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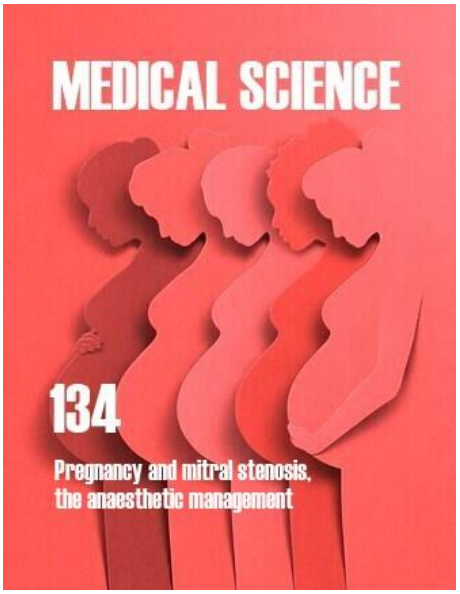
MEDICAL SCIENCE

About the Cover



Background: The most prevalent valvular heart condition linked to pregnancy is mitral stenosis. Pregnancy-related increases in cardiac output lead to a worsening of the patient's condition and an increase in New York Heart Association class (NYHA). *Purpose & Methods:* Regional anaesthesia has recently grown in acceptance as a secure alternative for caesarean delivery in all expectant mothers, even those with heart condition. *Results:* General anaesthesia is linked to an increase in pulmonary pressure in regard to laryngoscope and endotracheal intubation in addition to anesthesia-induced cardiac depression. The neuraxial blockade may reduce systemic vascular resistance and cardiac output. *Conclusion:* The outstanding anaesthetic care provided to a pregnant woman with rheumatic heart disease, multivalvular lesions, during epidural anaesthesia is described in this article, along with the positive outcomes for both the mother and the baby. (Ref: Movva H, Taksande K. Pregnancy and mitral stenosis, the anaesthetic management: A case report. Medical Science 2023; 27: e179ms2840).

Awareness, knowledge and attitude toward venous thromboembolism among Tabuk, Saudi Arabia: A cross-sectional study

Hyder Osman Mirghani, Abdulaziz Abdulkhaliq A Alwakeel, Sarah Ali H Abu Sabir, Sarah Majed A Alquayr, Ibrahim Ahmed J Albalawi, Omniyyah Mohammed S Alatawi, Raghad Faraih A Albalawi, Sultan Abdulrahman S Alamrani, Muruj Mohammed Hassan Bahar

Introduction: Although DVT is a significant source of morbidity and mortality, it can be avoided by avoiding risk factors and putting an emphasis on primary prevention. *Aims:* Our objective is to assess knowledge of VTE causes, risk factors, symptoms, prevention, and treatment choices among the population of Tabuk, Saudi Arabia. *Methodology:* A cross-sectional survey of the population of the Tabuk region was conducted, from January 2, 2023 to February 2, 2023. *Results:* Most of the participants were female, single, between the ages of 18 and 39 and most held bachelor's degrees; the majority of them had good expertise. The prevalence of venous thrombosis was low in the Tabuk region; there was no clear role for demographic factors at the level of consciousness in contrast to the medical history. *Conclusion:* The continuity of educational programs and awareness campaigns via the Internet, the media, health centers and public places.

Medical Science, 2023, 27, e171ms2928

The association between GERD patients' knowledge and development of complications in Makkah

Afnan Mousa Alhawsawi**,** Ola Abdullah Altwyjri, Ghaida Raja Allah Alsubhi, Linah Jamal Shaikh Omar, Abeer Shaker Elmoursy Ali, Talal Mohamed Karima, Wesam A. Nasif

Background: Gastroesophageal reflux disease (GERD) is the most common upper gastrointestinal condition. GERD patients report heartburn, regurgitation, chest pain, dysphasia, globus sensation and other symptoms and complications that influence their quality of life. We aimed to determine how patient awareness of disease aggravation affects GERD patients' quality of life in Makkah, Saudi Arabia. *Methods:* A descriptive cross-sectional study was conducted in Makkah 1197 participants completed the online questionnaire, 218 of whom had GERD and met the inclusion criteria for age, gender and ethnicity. Psychiatric patients, pregnant women, cardiovascular patients (angina, myocardial infarction) and asthmatics were excluded. *Results:* There were significant differences in knowledge scores based on occupational status ($p<0.001$). There was a significant difference among different levels of education with $p = 0.00$. The most common symptoms included a burning sensation followed by pain, nausea and regurgitation. The most frequently reported complications were gastric pain and dyspnea. *Conclusion:* Although GERD is a common disorder worldwide, our results showed less knowledge about GERD complications among those diagnosed with the disease. Awareness of complications is important for decreasing incidences and improving quality of life.

Medical Science, 2023, 27, e172ms2962

Knowledge, attitude and practice toward organ and blood donation among military population of Tabuk city, KSA

Waleed Turki Mobarek Alanazi, Bader Abdulrahman Husayyan Alanazi, Ahmed Hussain Ali Alshaikhi, Ahmed Yassin Alrefaei, Abdulaziz Nasser Saleh Albalawi, Omar Sabah Ayed Alzamhari, Qayed Fuhaiman Muslem Al-Balawi, Muteb Muflih Mohammed Alshahrani

Background: Organ donation is lifesaving procedure inpatients with end-stage organ failure. *Objective:* To evaluate the knowledge, attitudes and practice of the Military population in Tabuk, Saudi Arabia toward organ and blood donation. *Methodology:* This was a cross-sectional study conducted among the military population in Tabuk, Saudi Arabia. Participants completed a self-administrated questionnaire concerning blood and organ donation. *Results:* Among the participants, 58.3% had never donated blood, 13.9% had once, 11.1% twice and 1.9% many times. The following justifications for not donating blood were given; 19.4% of people express an unnamed dread of doing so, 15.7% of people are not aware of blood donation sites, 23.1% of people live in places remote from donation facilities, 34.3% do not have the free time and 19.4% of respondents worry about cleaning the equipment. Concerning the motivation; 96.3% of participants reported helping sick family or friends was their main motivation for giving blood. For 73.1% of the subjects, organ donation is important and 66.7% of the surveyed contributors think Islam supports organ transplantation but only 63% were aware of the Saudi Center for Organ donation. The majority (59.3%) of respondents want to donate their organs after death. *Conclusion:* The Saudi population had an uncertain understanding, attitude and practice of organ and blood donation. Future community-based studies should be carried out to ascertain what extra factors might affect someone's willingness to give blood and organs.

Medical Science, 2023, 27, e173ms2965

Parental knowledge of children's developmental milestones in Al-Ahsa, Saudi Arabia

Khalid Al Noaim, Laila Alalawi, Hussain Al Ghadeer, Abdulrahman Al Naim, Maryam Aljumah, Muneera Alabdulqader, Zainab Al Alawi, Sawsan Alherz

Background: Milestones refer to a child's typical development by a certain age. Children's development varies considerably in different countries; therefore, milestones are not fixed by specific ages and have a normal range of variation. This study aimed to determine parents' knowledge of children's developmental milestones in Al-Ahsa, Saudi Arabia. *Method:* A cross-sectional study was conducted between January and March 2022 using a pre-designed validated questionnaire among parents who were > 18 years, living in Al-Ahsa and had at least one child aged from birth to 14 years; 372 parents responded via local virtual and social media. *Result:* Of the parents, 71% and 62.9% correctly reported the age at which children typically start to crawl and walk, respectively.

Meanwhile, 9.7% of mothers had a good knowledge level regarding milestones compared to 3.2% of fathers (P = 0.048). Primary information sources were internet sites (81.4%), parents/relatives (81.4%) and pediatricians or general practitioners (68.3%). *Conclusion:* Parents had poor knowledge of children's developmental milestones. Healthcare providers should ensure that parents receive accurate information about child development by educating them during routine visits.

Medical Science, 2023, 27, e174ms2622

CASE REPORT

A case report of sporadic (tetra) phocomelia and unilateral isolated upper limb phocomelia: An antenatal ultrasonography of an extremely rare congenital anomaly

Asokan Aradhana Shanmughan, Abhi Amit Shah, Baskar A, Murugan G

Phocomelia is a severe and a rare form of limb defect in which the limbs are not formed completely. It affects the growth and development of musculoskeletal system leading to grossly underdeveloped or absent limb. It may be inherited as autosomal-dominant or recessive-disorder. We are presenting two cases of phocomelia, Case 1: A 28-year-old primigravida presented to our hospital with the history of irregular menstrual cycles for which she was advised ultrasound-pelvis which revealed a 21-week 6-days fetus. An antenatal-ultrasound was performed to rule of anatomical anomalies which showed symmetrical shortening of all four limbs with no other congenital anomalies. Because of her irregular cycles, the patient was unaware of her last-menstrual date and she reports spontaneous conception and also gives a history of first-degree consanguineous marriage. Due to the lack of significant history or any other associated symptoms, our case did not fit into any syndromic phocomelia and appears to be the result of sporadic phocomelia involving all four limbs or an isolated limb. Case 2: An ultrasonogram was done at 12 weeks 2 days gestational age in 24-year-old with obstetric history of Gravida-3 Para-1 Abortion-1 who presented to our hospital for regular first-trimester antenatal check-up. Ultrasound finding showed absent left radius and ulna with the deformed hand attached to the left humerus. Both patients had no family history of any congenital anomaly or infections during pregnancy, no history of any drug intake or exposure to fertilizers or pesticides. There is no relevant medical or surgical history.

Medical Science, 2023, 27, e175ms2693

Giant dumbbell shaped malignant peripheral nerve sheath tumour arising from sciatic nerve: A case report

Rahul Rajendran, Bhushan Jajoo, Raju Shinde, Tejashree Telkhade, Sameeksha Dubey

Malignant peripheral nerve sheath tumours in the sciatic nerve are sporadic and are often misdiagnosed. We herein report a case of a 22-year-old woman presenting with low back pain radiating to the right lower limb and right lower limb weakness. CT and MRI scan showed a large complex solid cystic lesion arising from S1 and S2 nerve roots extending from the right presacral space and traversing through the obturator foramina and emerging in the right gluteal region. Surgical resection with a bi-modal (Trans abdominal and gluteal) approach resulted in complete excision of the mass with an appreciable margin. The histopathological report showed a malignant peripheral nerve sheath tumour. Post tumour board discussion patient underwent adjuvant radiation. The patient has been under regular follow-up for six months and is disease-free.

Medical Science, 2023, 27, e176ms2810

A rare case of unusually large pseudocyst of pancreas treated unconventionally

Mrunmayee Sangamnerkar, Yuganshu Bisen, Raju K Shinde, Shubham Gupta, Ashna Mohanan, Taanvi Bhasin

The pancreatic pseudocyst is a collection of amylase-rich pancreatic secretions. It is the most prevalent pancreatic cystic lesion. Given that granulation tissue, not epithelium, lines the cyst, it is called a false cyst. The smaller sac is the most typical site for pseudocysts to form in both acute and chronic pancreatitis. In our case, the pseudocyst implausibly expanded to the left iliac fossa. Herein, we report a 32-year-old male patient with a history of chronic alcohol misuse dating back seven years. The pseudocyst measured 20 cm x 8.3 cm x 6.5 cm on CT imaging. The management of choice was surgical, where cystojejunostomy and jejunojejunostomy were performed to treat the patient.

Medical Science, 2023, 27, e177ms2860

Tuberculosis of spine: A rare presentation case report and treatment protocol

Gunjan Pandey, Ashna Mohanan, Sohael M Khan, Venkatesh Dasari, Ratnakar Ambade, Rameez Bukhari

Tuberculosis is endemic to India, still spinal tuberculosis accounts for less than 1% of total TB cases and less than 10% of extrapulmonary TB. This disease is rare and therefore can be easily misdiagnosed. The clinical presentation of Pott's spine is dependant of the stage of the disease. It is usually non-specific, insidious in onset and gradually progressive. Spinal tuberculosis treatment depends on the neuro-charting status of the patient. Presence of significant neurological deficit is an indication for surgery or else conservative treatment can be opted for. In this case report we present the case of a middle-aged man with symptoms mimicking prolapsed lumbar intervertebral disc with neurological deficit. Due to progressive neurology, the patient was managed with emergency surgery.

Medical Science, 2023, 27, e178ms2833

Pregnancy and mitral stenosis, the anaesthetic management: A case report

Haneesha Movva, Karuna Taksande

Background: The most prevalent valvular heart condition linked to pregnancy is mitral stenosis. Pregnancy-related increases in cardiac output lead to a worsening of the patient's condition and an increase in New York Heart Association class (NYHA). *Purpose & Methods:* Regional anaesthesia has recently grown in acceptance as a secure alternative for caesarean delivery in all expectant mothers, even those with heart condition. *Results:* General anaesthesia is linked to an increase in pulmonary pressure in regard to laryngoscope and endotracheal intubation in addition to anesthesia-induced cardiac depression. The neuraxial blockade may reduce systemic vascular resistance and cardiac output. *Conclusion:* The outstanding anaesthetic care provided to a pregnant woman with rheumatic heart disease, multivalvular lesions, during epidural anaesthesia is described in this article, along with the positive outcomes for both the mother and the baby.

Medical Science, 2023, 27, e179ms2840

An unusual case of cerebellar herniation in a neonate secondary to communicating hydrocephalus

Iyer Lavanya Ramakrishnan, Mahaveer Lakra, Bhavana Lakhkar, Nishant Raj, Shikha Kakkat, Anirudh Komareddy

The incidence of sepsis causing meningitis is a common finding seen in neonates. Meningitis, if not diagnosed early and intervened on time with adequate amount and duration of antibiotics can lead to catastrophic complications in the neonate, mainly leading to a communication hydrocephalus with mantle thinning, further leading to severe neuro morbidity. This case reports a neonate presenting on the 5th day of life with repeated episodes of vomiting but was treated symptomatically. The patient was further referred to us with incessant vomiting and depressed activity on day of life 24. The patient further had failure to thrive with significant weight loss since birth. General physical examination and routine examination revealed a case of communicating hydrocephalus secondary to sepsis causing meningitis which was left untreated. On further evaluation, neuroimaging revealed cerebellar tonsillar herniation. It is a common phenomenon to expect raised intracranial (ICP) leading to herniation in patients with a closed fontanelle. Here, we report a case of gross, communicating hydrocephalus causing cerebellar herniation in a paraneonate, which is not a well-known phenomenon in literature.

Medical Science, 2023, 27, e180ms2866

Rare case of Budd-Chiari Syndrome with recurrent thrombosis requiring stenting

Sushma Myadam, Revat Meshram, Amar Taksande

Budd-Chiari syndrome is a very rare disorder in paediatric age group, which is characterised by narrowing or obstruction of hepatic venous outflow. The obstruction might be thrombotic or non-thrombotic along the course of hepatic venules to junction of inferior vena cava to the right atrium, which leads to abdominal pain in right hypochondrium, hepatomegaly, ascites and portal hypertension. The cause of venous obstruction in children is mainly due to hypercoagulable state. The mean age of Budd-Chiari syndrome is 20-40 years, but here we can see that it occurs in paediatric age group, so good clinical suspicion is required along with investigation to confirm the diagnosis. Traditional approach to the treatment of Budd-Chiari syndrome is systemic thrombolysis or surgical Porto systemic shunt. Recently, successful treatment of Budd-Chiari syndrome is done by endovascular techniques, including angioplasty and stent placement. Here, in this case it shows a successful percutaneous recanalization of complete hepatic vein occlusion by angioplasty and stent placement.

Medical Science, 2023, 27, e181ms2838

REPORT

The effect of breast cancer awareness on young females, their knowledge and self-examination skills

Saad Ali S Aljohani, Rania Ezzat Mufti, Jori Osama Kareem Bakhsh, Faris Merghani A Elmahdi

Background: The most prevalent cancer in the world is breast cancer form of cancer in women and its incidence is rising in a number of nations. Breast self-examination is a basic and straightforward method for women to discover breast changes. ***Objective:*** The purpose of this research is to identify the workshops on breast cancer awareness effect on female students. Using a set of questionnaires developed for the study, breast cancer knowledge and breast self-examination skills of the participants were evaluated prior to and following the workshop. *Methodology:* A quasi-experimental study was carried out. Participants' understanding of breast cancer and prowess in performing breast self-examinations (BSE) were assessed prior to and following the workshop using a collection of surveys created especially for the study. *Results:* After the awareness workshop, participants' understanding of breast cancer increased substantially, according to the data. *Conclusion:* Based on the research's results, we believe that private and public schools in Al-Madina should provide regular workshops in regard to breast self-examination and breast cancer for female students for the purpose of expanding their understanding, confidence and ability to teach other females about early diagnosis of breast cancer.

Medical Science, 2023, 27, e182ms2964

ANALYSIS

The role of PRP as biological stimulator for cartilage regeneration: An experimental prospective study

Kuldeep Chhatbar, Sanjay Deshpande, Salahuddin Ahmed, Parth Shah, Shrut Vasavada

Introduction: Platelet-rich plasma (PRP) an autologous platelet concentration that contains a large quantity of growth factors is being used to treat an increasing number of articular cartilage injuries and degenerative cartilage lesions. The purpose of PRP is to stimulate cartilage regeneration biologically. *Materials and Methods:* Prospectively enrolled were twelve New Zealand rabbit knees that had received Surgical Phenol Solution-induced osteoarthritis and articular cartilage destruction, followed by platelet-rich plasma therapy-assisted cartilage regeneration. The research was carried out at the Datta Meghe Institute of Higher Education and Research in Sawangi's animal laboratory (Meghe). The study lasted three years. Following two weeks of surgical phenol solution damage on day 1, four groups underwent three treatments of autologous PRP therapy. Rabbits were examined by an open cartilage biopsy and histopathological analysis to determine whether cartilage regeneration had occurred at 3 months. *Discussion:* In terms of tissue morphology, matrix staining, cell distribution, integration of regenerated tissue with subchondral bone, tidemark formation, subchondral bone anomalies and mid/deep zone assessment, group C considerably outperformed groups A and B (P 0.05). Studies on osteoporosis and degenerative cartilaginous tissue have demonstrated that PRP can heal injured tissue. *Conclusion:* In the current experimental research, PRP's potential as a biological stimulator for cartilage regeneration was assessed. This research aimed to expand the role of PRP in improving wound healing outcomes, with a particular emphasis on its effectiveness for skin regeneration. This research will contribute to standardizing the use of PRP in cartilage healing for better results when applied to humans.

Medical Science, 2023, 27, e183ms2847

Perception of poor prognosis and psychological impact on the infertile couples who stop IVF therapy: Cross sectional scientific perspective

Rawan Ahmad Alhazmi, Mahdya Bukhari

The goal of this study is to examine the mental health of infertile men and women who's in-vitro-fertilization-(IVF) treatment halted or delayed due to the perception of poor prognosis. *Materials and methods:* Couples whose IVF procedures stopped or delayed because of the perception of poor prognosis sent an internet survey between June and August 2022. The Generalized-Anxiety-Disorder-7 (GAD-7) and Patient-Health Questionnaire-9 were used to measure the presence and severity of symptoms indicative of anxiety and/or depression (PHQ-9). Subjects with prior psychiatric illnesses were not allowed to participate. Informed consent and IRB approval (# 9690/3/KB11). *Results:* In all, 524 of the 646 patients who took the survey did so. Women were considerably more likely to experience anxiety and/or depressive symptoms, especially if they were older than 35 and had previously tried IVF. The incidence of these psychological symptoms was substantially correlated with the amount of time spent each day reading news about perception of poor prognosis, with evidence of a psychiatric condition and in females, with a diagnosis of endometriosis, uterine fibroids or low ovarian reserve. *Conclusions:* The perception of poor prognosis has had a profound psychological impact on the infertile couples who should have received IVF therapy. IVF clinics must to routinely provide these couples with sufficient psychological therapy to enhance mental wellness.

Medical Science, 2023, 27, e184ms2933

The effects of terbinafine on the lipid profile in humans and rabbits

Sami Alsuwaidan, Abdulmajeed Alajlan, Huda Alkreathy

Objectives: To investigate the effects of the azole antifungal agent, allylamine terbinafine, on the lipid profile of patients attending the dermatology clinics and any changes in serum creatinine associated. In order to compare the results between people and rabbits, we also want to investigate the lipid profile of normolipidemic rabbits and any changes in serum creatinine related to the use of these antifungal drugs in the experimental animals. *Methods:* In this study the effects of the antifungal drugs, terbinafine on the levels of serum lipids (triglycerides, cholesterol, high density lipoproteins and low-density lipoproteins) and serum creatinine were investigated in humans and rabbits. Blood samples were taken before and 1 week following drug treatment. Blood samples were analyzed using commercially available kits. Treatment of humans with terbinafine (250 mg/day) for one week had no significant effects on serum triglycerides, total cholesterol HDL-cholesterol or LDL-cholesterol levels. *Results:* Treatment with terbinafine for 1 week to humans produced no significant changes in serum creatinine. Treatment of rabbits with terbinafine (10 and 20 mg/kg/day) for six weeks produced significant reductions in serum triglycerides, total cholesterol and LDL-cholesterol levels. HDL-cholesterol levels, however, were not significantly changed. *Conclusion:* The present results demonstrate that terbinafine, an allylamine antifungal drug, has no significant effects on the serum lipids of humans. The results demonstrate that terbinafine has produced significant reductions in serum lipids (except HDL-cholesterol) in rabbits. This discrepancy in the results between rabbits and humans may be explained by differences in the enzyme squalene epoxidase (SE).

Medical Science, 2023, 27, e185ms2947

Assessing women's knowledge of the effects of vitamin D on the menstrual cycle and its associated symptoms

Bayan Fawaz Alzahrani, Amani Omar Safdar, Roua Fahad Alghamdi, Waad Ibrahim Barnawi, Waad Salem Almatrafi, Abeer Shaker Elmoursy Ali, Wesam A Nasif

Background: Vitamin D has numerous important roles. Recent research has demonstrated that vitamin D also reduces menstrual cycle-related symptoms, however comparatively few studies have been conducted purely on this topic. This study is to determine the level of awareness on the effects of vitamin D on the menstrual cycle among women in Makkah, Saudi Arabia. *Methods:* A cross-sectional survey was conducted from August 2022 to January 2023 in Makkah, Saudi Arabia. Using an online questionnaire, a random sample of 385 females aged ≥15 years were surveyed to obtain data. The data were analyzed with R Studio (version 4.1.1) and Fisher's exact test. In addition, Pearson's Chi-squared test was performed to compare participants who were aware of the

connection between vitamin D and the menstrual cycle to those who were not. *Results:* According to the study, 22.4% of respondents were aware of the relationship between vitamin D and menstruation cycle symptoms. Furthermore, 37.2% thought vitamin D alleviated the intensity of those symptoms. For 46.6% of the participants, the average age at the onset of puberty was 10-12 years and only (5.2%) reached puberty after the age of 15. The p-value for the connection between the age at which the subjects started puberty and the severity of menstrual cycle symptoms was 0.019. *Conclusion:* Women in Makkah city, Saudi Arabia, are not aware of the correlation between vitamin D and menstruation. In addition to expanding our understanding of this connection, we must strive to raise public awareness of it.

Medical Science, 2023, 27, e186ms2955

Comparison of depression and its associated risk factors between medical and non-medical students

Haytham Mahmoud, Khalid Aloufi, Abdullah A Alkurdi, Abdelrahman S Ghonimy, Abdulilah F Hamdan, Abdullah A Alsharif, Abdullah M Al-Otaibi, Abdulaziz M Alsaif, Lujain A Aldarsi, Mohammad Sanousi

Background: Psychiatric illnesses have abnormal thoughts, feelings and behaviors. According to the 2019 Global Burden of Disease research, mental diseases remain one of the top ten leading sources of burden throughout the world. Depression and anxiety are the most common mental health problems among college students. Depression is a mental illness marked by persistent sadness and loss of interest. Depression affects around 7-9% of college students and can present much earlier in life. *Aim:* The primary objective of our research is to compare depression among medical and non-medical students in Al-Madinah Al-Munawwara. The secondary objectives are to explore the risk factors associated with depression and whether being medical or non-medical can contribute to the difference in the risk factors. *Methods:* This was a cross-sectional study among 386 students, divided into medical background students (n=241) and non-medical students (n-145); all participants signed a consent form and offered a DASS (Depression, Anxiety, Stress, Scales) survey, including 21 questions to be filled out. *Results:* Across the overall sample of participants, most participants have reported normal DASS feelings regardless of their background, while anxiety was the highest among severe DASS reports, there was a significantly different association between DASS and GPA score, same as for the DASS outcomes between medical and non-medical; however, there were non-significant different either between gender, marital status and seniority level. *Conclusion:* In conclusion, depression among students was influenced by several factors, including educational background and academic level of students.

Medical Science, 2023, 27, e187ms2963

Protective effects of selenium nanoparticles against doxorubicin-induced testicular apoptosis in rats

Tourki A S Baokbah

The chemotherapeutic drug doxorubicin (Dox) is prescribed for cancer treatment. In addition to cancer cells, its cytotoxic effect affects healthy tissues with a high proliferation index, such as the testes. This study examined the potential of selenium nanoparticles (SeNPs) to attenuate Dox-induced testicular apoptosis. Thirty-two male albino rats were divided into four experimental groups (n=8): Control (group I), Dox (group II), SeNPs (group III) and Dox + SeNPs (group IV). For four weeks, Dox (3 mg/kg body weight) was administered intraperitoneally weekly, while SeNPs (0.5 mg/kg) were administered orally daily. After experimental treatments, testicular tissues were harvested for histological, immunohistochemical and molecular analyses. SeNPs treatment with Dox (group IV) markedly decreased testicular histological lesions induced by Dox (group II) and up-regulated (p<0.05) the defensive antioxidant nuclear factor erythroid 2–related factor 2 (Nrf2) and heme oxygenase-1 (HO-1) genes. SeNPs also decreased (p<0.05) the protein levels of pro-apoptotic P53, Bax, caspase-3 and increased (p<0.05) anti-apoptotic Bcl-2 genes in group IV compared to group II. To conclude, SeNPs alleviate Dox-induced testicular damage and apoptosis by improving the antioxidant capacity of spermatogenic cells and by inhibiting apoptosis.

Medical Science, 2023, 27, e188ms2975

Assessment of Awareness and Knowledge of Parents about Child Developmental Milestones in Al-Kharj City, Saudi Arabia

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Background: Child development is the process by which children's skill development is acquired over predictable times recognized as developmental milestones. A set of practical abilities or tasks that most children can execute by a certain age constitute a developmental milestone. Aims: To assess the parents' level of awareness regarding a child's developmental milestone, as well as the correlation between some demographic factors and the parents' knowledge about the child's development. *Methodology:* This study is based on cross-sectional study design. A sample of 406 parents was taken by convenient sampling technique among the community of Al-Kharj City, Saudi Arabia from October 2022. To measure parents' understanding of the developmental milestones of their children, a structured questionnaire was employed. *Results:* Saudi parents have adequate knowledge about child development in the areas of physical and language development as overall percentages of correct answers regarding language and physical development were 68% and 60%, respectively, while they have inadequate knowledge about cognitive and social development, with the overall percentages of correct answers being 45% and 49%, respectively. *Conclusion:* Cognitive, emotional and social growths are less well-known than language and physical development. The results of child development may be improved by strategies to raise awareness of developmental milestones and information on how to encourage optimal growth.

Medical Science, 2023, 27, e189ms2994

REPORT

Effect of copper-doped phosphate glass on dental resin material: In vitro study

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Background: This study aims to incorporate the oxide copper particles with phosphate-based glass fibers (PGF) into a poly methyl methacrylate (PMMA) resin material and investigate its antimicrobial effect. *Material and Methods:* (CuO)-containing PGF added to the PMMA resin (5, 10, 20 and 30 wt %). The antimicrobial activity was measured in the lab using the direct contact test against Klebsiella pneumonia, Staphylococcus aureus and Candida albicans. The agar diffusion test was used to measure the release of the (CuO). The results were analyzed and compared using a one-way analysis of variance, followed by the Student-Newman-Keuls-multiple-comparisons test. Differences were considered significant when the p-value was less than 0.05. *Results:* Compared to the control groups, a significant drop in *K. pneumonia*, *S. aureus*, and *C. albicans* was observed with all antimicrobial agent ratios. *Conclusion:* Adding (CuO)-containing PGF to PMMA dental resins provided a high antimicrobial effect against *K. pneumonia*, *S. aureus* bacterial and Candida species.

Medical Science, 2023, 27, e190ms2987

Endurance development using long running at school and its impact on children's memory

Georgiy Polevoy

The purpose of the study: In this study, we had to evaluate the impact of long-term running on the aerobic performance of school children and the impact of such indicators on children's memory. *Methods:* The study was conducted on the basis of School. In total, 120 children aged 9-10 years who studied in the third grade took part in the pedagogical experiment. During the study, a total of 34 physical education lessons were conducted in each class. Children from the control group were engaged in a standard (normal) physical education program. The students who were assigned to the experimental group were engaged in lessons according to the same program, but additionally performed a long jog for 6 minutes. We assessed the indicators of overall endurance using a 6-minute Cooper test; we assessed the level of memory development of children using the "Learn Words" test. *Results:* After the end of the experiment, the average data of school children from the control group became higher in the test for aerobic abilities by 6.9% and 7.3% ($p>0.05$). As for the experimental group, the data improved by 18.8% and 24.8% ($p<0.05$). The memory of children in the control group increased by 4.9% and 8.9% ($p>0.05$). In the experimental group, the indicators were higher - by 25.1% and 26.2% ($p<0.05$). *Conclusion:* According to the results of the study, it can be stated that long-distance running improves not only the aerobic capabilities of school children, but also the memory performance of children 9-10 years old.

Medical Science, 2023, 27, e191ms2989

CASE REPORT

An unusual presentation of epiphyseal chondroblastoma with posterior cruciate ligament tear: A case report

Ashna Mohanan, Yuganshu Bisen, Ratnakar Ambade, Mrunmayi Sangamnerkar, Aayushmann Singh, Gunjan Pandey, Taanvi Bhasin

Chondroblastoma is a sporadic, benign, locally aggressive, cartilaginous tumor that commonly affects the epi metaphyseal or epiphyses of the long bones. Chondroblastoma being extremely rare accounts for only one to two percent of all bone tumors. It usually occurs in skeletally immature patients, i.e., patients below 20 years old. Herein, we present a case of epiphyseal chondroblastoma of the right tibia with a posterior cruciate ligament tear in an 18-year-old female who presented with gradually progressive pain in the right knee for four years for which the patient underwent high-frequency radio-ablation.

Medical Science, 2023, 27, e192ms2821

Systemic amyloidosis misdiagnosed for Crohn's disease: A case report

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Background: Systemic amyloidosis is characterized by the steady buildup of highly structured fibrils made of autologous proteins in the organs that are affected. Our patient was often told she had Crohn's disease because she had stomach pain, diarrhea, weight loss, anemia and tiredness, but the treatment didn't work. As a result, numerous investigations and laboratory tests were performed, including gastroscopy and colonoscopy. *Conclusions:* Systemic intestinal amyloidosis can be misdiagnosed for Crohn's disease. When a similar clinical circumstance occurs, we hope that our report will remind our colleagues to be on the lookout for underlying disorders so that a quick diagnosis and successful treatment can be provided.

Medical Science, 2023, 27, e193ms2986

A rare case report of congenital pseudoarthrosis of tibia and fibula managed with dual modality of treatment: Ilizarov external fixator and plate osteosynthesis

Kuldeep Chhatbar, Sanjay Deshpande, Salahuddin Ahmed, Parth Shah, Shrut Vasavada

Congenital pseudoarthrosis is specific kind of non-union that is either present or developing at birth. Though its cause is unknown, it commonly affects people with neurofibromatosis. The most common sites of congenital pseudoarthrosis are the distal portion of

the tibia and commonly the fibula of the same leg. Approximately one in 250,000 live pregnancies results in congenital pseudarthrosis of the tibia. A 4-year-old child with a history of his right leg being shorter since, birth and being unable to use it for walking arrived at the orthopaedic outpatient clinic. The patient was managed with resection of the callus and pseudoarthrosis site and the tibia shaft was fixed with low contact dynamic compression locking device. The Ilizarov ring fixator was used and corticotomy was performed at the junction of the proximal and middle tibial shafts in order to lengthen the leg using the distraction osteogenesis principle. The goal of surgical therapy is to achieve pseudoarthrosis bone union while restoring limb alignment in order to lessen the risk of a subsequent fracture and keep bone development and function in the leg. It appears as CPT and is commonly accompanied with distinctive anterolateral bending. The Ilizarov procedure offers patients with CPT a therapeutic choice that is secure, useful and realistic. It can achieve a number of goals, including ankle stability, osteosynthesis and leg-length equality, when compared to alternative therapy methods. The fixation technique using a locking compression plate along with a bone graft improves the treatment of complicated congenital pseudarthrosis of the tibia.

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Pediatric Guillain-Barre Syndrome presenting with hyperreflexia and opsoclonus myoclonus

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Guillain-Barre Syndrome is an acute inflammatory polyneuropathy most commonly characterized by rapidly progressive, essentially symmetrical weakness with hyporeflexia or areflexia. The most common underlying subtypes of GB syndrome include Acute Inflammatory Demyelinating Polyneuropathy (AIDP), Acute Motor Axonal Neuropathy (AMAN) and Acute Motor and Sensory Axonal Neuropathy (AMSAN). Association of hyperreflexia with GBS is a rare entity and seen very rarely in Indian population. Here we describe a patient with AMSAN/Miller Fisher variant of GB syndrome who presented with exaggerated reflexes.

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Hydatid cyst masquerading as empyema leading to benign pulmonary neoplasm: A diagnostic challenge

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Hydatid cyst (HC) is a disease that occurs due to the parasite Echinococcus (EC) and the most typical infection in humans with hydatid disease is caused by the species granulosus. The most frequent site for cyst development is the liver, followed by the lung which is the second most common location. Therefore, this case report highlights a case of a 75-year-old male who presented with chief complaints of left-sided chest pain, dyspnoea, cough and mucoid expectoration since one month and was initially thought as empyema. A diagnostic assessment was performed involving computed tomography suggested possibility of a hydatid cyst. Serological tests positive for *Echinococcus granulosus*. The treatment parameters involved both surgical and medical approaches. Thoracotomy was performed along with the post-operative medical treatment that mainly involved antihelminthics (Albendazole) and patient recovered well with treatment. This report highlights that large hydatid cysts can be surgically removed with good outcomes and the importance of realizing that the disease is a burden to public health and is much neglected.

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Convalescence after physiotherapy intervention in a classic rare case of cerebellar bleed: A case report

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The cerebellum regulates posture, eye-hand coordination and limb movement. It may also have a role in non-motor functions including attention and cognition. The feedforward component of movement is impacted by inadequate predictive control, which is linked to the motor symptoms of cerebellar impairment. Cerebellar haemorrhage or hematoma is a type of intracranial haemorrhage (ICH). In the cerebellum or posterior fossa, bleeding accounts for 9% to 10% of all ICH cases. Nontraumatic cerebral haemorrhage can cause 9% to 27% of strokes globally, with an annual incidence of 12 to 31 per 100,000 people. The prevalence varies by race and age. In this case, we reported a 74-year-old male with a known history of hypertension came with a complaint of sudden onset 3 to 4 episodes of vomiting, dizziness, headache, slurred speech and weakness in all four limbs. On investigation, the patient was diagnosed with cerebellar haemorrhage. Managed operatively that is an evacuation of the brainstem haematoma. The patient was referred to the neuro physiotherapy department for further management. The Physiotherapy protocol was 6 weeks with increased muscle strength, range of motion (ROM) and normalized tone, to achieve normal reflexes and to develop balance & postural stability.

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RESEARCH

Lifestyle behaviours, dietary habits, physical activity and biochemical measurements in Saudi University students

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Introduction: Students worldwide are affected by lifestyle-related diseases. Hence, it was planned to study the association among dietary habits, physical activity, other lifestyle behaviours and biochemical measurements in Saudi university students. *Materials and Methods:* This cross-sectional study consisted of 747 (347 males and 400 females) 18 to 21-year-old healthy students enrolled in the introductory year. Anthropometric measurements, behavioural risk factors (physical activity, dietary pattern, sleep duration and screen time etc) and biochemical variations were assessed using a validated questionnaire. *Results:* Significant differences for

male vs. female were found for systolic blood pressure (SBP), diastolic blood pressure (DBP), body mass index (BMI), total cholesterol (TC), fasting blood glucose (FBG), intracellular water (ICW), extracellular water (ECW), skeletal muscle mass (SMM) and percent body fat (PBF). Other measurements showing significant variation were the sum of moderate-intensity activity (METs-min/week), sum of vigorous-intensity activity (METs-min/week), total screen time (hour/day), sleep duration (hour/day), fruit intake (day/week), French fries/potato chips intake (day/week), cake, donut or biscuits intake (day/week) and sweets or chocolates intake (day/week). *Conclusion:* The present study reveals significant impact of unhealthy diet (sweets and fries) and obesity status, low levels of physical activity and high screen time with less sleep duration among university students. Hence, promoting positive physical activity and healthier eating habits should be implemented throughout university education in Saudi Arabia.

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ANALYSIS

The place of epiduroscopy in the management of low back pain after lumbar surgery

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Objective: The present study aims to evaluate the outcomes of epiduroscopy used in the diagnosis and treatment of low back pain in patients having previously undergone lumbar surgery. *Materials and Methods:* In the present study, patients who presented to Neurosurgery Clinic at Kahramanmaraş Sütçü İmam University due to chronic low back and leg pain between December 31, 2017 and August 1, 2022, were retrospectively reviewed. Patients with persistent pain after having undergone spinal surgery for spinal stenosis and lumbar discopathy were included in the study. According to the VAS (Visula Analague Scale) pain was evaluated before the procedure, immediately after the procedure 0th, 15th, 30th, 90th days after the procedure. Functionel status was examined according to Oswestry Disability Index (ODI). The satisfaction of the patients was evaluated according to the Odom's criteria on the 90th day after the procedure. *Results:* Hundred and twenty-seven patients were included in the study. The patients were evaluated into two groups as patients with spinal stenosis (Group SS) and patients with lumbar disc herniation (Group LDH). The difference between the groups in age, after procedure 30th day ODI scores and post procedure 30th VAS scores was significant. Considering all the patients according to the Odom's criteria, 87 patients (62.7%) rated their satisfaction as excellent or good. *Conclusion:* In the management of persistent low back pain after spinal surgery, epiduroscopy offers a strong alternative to repeat surgery due to the fact that it is a less invasive procedure and it provides good outcomes in terms of patient satisfaction.

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Improving the functional capabilities of the body of children with respiratory diseases

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Background: It is important to treat diseases of the respiratory system not only with medication, but also with the help of physical rehabilitation. *The purpose of the study:* Improving the functional efficiency of the body of primary school-age children with respiratory diseases. *Study design:* Pedagogical experiment. *Research methods:* Research was conducted from February 1 to March 31, 2023 on the basis of the Vyatka Kinesitherapy Center in the hall of therapeutic physical culture, Kirov (Russia). 48 school children aged 10-11 took part in the study. Students of experimental group additionally used physical exercises for the development of functional capabilities 3 times a week. Overall endurance was determined by a 6-minute run. Oxygen saturation of the body was determined by the tests "Stange test", "Genchi test", "Spirometry". *Results:* After the end of the study, the data in the control group improved by 0.8% in the "6-minute run" test, by 0.7% "Spirometry", by 3% "Stange test" and by 11.5% "Genchi test". In the Experimental group, the indicators were higher in the "6-minute run" test by 2%, "Genchi Test" by 12.8%, "Spirometry" by 2.5% and the indicators in the "Stange test" increased by 8.6% and showed a significant improvement ($P<0.05$). *Conclusion:* Children who have diseases of the pulmonary system should additionally engage in physical therapy 3 times a week, at least 1 hour, outside of school hours. The results of the study showed a significant effectiveness of the applied physical exercises for the development of functional abilities of students.

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