between PMA, PMD, LPMA, and survival of patients treated for AAA.

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ISBN 978-83-67147-36-1