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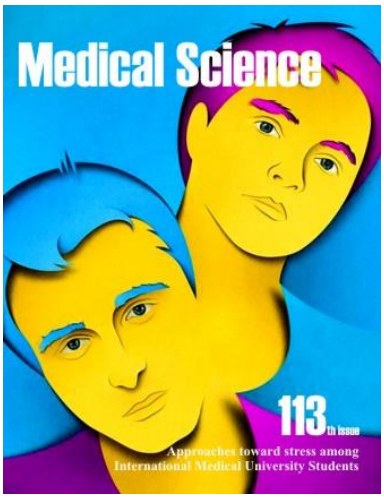
Medical Science

About the Cover



Background: Medical education is a highly demanding curriculum which faces long hours of studying. This study aims to identify the most employed coping mechanisms among International Medical Students (IMU) undergraduate medical students. This gives us information on the nature of the coping mechanism (active vs avoidant) and the need for social and psychological intervention, counselling programs, peer and mentor support. *Methods:* A cross sectional study involving 297 participants of International Medical University (IMU) undergraduate medical students was done. Brief Cope Questionnaire was used to determine the coping mechanisms to stress among IMU undergraduate students. We used a validated questionnaire and analyzed the final results using SPSS. *Results:* A total of 297 participants were included in the study. According to the results, the most popular coping mechanisms are emotional support (27%) (OR=0.0006, 95% CI=0.0000 to 0.0101, P < 0.0001), instrumental support (24%) (OR=0.0005, 95% CI=0.0000 to 0.0088, P < 0.0001), positive reframing (24%) (OR=0.0005, 95% CI=0.0000 to 0.0088, P < 0.0001) and acceptance (23%)(OR=0.0005, 95% CI = 0.0000 to 0.0087, P < 0.0001) whereas the least popular methods used are denial, substance use and behavioral disengagement. There is no correlation between age, semester and coping mechanisms. *Conclusion:* Students adopt active coping strategies rather than avoidance. Understanding and getting advice from third parties are crucial for medical students to manage their stress level. Therefore, university administration should take appropriate steps as needed based on the expectations and feedback from students. (Ref: Ikram MA, Wei LW, Razali M, Lee VYY, Raj SS, Ze LK. Approaches toward stress among International Medical University Students. *Medical Science*, 2021, 25(113), 1502-1506).

ANALYSIS

Approaches toward stress among International Medical University Students

Mohammad Arshad Ikram, Lim Wen Wei, Maryam Razali, Vanessa YY Lee, Sushmietha S Raj, Lee Kun Ze

Background: Medical education is a highly demanding curriculum which faces long hours of studying. This study aims to identify the most employed coping mechanisms among International Medical Students (IMU) undergraduate medical students. This gives us information on the nature of the coping mechanism (active vs avoidant) and the need for social and psychological intervention, counselling programs, peer and mentor support. *Methods:* A cross sectional study involving 297 participants of International Medical University (IMU) undergraduate medical students was done. Brief Cope Questionnaire was used to determine the coping mechanisms to stress among IMU undergraduate students. We used a validated questionnaire and analyzed the final results using SPSS. *Results:* A total of 297 participants were included in the study. According to the results, the most popular coping mechanisms are emotional support (27%) (OR=0.0006, 95% CI=0.0000 to 0.0101, P < 0.0001), instrumental support (24%) (OR=0.0005, 95% CI=0.0000 to 0.0088, P < 0.0001), positive reframing (24%) (OR=0.0005, 95% CI=0.0000 to 0.0088, P < 0.0001) and acceptance (23%)(OR=0.0005, 95% CI = 0.0000 to 0.0087, P < 0.0001) whereas the least popular methods used are denial, substance use and behavioral disengagement. There is no correlation between age, semester and coping mechanisms. *Conclusion:* Students adopt active coping strategies rather than avoidance. Understanding and getting advice from third parties are crucial for medical students to manage their stress level. Therefore, university administration should take appropriate steps as needed based on the expectations and feedback from students.

Medical Science, 2021, 25(113), 1502-1506

CASE REPORT

Cutaneous mucormycosis with maxillary sinus fistula as a presenting feature of COVID-19: A rare case report

Mansi Patel, Dhruv Talwar, Sunil Kumar, Sourya Acharya, Ayush Dubey, Vidyashree Hulkoti, Sameera Dronamraju

Deadly secondary infections caused by Rhizopus species leading to mucormycosis have taken the world by storm. Most common presenting features of COVID-19 remain congectival congestion, headache and blurring of vision. However mucormycosis with a fistula manifesting as the primary symptom of COVID-19 is rare and this is the first case report of its kind to best of our knowledge. We report a case of 61 year old female who presented with a pus draining fistula on right side of her face. A Nasopharyngeal swab came positive for COVID-19 by Reverse Transcriptase polymerase chain reaction method. MRI para nasal sinus was suggestive of fungal sinusitis. Debriedment was done for the same and a swab was sent which showed growth of Rhizopus species on culture.

Medical Science, 2021, 25(113), 1507-1512

Bradycardia, Renal failure, AV node blocker, Shock, Hyperkalemia (BRASH syndrome): Don't ignore it

Prerna Verma, Dhruv Talwar, Neha Phate, Sunil Kumar

BRASH syndrome is characterised by bradycardia, renal failure, hyperkalemia and use of an AV nodal blocker (AVNB). These symptoms form a vicious cycle seen in a patient having reduced glomerular filtration rate who are on AVNB. There is reduced excretion of AVNB in a patient with low glomerular filtration rate along with hyperkalemia due to renal failure. All of these factors precipitate the cycle of BRASH Syndrome. Here we present a case of 50 year old male presenting with bradycardia, renal failure and hyperkalemia and on history evaluation revealed to be on calcium channel blockers for hypertension precipitating BRASH Syndrome.

Medical Science, 2021, 25(113), 1513-1516

Facial colliculus syndrome with inflammatory cranial neuritis in a patient with covid 19 with mucormycosis superinfection

Shivam Khanna, Dhruv Talwar, Sunil Kumar, Sourya Acharya, Vidya Hulkoti, Sparsh Madan

Features of unilateral cranial nerve 7th lower motor neuron palsy and same sided 6th nerve involvement without hemiplegia or hemiparesis is a rare clinical entity in itself, which is referred to as Facial Colliculus Syndrome. This presentation was noticed in a patient of Covid 19 positive status and mucormycosis not on prolonged steroid treatment. This is a case report of an 80-year old female patient who was admitted to the medical ward of our hospital with presenting complaints of breathlessness and fever of 5 days duration. Later during course of the disease on followup in hospital she developed left sided 6th and 7th cranial nerve involvement. This case report highlights the case of an elderly female patient presenting with cranial nerve involvement with mucormycosis with covid 19 superinfection on follow-up after home quarantine.

Medical Science, 2021, 25(113), 1517-1521

ANALYSIS

Laboratory investigation and clinical outcomes in sickle cell disease patients infected with COVID-19: A single-center experience in India

Sunmeet Matkar, Ajit Gangawane

Background: Patients with sickle cell disease (SCD) have been part of the population 'high-risk' group since the COVID-19 pandemic. This study focused to understand impact ofCOVID-19 on clinical outcomes in SCD. *Methods*: Data were taken at the baseline and clinical course of this prospective one-center intervention in SCD patients diagnosed with COVID-19 in isolation centers (associated with Sevagram Hospital) dedicated for COVID-19 patients in Wardha, Maharashtra, India. Patients were followed-up post-hospital discharge for up to 1 month. *Results*: Of 120 SCD patients with COVID-19, 88 patients (73.33%) required hospitalization, and 32 died (26.67%). Vasocclusive pain was the most common symptom. In 36.36% of hospitalised people and all those who died, acute chest syndrome occurred. Older and recent hypertension records, congestion and stroke, and elevated levels of creatinine and bilirubin were common among patients who died. *Conclusion*: The risk for morbidity, including ACS, seems the greatest among older patients with sickle cell status, particularly those who have chronic end-organ diseases, including brain, heart and lung.

Medical Science, 2021, 25(113), 1522-1529

RESEARCH

Mechanisms of C2-ceramide-induced apoptosis in osteoblasts

Turki Y Alhazzazi, Raghad A Al-Dabbagh, Nadia A Al-Hazmi, Sahar Bukhary, Dania F Bogari, Daniel Weekes, Fraser Mc Donald, Peter Hill, Agamemnon E Grigoriadis

Dysregulated osteoblast programmed cell death (PCD) is implicated in metabolic bone diseases such as osteoporosis. Ceramide, a precursor to all complex sphingolipids, is a secondary messenger in PCD. However, the mechanisms of ceramide induced-PCD are poorly characterized. Thus, the aim of this study was to investigate the nature and mechanism of ceramide-induced PCD in osteoblasts. The MTT assay, propidium iodide uptake with flow cytometric analysis, and TUNEL staining were used to assess the effect of exogenous ceramide on cell viability and apoptosis in MC3T3-E1 cells and primary murine osteoblasts. Western blotting and immunofluorescence approaches were used to elucidate the underlying signaling mechanisms. Ceramide reduced MC3T3-E1 and primary osteoblast viability and induced apoptosis in a dose-dependent manner. Ceramide failed to activate the executioner caspases-3 and -7 and poly (ADP-ribose) polymerase (PARP), while a selective inhibitor of caspase-8 abrogated ceramide effects on osteoblast viability. Ceramide induced p38 and ERK activation, but only p38 was involved in ceramide-induced osteoblast PCD. Our study highlights a novel role for ceramide in inducing caspase-8 and p38-dependent osteoblast PCD. Understanding cell death mechanisms in osteoblasts could help in the development of new targeted therapeutics that selectively identify cells with pathogenic programmed cell death pathways.

Medical Science, 2021, 25(113), 1530-1541

Antioxidant action of green tea extract in alloxan-induced diabetic albino rats: An experimental laboratory-based study

Ali Hassan A Ali, Ali Yaqoub Alali, Rasheed A Alhajri, Abdulrahman M Aldawsari, Ammar H AlHeseni, Nasser S Aldosari

Background: Green tea extract can regulate blood sugar and encourage weight loss due to its high antioxidant content. Several studies have shown that green tea extract can improve general health and may help protect against many diseases. Most patients with diabetes are associated with poor fertility. *Aim of the work*: The present study aimed to evaluate the importance of green tea extract supplementation in reducing metabolic abnormalities associated with alloxan-induced diabetes in male albino rats. *Material and Methods*: The number of male rats was thirty, weighing 100-110 grams were used in the current study. The rats were divided equally into three groups that included control, diabetic and diabetic took green tea extracts orally (50 mg/Kg/day) for three weeks. To induce diabetes one dose (120 mg/kg) of alloxan was used. Diabetic rats were given "50 mg/kg body weight green tea extracts orally for thirty days twice per day. The morphological and histological structures of the testis were compared in different groups of the rats. *Results*: It was revealed that the morphological changes of the testis observed in diabetic groups were siginficantly improved after treatment with green tea compared to the control group. *Conclusion*: These results prove that green tea improves oxidative damage caused by diabetes in the testis of male rats.

Medical Science, 2021, 25(113), 1542-1550

ANALYSIS

Human parvovirus B19 sero-molecular prevalence in Madinah blood donors, Saudi Arabia

Amjad Yousuf

The human parvovirus B19 is known to cause erythema infectiosum in children. The virus is transmitted through respiratory droplets, vertically from mother to fetus, via blood transfusion, and by transplantation of body organs. B19V may cause serious complications in pregnant women and patients with hemoglobinopathies, transient aplastic crisis, or immunodeficiency syndromes. The aim of this study is to estimate the seroprevalence of parvovirus B19 and investigate the presence of viremia by detecting viral DNA in acute infection cases in Madinah, Saudi Arabia. Three hundred blood donors were tested for anti-B19 IgG and IgM antibodies using ELISA. Then, IgM positive samples were tested for the presence of B19 DNA by PCR. A majority (66.67%, 200/300) of the tested samples were positive for anti-B19 IgG, while 1.67% was positive for both anti-B19 IgM and IgG. The prevalence of anti-B19 IgG was statistically different between the age groups of 18–25 years and 46–55 years ($p = 0.04$), while it was comparable

between the age groups of 18–25, 26–35, and 36–45 years. Anti-B19 IgM prevalence was comparable between all age groups. No B19 DNA was detected in the tested IgM-positive samples. High prevalence of anti-B19 IgG was demonstrated in Madinah, and no viral DNA was detected in the anti-B19 IgM positive samples. Therefore, there is a negligible possibility of B19 transmission by transfusion of whole blood. However, screening of B19V should be performed for blood and blood products to be given to high-risk individuals such as pregnant women and patients with hemoglobinopathies, transient aplastic crisis, or immunodeficiency syndromes.

Medical Science, 2021, 25(113), 1551-1557

Patient's satisfaction with primary health care services in Arar city, Saudi Arabia

Ahmad Awad R Alenazi, Trke Mohammed A Alhazmi, Abdulaziz Ramdan H Almatrafi, Mashail Basheir Alhusaini Alshammari

Background: Patient satisfaction is considered as a legitimate and an important measure to the quality of health care provided. Moreover, it has been shown to be associated with better outcomes. *Objectives*: to study the patient's satisfaction with the different aspects of primary health care services offered by the Arar city PHC centers. *Methods:* This is a cross sectional study that was conducted in primary health care centers at Arar city, Northern Border province, KSA, between the 1st May 2019 and the 1st August 2019. The target population was patients attending in 3 Primary Health Centers. *Results*: In our study; 3% strongly agreed and 24.7% agreed to be dissatisfied. 19.3% strongly agree and 46.7% agree that they received perfect care in the PHC clinics, 26.0% strongly agree and 54.0% agree that healthcare workers are careful. Also 36% strongly agreed and 51% agreed that complete and comprehensive explanations of medical information are delivered to the patients. As regards the reasons of dissatisfaction, 3.3% strongly agreed and 17.7% agreed for waiting too long, in addition, 0.3% agree and 5.3% strongly agree that healthcare workers ignore the patients. Hard appointment was reported by 23.3% of the participants. *Conclusion*: In our study; most of the attendees of the PHCs satisfied from the provided services and complete and comprehensive explanation of medical information are delivered to patients. Waiting too long and hard appointment were the main reasons for dissatisfaction.

Medical Science, 2021, 25(113), 1558-1566

E-cigarette a path away from tobacco or towards it, Riyadh, KSA

Amar Fathi M Khalifah , Abdullah Sulaiman Bin Hamad, Mansour Fahad Almusayab, Ammar Abdu Alkhatabi, Mohammed Ayoub Aljayan, Mohammed Hassan Alsomali, Mustafa Akram Hashem, Saad Abdullah Alsaif, Osama Abdu Alkhatabi, Talal Abdullatif Faden, Abdulrahman Abdulaziz Al Moaqal, Ahmed Nihad Sabooni, Sultan Abdulaziz Alsaif

Background: cigarette smoking is one of risk factors for early mortality due to cancer, cardiovascular disease, and (COPD) chronic obstructive pulmonary disease. The study aims to determine whether e-cigarette helps in tobacco cessation. *Methodology*: our study is a cross-sectional study in KSA Riyadh includes both Saudi and non-Saudi adult smokers conducted among university students, sample size was 150 persons using systemic random sample, data analyzed using SPSS and P value of 0.5 or less considered significant. *Results*: the major reason for starting to use e-cigarettes were because of good flavor 41%, the majority 32% agreed that e-cigarette is efficient and helps in tobacco cessation, in terms of the E-cigarette in nicotine reduction (53.3%) of the participants said yes and (46.7%) said no, 51% of participants returned to conventional cigarettes. *Conclusion*: the majority of the participants perceive that the e-cigarette is an efficient alternative for conventional cigarette and can help to reduce regular smoking and quitting. The majority of the respondents use the conventional cigarettes.

Medical Science, 2021, 25(113), 1567-1571

Prevalence of maxillary sinus abnormalities in asymptomatic Saudi adult population

Ali Hassan A Ali, Omar O Serhan, Ali Amer Hamdi, Fahad M Alotaibi, Ahmed M Alsomali, Abdulrahman S Alshammari, Alwaleed R Alshammari, Saeed M Oraydah

Objective: The aim of our work was to study the prevalence of maxillary sinus abnormalities in asymptomatic Saudi adult population using computed tomography. *Materials and methods*: It was retrospective study in King Khalid Hospital in Al-Kharj. It was designed to evaluate all patients who underwent brain CT scanning for any reason unrelated to maxillary sinuses abnormalities. 1442 patients underwent CT scans in past ten months from July 2020 to early May 2021 and evaluated by two examiners for identification of any abnormalities. All demographic data and radiological features related to maxillary sinuses were evaluated. *Results*: Retrospective CT scan analysis for incidental maxillary sinuses abnormalities revealed that about 495(34.33%) of the cases had positive findings, where the majority were males 517 (67.1% of the positive findings) while the females represented around 254 (32.9% of the positive findings). Of all these findings, the most frequently maxillary sinuses pathology found was Mucosal thickening 575 (39.88%) of all cases. *Conclusions*: Spread of incidental maxillary sinus abnormalities is more in the asymptomatic patients.

Medical Science, 2021, 25(113), 1572-1577

Intensive treatment of lymphedema and mobilization of liquids in body segments

Maria de Fatima Guerreiro Godoy, Jose Maria Pereira de Godoy, Lívia Maria Pereira de Godoy, Henrique Jose Pereira de Godoy, Rogerio Rodrigo Ramos

Background: Lymphedema is a clinical condition associated with a functional or mechanical deficiency of the lymphatic system, leading to the accumulation of macromolecules in the interstitial space and the consequent retention of liquids. The objective of the study was to determine changes in the extracellular water/total body water ratio in all extremities and the thorax after intensive treatment for lymphedema. *Method*: A clinical crossover study was conducted involving the determination of the extracellular water/total body water ratio in all extremities and the thorax of 86 patients with clinical diagnosis lymphedema, stage II and III at the Clínica Godoy-Sao Jose do Rio Preto-Brazil in January until December 2020. Evaluations were performed with multi-segment bioimpedance analysis before and after intensive treatment for lower limb lymphedema using the Godoy Method. *Results*: Significant reductions were found after treatment using all assessment methods (volumetry, circumference measurements and bioimpedance analysis). *Conclusion*: The intensive treatment of lower limb lymphedema using the Godoy Method results in a reduction in edema throughout the body, as demonstrated by bioimpedance analysis of all extremities and the trunk. Therefore, the method affects the lymphatic system and the response is systemic.

Medical Science, 2021, 25(113), 1578-1582

CASE SERIES

Type 2 myocardial infarction in COVID19: World's first case series

Gaurav Jagtap, Dhruv Talwar, Sunil Kumar , Sourya Acharya, Iftekhar Ansari, Meenal Rajput

Type 2 Myocardial Infarction is characterized as a myocardial infarction which is caused by factors other than Coronary Artery Disease (CAD). The causative factor for a secondary myocardial infarction is a disbalance between oxygen supply and its demand. There have been cases where there was 90% blockage in the coronaries but still myocardial infarction was classified as type 2 as the causative factor was not Coronary artery disease but the disbalance between oxygen demand and supply. Thus there is a diagnostic challenge with considerable overlap in Type 2 and Type 1 Myocardial Infarction. COVID19 has brought a tremendous load on healthcare ever since it's identification in the late 2019. There is increased demand of Oxygen due to hypoxia caused by severe pneumonia leading to a disbalance between oxygen supply and demand causing a type 2 myocardial infarction, though the cases of Type 1 myocardial infarction due to COVID19 are well documented this is the first case series showing Type 2 myocardial infarction in the world to our knowledge.

Medical Science, 2021, 25(113), 1583-1588

ANALYSIS

Duration of operation in association with surgical site infection in Saudi Arabia: A systematic review and meta-analysis

Hassan Ahmed S Aljudia, Osama Abdulaziz A Alhassan, Abdullah Mohammad G Alruwaili, Rawan Humaidy H Alshammary, Bader Menwer N Albilasi, Marwan Abdalaziz J Alfrhoud, Jumanah Mohammed D Alanazi, Osama Mohammed F Alenzi, Yazeed Mayah D Alazmi, Omar Abdulaziz A Alhassan

Introduction: Although surgical site infections (SSIs) are preventable complications of surgical procedures, they continue to represent a threat to public health, having a critical effect on patients and healthcare systems. *Methodology*: A systematic search was conducted through Google Scholar, PubMed, Scopus, Web of Science, and Cochrane to include the relevant literature in this systematic review and meta-analysis. Review Manager 5.4 to conduct a quantitative data synthesis for the analyses. Random-effects meta-analysis was used to assess the effect of operation duration as a potential risk factor on SSI. *Results*: A total of 7 studies were eligible for this study with 3583 patients included. The estimated pooled SSI prevalence among post-operative patients in Saudi Arabia was [0.09 (95% CI; 0.05, 0.12)] with significant heterogeneity level (I^2=93%; P<0.001). The duration of operation of the seven studies was significantly different between those who developed postoperative SSI and the control group [SMD=0.78, (95% CI; 0.22, 1.34), P=0.006]. *Conclusion*: We reported a relatively high prevalence of postoperative SSI in Saudi Arabia. The least SSI prevalence rate was found among women who underwent cesarean section while the highest prevalence rate was associated with autologous cranioplasty. We also found that prolonged duration of operation was significantly associated with a higher incidence of postoperative SSI.

Medical Science, 2021, 25(113), 1589-1597

Correlations among body mass index, body balance and bone mineral density in elderly women

Azza Mohammed Abdelmohsen, Bassam Ahmed Nabil, Asmaa Foad Abdelmonem

Objective: The target of this study was to assess the correlation between each two of the following variables; body mass index (BMI), body balance, and bone mineral density (BMD) in postmenopausal women in order to detect the threatening factors that predispose them to fractures. *Methods*: Forty-eight elderly postmenopausal women contributed to this study. Their ages ranged from 50 to 55 years. The valid and objective Berg Balance Scale (BBS) was used to assess their body balance. The BMD of lumbar vertebrae was measured by the golden standard scanning method known as dual energy X-ray absorptiometry (DEXA). *Results:* The obtained findings of Pearson correlation analysis revealed a substantial negative correlation between BMI and body balance with p value = 0.000 and r = -0.49 and also a significant negative correlation between BMI and BMD with p value = 0.008 and r = -0.38. In addition,

there was a statistical positive correlation between body balance and BMD with P value = 0.005 and r = 0.6. *Conclusions*: Increasing BMI is a risk factor to a disturbed balance and a decreased BMD and this in turn increases the susceptibility of falls developing fractures in elderly females. Furthermore, increased BMD augments body balance. Trial registration; Clinical Trials.gov Identifier: NCT03280693.

Medical Science, 2021, 25(113), 1598-1605

Self-esteem following noninvasive cosmetic procedures

Malak Almutlq, Shahad Alruwaili, Faris Binyousef, Hanan Alruwaybiah, Nada Alharthi, Sattam Alzahrani, Mohammed AlKhudhair, Khalid Bin Abdulrahman, Fajer Alzamil

Background: Low self-esteem and life satisfaction are common reasons patients seek cosmetic procedures, which improve a patient's appearance with enhanced aesthetic appeal, balance, and proportion. *Objectives:* This study aimed to evaluate patient self-esteem following noninvasive cosmetic procedures in Riyadh, Saudi Arabia, and the primary motivations for seeking cosmetic procedures. *Material and methods:* This cross-sectional study was conducted in Riyadh, Saudi Arabia, in a population of male and female adults who underwent noninvasive cosmetic procedures using a self-administered questionnaire distributed online. The sample size was 411. We assessed participant self-esteem using the Rosenberg Scale. *Results:* The findings show that the primary motivation to undergo cosmetic procedures was to increase their perceived attractiveness level (71.8%) (n=295). Higher age was significantly associated with higher self-esteem (P = 0.006). The perceived importance of cosmetic procedures was associated with the reported self-esteem which is strategically significant (P< 0.001). *Conclusion:* Most patients undergoing noninvasive cosmetic procedures had high self-esteem. Our findings may provide adults considering noninvasive cosmetic surgery useful information on self-esteem following the procedures.

Medical Science, 2021, 25(113), 1606-1614

Association between combined homozygous MTHFR C677T and A1298C polymorphisms and adverse effects in Saudi pediatric patients receiving dental treatment under nitrous oxide sedation

Sara M Bagher, Amina M Bagher, Narmin Helal

Nitrous oxide (N_2O) is a commonly used safe and effective inhalational anesthetic agent in pediatric dentistry. Here, we aimed to evaluate the association between methylene tetrahydrofolate reductase (*MTHFR*) polymorphisms (C677T and A1298C) and adverse effects in nine Saudi pediatric patients who received dental treatment under N_2O sedation using genetic screening tests. Five of the subjects were male (55.6%) and the mean age was 6.8 (±2.35) years. The mean time before the last meal was 6.1 (±4.4) and the mean duration of receiving N_2O was 33 (±14.86) minutes. Only two subjects developed mild to moderate adverse effects, such as nausea, vomiting, dizziness, fatigue, and sleepiness. Genetic screening revealed that both subjects were homozygous for *MTHFR* C677T and A1298C polymorphisms. This suggests a possible relationship between combined *MTHFR* polymorphisms and the development of mild and moderate adverse effects in pediatric patients receiving dental treatment under N_2O sedation.

Medical Science, 2021, 25(113), 1615-1619

Knowledge and perception of dental students and practitioners towards treatment of dental fluorosis

Waseem Radwan, Jumana Al Dulijan, Ranya Abubotain, Aynaa Alrifae, Dina Alismail, Linah Alzeghaibi, Noura Alawaifi, Jude Alrajhi

Introduction: Dental fluorosis in the anterior teeth may raise esthetic concerns in many patients. There are several methods in dentistry to correct esthetic alterations caused by staining. Hence this study aimed to assess the knowledge of dental students, dental interns, general practitioners, and postgraduates towards the treatment of dental fluorosis in Saudi Arabia. *Materials and Methods:* This was a descriptive cross-sectional study conducted among 1600 clinical dental trainees and practitioners (dental students, dental interns, general practitioners & postgraduates). An online structured, close-ended, self-administered questionnaire consisting of demographic information and four figures showing different grades of dental fluorosis (mild, moderate, and severe) and respective treatment modalities were shared on social media platforms to assess knowledge and perception towards resin infiltration. Descriptive statistics and Chi-square tests were applied to compare different categorical variables. *Results*: The age of the sample ranged between 21- 24. The grading and treatment responses showed statistically significant differences (p<0.0001). In addition, gender showed significant differences regarding the treatment responses for the moderate dental fluorosis, wherein 53.7% of males chose veneers and 56.6% of females chose micro-abrasion (X^2=14.159, p=0.003). *Conclusion*: Minimally invasive esthetic dentistry modalities were effective treatments. In addition, a combination of resin infiltration or micro-abrasion in combination with in-office/home bleaching can always be an option in different fluorosis cases.

Medical Science, 2021, 25(113), 1620-1630

Insomnia during COVID-19 pandemic and lockdown: Prevalence, severity, and associated risk factors in Jeddah, Saudi Arabia

Ahmed M Faheem, Ali S Al Qarni, Narjes A Al banawi, Nahid K Abashar, Hanadi S Al Wagdani, Razan O Al Amri

Objectives: Coronavirus disease 2019 (COVID-19) is highly infectious respiratory disease; it was spread globally to plenty of countries which can be effect on peoples sleep pattern and their psychological condition. The purpose of our study is to measure the prevalence of insomnia and its risk factors during the COVID19 pandemic and lockdown in Jeddah city. *Methodology*: Cross-

sectional study with number of 395 participants from general Jeddah population in Saudi Arabia, conducted in July 2020. Three validated questionnaires were used: insomnia severity index (ISI), Generalized Anxiety Disorder 7-item (GAD-7), and scale 3-Patient Health Questionnaire (PHQ-9). *Results*: Our sample size is 395, most of the individuals suffer of several days nervous, worrying too much, not being able to control worrying, trouble relaxing, being restless, and feeling afraid as if something awful might happen 55.9%, 43.0%, 40.3%, 40.5%, 37.7% and 35.4%, respectively. Both genders have mild anxiety 48.4%.Scoring for depression in females were mild 18.0% and moderately depression 11.4% while males had mild depression 13.2%. Of all the participants 34.9% and 45.3%, had mild difficulty falling and staying asleep, 31.4% and 25.8% had moderate difficulty, respectively. 31.6% had mild problem waking up too early and 30.6% had moderate problem. *Conclusion*: Insomnia is definitely linked with all variables except educational level. In contrast to depression and anxiety which have association with educational level only. Female scored higher level than males in anxiety, depression and insomnia.

Medical Science, 2021, 25(113), 1631-1640

Red meat consumption and cardiovascular diseases in Al-Ahsa governorate, Saudi Arabia

Eman Elsheikh, Loay Alsaad, Jawad Almarzooq, Adnan Al Ali, Abdullah Bukanan

Background: Coronary artery disease (CAD) poses a major burden of diseases on Saudi Arabia. One of the potential dietary risk factors which are associated with the development of cardiovascular diseases is meat consumption. This study aimed to find the prevalence of CAD among meat consumers whether red or white meat and processed or unprocessed meat. *Method*: An observational cross-sectional study was conducted at the period from 5th November 2019 to 15th March 2020. A total of 220 people participated in the study conducted through a questionnaire distributed among Al-Ahsa residents. *Results*: The mean age of participants was 52.04 $\pm$ 7.56. The mean BMI was 28.32 $\pm$ 13.99. 126 (57.3%) of the participants were males and 94 (42.7%) were females. coronary artery disease (CAD) was present among 118 (53.6%) and absent in 102 (46.4%). The prevalence of CAD among unprocessed red meat consumers; n=76 (54.3%) was not found to be significantly different than that among white meat consumers; n=42 (52.5%). On the other hand, the prevalence of CAD was significantly different among participants among people who consume red meat at different frequencies. It was 50%, 44.4%, 78.9%in low, moderate, and high consumers respectively; P value 0.002. Moreover, significant CAD distribution was among processed meat consumers; n=35 (71.4%) versus unprocessed meat consumers; n=83 (48.5%). *Conclusion*: Consuming red meat at higher frequency and processed meat intakes were associated with higher prevalence of CAD.

Medical Science, 2021, 25(113), 1641-1651

Digitally reproduced dental casts: Validating the duplication of dental casts utilizing 3D digital scanners and a 3D printer system

Lamia Almutairi, Bushra Alotaibi, Sarah Alkhattab, Mohammed Awawdeh

Purpose: To evaluate the efficiency between three different scanners in the College of Dentistry in King Saud bin Abdulaziz University for Health Sciences (KSAU-HS) in terms of obtaining accurate 3D models. *Methodology*: Five pairs of plaster casts were selected randomly from the clinics of KSAU-HS. The casts were scanned using three different 3D scanners to create 3D models and printed using a 3D printer. Mesh Lab 2016 software was used to evaluate the accuracy of the printed models by superimposing the original scanned casts on the printed casts. A hand held calliper was used to measure selected distances to compare between the plaster casts and the printed models. *Results*: Statistical analyses were done using Graph Pad Prism 5. Kruskal-Wallis test showed no statistically significant difference in the accuracy between the scanners, *P =.166*. K-related test for the manually measured casts showed no statistically significant difference in the accuracy between the scanners, *P =.433*. The three scanners showed substantial differences in terms of scanning time. *Conclusion*: No variations were detected in the accuracy of the printed and original models.

Medical Science, 2021, 25(113), 1652-1660

The therapeutic effect of an organosulfur-derived capsule (Nicovid) as a supplementary treatment for covid-19 patients

Hossein Niktale, Shahram Shokri, Abbas Nosrati, Mohammad Ghasemi, Maryam Houshmand, Ima Mansori, Roghaye Niktale

Background: From the emergence of the novel corona virus, several drugs have been proposed for its treatment. New compounds are being tested on a regular basis to find the most effective drug for ameliorating the symptoms of this infection. Organosulfur-rich compounds extracted from *Allium sativum* (garlic) has been found to have anti-viral and therapeutic effects in the management of COVID-19. Thus, this study has been designed to evaluate the efficacy of an organosulfur-derived capsule in the management of COVID-19 patients. *Material and Methods*: 756 patients with COVID-19 infection were enrolled for this randomized case-control study in a hospital in northern Iran, which were randomly divided into placebo and organosulfur group. From 22 September 2020 to 19 March 2021, the organosulfur group was given an organosulfur-derived capsule (90 mg/kg) three times a day (every eight hours) for 14 days. Placebo capsules were given to the placebo group on the same regiment. 720 patients completed the treatment (n=360 in each group). Clinical symptoms, vital signs, and laboratory tests were evaluated both before and after the treatment. *Result*: A significant difference was found in the prevalence of cough (p-value=0.015), dyspnoea (p-value=0.014), and myalgia (p-value=0.001) along with O2-saturation (p-value=0.023), platelet (p-value=0.023) and CRP (p-value<0.001) levels between placebo and organosulfur groups. Other symptoms haven't shown a statistically significant difference. *Conclusion*: The present study showed

that supplementary treatment of COVID-19 patients with organosulfur compounds can remarkably improve the clinical symptoms and O2-saturation along with platelet and CRP levels.

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Workforce development among oral health providers in ministry of health facilities in Jazan, Saudi Arabia

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Background: This study provides an overview of dental training participation- related activities reported by Saudi Ministry of Health-associated oral healthcare providers in Jazan, Saudi Arabia. *Method*: For this quantitative study, a total of 113 participants completed an online cross-sectional questionnaire for a response rate of 56.5%. Just over half (53.1%) of the participants were working in primary healthcare centres (PHCs) in the central area (88.5%) of the region. *Results*: This study found a number of variables were significantly associated with the providers' participation in dental workshops in the past year, including gender, age, work location, education level, professional type, years of experience, country of last degree, average time of any treatment procedure for each patient and number of patients every day. *Conclusion*: This study ends with the recommendation that comprehensive educational and training programs be developed that focus on increase and implement these programs in their practice.

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RESEARCH

The anticariogenic effect of xylitol on seven *Streptococcus mutans* strains

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Introduction: Xylitol can affect caries-inducing bacteria; however, different *Streptococcus mutans* strains might respond differently. *Aim:* To investigate the effect of xylitol on biofilm formation and metabolic activity of seven *S. mutans* strains. *Methods:* Seven *S. mutans* strains (UA159, A32-2, NG8, 10449, UA130, LM7, and OMZ175) were inoculated into 96-well microtiter plates and were tested with various xylitol concentrations (0.0, 0.0016, 0.0031, 0.0063, 0.0125, 0.025, 0.05, 0.1, 0.2, 0.4 and 0.8 g/mL) for inhibition of biofilm formation and bacterial metabolic activity by recording absorbance values. Lactate dehydrogenase and extracellular polysaccharide assays were conducted at 0.0, 0.1, 0.2, 0.4, and 0.8 g xylitol/mL. Data were analyzed by one-way analysis of variance, Tukey's, paired t, and LSD tests at 0.05 significance level. *Results:* Xylitol produced a significant decrease in bacterial biofilm formation compared to controls at 0.4 g/mL, with almost complete lack of biofilm formation at 0.8 g/mL. This was consistent with metabolic activity which demonstrated a significant activity reduction occurring for all strains at 0.4 g/mL, and a complete lack of activity at 0.8 g/mL for all seven strains. There was a trend for lower LDH and EPS production with the increase in xylitol concentration especially with UA159, UA130, and NG8. *Conclusion:* Xylitol has a clear anticariogenic effect on *S. mutans* which was slightly different depending on the tested strain confirming that the benefit of xylitol might vary from one patient to another. The effect is more apparent at concentrations of 0.4 g/mL and higher.

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ANALYSIS

Quality of life in pediatric with asthma during the COVID-19 pandemic: Moderating role of coronavirus-related anxiety in children and mothers

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Coronavirus SARS-CoV-2 disease (COVID-19) has affected the quality of life of children and parents. Furthermore, the mental health of children with asthma and their care givers may be affected by the anxious conditions of the coronavirus. In this study, the moderating role of coronavirus anxiety in the associations between psychiatric symptoms and quality of life (QL) in children with asthma was investigated. The present study is a cross-sectional study. The sample includes 118 children (53% boys) aged 7 to 14 years with asthma and their mothers (n =118). Also, 56% of the samples had mild asthma, 38% moderate, and 24% severe asthma. The results showed that after adjusting for the role of severity and control of asthma, child and mother psychiatric symptoms predicted 17% (ΔR^2=.17) of the variance in QL in children. Coronavirus anxiety in children and mothers as moderating variable explained 15% of the variance QL in children with asthma. Overall, psychiatric symptoms and coronavirus anxiety in mothers and children predicted 27% of the poor QL in children with asthma. In this study, a high correlation was observed between maternal psychiatric symptoms and child psychiatric symptoms. Psychiatric symptoms and coronavirus anxiety in mothers and children play a significant role in the QL of children, especially during the coronavirus pandemic. Therefore, paying more attention to these symptoms can help improve the QL of children with asthma. Also, investigating the long-term effects of these symptoms can be of interest to researchers.

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Occupational injuries among radiologist in Saudi Arabia: A cross sectional study

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Background: Any injury or illness that has resulted in a limitation in an individual's working area is referred to as an occupational injury. This Study aimed to illustrate the types of work-related injuries experienced by medical imaging professionals. *Methods*: Medical Imaging Professionals in Saudi Arabia who work in public and private institutions participated in a cross-sectional study via an online survey. Descriptive statistics were used to analyze the data. *Results*: A total of 370 medical imaging professionals have participated in the survey. Among the respondents, 100 (27%) radiologists have experienced job-related injuries while working as radiologists. Among those who have experienced work-related injuries, 44% work on average 5 to 8 hours per day, and 47% work 8 to 10 hours per day. Most of the respondents (45%) have taken less than one week's leave of absence from work for the job-related injury, followed by 21% who had not taken leave due to the injury. Comparing the number of their daily reported cases, nearly one-fourth of the radiologists (24%) claim that their achievements decreased by 5% to 10%. *Conclusion*: Our findings show that occupational damage is likely to be multi-factorial in nature. Poor ergonomic standards harm radiologists, and this can have a negative impact on patients if radiologist tiredness leads to reporting mistakes. Individual techniques for decreasing or eliminating the prevalence of occupational injuries among radiologists require more research.

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Effect of isometric back endurance exercises on patients with non-specific chronic low back pain: Randomized control trail

Ibrahim Metwally Dewir

Objective: The study's goal was to determine the impact of isometric back endurance exercises on pain, function and trunk extensor muscles endurance. *Methods*: Total 60 male patients of ranging in age between 20 to 40 years ago were afflicted with chronic nonspecificlow back pain were divided into two groups, each with an equal number of participants, group A (experimental group) and group B (control group). Prior to the intervention, each subject's VAS, modified Oswestry disability index, and Biering Sorensen test scores were recorded. After that, both sets of participants got a 15-minute hot pack treatment. And then Isometric back endurance exercises were given to group A, as well as conventional exercises (stretching and strengthening exercises), and group B received conventional exercises (stretching and strengthening exercises only) 3 times each week for consecutively 6 weeks. The values of VAS, modified Oswestry disability index, and BieringSorensen test were again measured at the end of 6 weeks. *Results:* When the baseline values of both groups were compared, it was discovered that a highly significant improvement in pain, function and endurance in group A more than group B. *Conclusion*: In individuals with chronic low back pain, isometric back endurance exercises were found to be beneficial in decreasing pain and disability while also increasing back extensor endurance.

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Three-dimensional conformal radiotherapy to hepatocellular carcinoma associated portal vein tumor thrombosis: Safety profile and toxicity

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In this study we aimed to determine safety profile and acute side effects of three-dimensional conformal radiotherapy (3DCRT) to portal vein tumor thrombus (PVTT) in cases of hepatocellular carcinoma (HCC). Thirty four consecutive patients were enrolled from Jan 2018 till Feb 2020; thirty of them fulfilled criteria for final analysis. Patients received 45Gy in 25 fractions to planning target volume (PTV). The median overall survival of the studied patients was 8.0 months. Responders had significant longer survival than non-responders (12 and 6 months respectively). No treatment related Grade 4 - 5 toxicity was observed. Only one patient (3.3 %) developed grade 3 elevation of bilirubin. Grade 1 nausea/vomiting were the most common side effect, it occurred in 22 patients (73.3%). Patients who didn't develop liver enzymes elevation, leukopenia or thrombocytopenia had better response and survival than patients who developed higher grades of toxicity. In addition to its survival benefit; 3DCRT to PVTT in cases of HCC is well tolerated with favorable toxicity profile.

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Evaluation of medical parasitology learning activity in undergraduate medical and nursing students at Universitas Padjadjaran

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As a tropical country, the incidence of infectious diseases caused by parasites in Indonesia is still high. Therefore, local medical and nursing students need to be equipped with adequate knowledge of medical parasitology. Considering that education is affected by several variables, summative evaluation at the final examination seems unable to demonstrate the clear effect of learning experiences on the level of students' comprehension. Consequently, a study was conducted using pre- and post-test scores to determine the degree of comprehension after learning medical parasitology of undergraduate medical and nursing students at the faculty of medicine and nursing, respectively, at the Universitas Padjadjaran. A cross-sectional design was used focusing on secondary data, which included 1,271 samples from pre- and post-test scores from medical parasitology lectures and laboratory activities at the university. A paired *t*-test and an alternative Wilcoxon signed-rank test were used to analyze the data. The comparison analysis of post-test and pre-test scores in laboratory activities showed a significantly increase in the classes of 2015 (40.70 vs. 85.78; $p<0.001$), 2016 (46.11 vs. 88.17; $p<0.001$), 2017 (50.00 vs. 92.86; $p<0.001$), and 2018 (39.13 vs. 90.48; $p<0.001$). Similarly, following a lecture on nematode and cestode, the scores increased significantly in the classes of 2017 (14.29 vs. 52.38; $p<0.001$) and

2018 (33.33 vs. 90.48; p<0.001). Furthermore, there was a significant score increase after the protozoa lecture in the 2018 class (26.67 vs. 86.67; p<0.001). This study found that both lectures and laboratory activities at the Universitas Padjadjaran improved the students' understanding of medical parasitology.

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Neonatal pneumothorax in association with APGAR score: A systematic review and meta-analysis

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Introduction: Pneumothorax (PTX) is a potentially fatal condition that primarily affects neonates. Premature babies are more likely to have underlying lung diseases, such as respiratory distress syndrome (RDS), which increases the risk of air leakage. *Methodology*: This was a systematic review and meta-analysis to estimate the association between neonatal PTX and Apgar score. A systematic electronic search was implemented through Google Scholar, PubMed, Web of Science, Science Direct, and EBSCO to include the eligible studies. *Results:* A total of 5 studies were included, with 357 patients (135 cases and 222 controls). The estimated association between the 5-minutes APGAR score and Neonatal PTX was [SMD=-0.91, (95% CI; -1.49, -0.33), P=0.002] and [SMD=-0.71,(95% CI; -1.01, -0.40), P=0.000] with the 1-minute APGAR score. *Conclusion*: We demonstrated a significant association between 1-minute and 5-minutes APGAR scores and neonatal PTX. The highest risk was found among neonates admitted to the ICU and those with persistent PTX.

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Prevalence of abnormal pulmonary functions in Parkinson's disease and its correlation to the disease severity and quality of life

Mohammed Elsherif, Asem Abdelhamid Hewidy, Tamer Elhadidy, Ahmed Esmael, Mohamed Elsayed Flifel

Purpose: To know the effects of Parkinson's disease (PD) on pulmonary function parameters and the extent of this on the severity of the disease and quality of life to give more understanding of the nature of the disease and its effects. *Methods*: The study conducted at the neurology and chest departments of Mansoura university hospital, Egypt. The PD patients were subjected to pulmonary function tests, measurements for the strength of the respiratory muscles with their correlation with scales for quality of life (QOL) in PD and motor function. PD divided into 2 groups' normal pulmonary function (NPF) and abnormal pulmonary function (APF). *Results*: Fifty-two participants and the most common causes for APF (n =16) were restrictive (43.75%) and obstructive (25%). The APF patients showed a lower FEV1/FVC, FEV1and MEF50 and a high correlation with UPDRS total, modified H&Y, and S&E ADL. FEV1, FVC, PEF, and FEF25-75% showed a significant inverse correlation with bradykinesia. There was a significant inverse correlation between rigidity and these specific parameters FVC and PEF. MEP, FEF25-75%, and PEF associated with significant inverse correlations and UPDRS-III scores. Mobility domain scores correlated inversely with certain pulmonary functions MEP, FVC, PEF, and FEV1. *Conclusion*: There is an impairment of certain pulmonary function tests and respiratory muscles power in PD patients. Rigidity and bradykinesia showed the strongest association with the deterioration of those variables. All these abnormalities alter the quality of the daily activities of PD patients.

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Knowledge, attitude and practice of bariatric surgeries among Saudi population: A cross sectional survey

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Background: Obesity is a major community health problem worldwide including Saudi Arabia due to its high morbidity and mortality rates. About one third of the Saudi community has obesity. *Objectives*: To assess knowledge, attitude, and practice of Saudi population towards bariatric surgeries, determine the prevalence of these surgeries among population and identify side effects and factors affecting them. *Methods*: A cross-sectional study using a structured pre-coded closed-ended, pilot tested online questionnaire was used, which include demographic data, medical history, knowledge, attitude, and practice of bariatric surgeries targeting male and female Saudi participants aged more than 18 years. Descriptive statistics and a univariate analysis were used. Multivariate analyses forwarded stepwise method was conducted. *Results*: Mean knowledge score percent was 76.3% (22.28). Those with satisfactory knowledge have worse medical history (54.1%, p=0.035), more significant attitude aspects; with their overall score of 71.7% (p=0.012). Significant independent predictors of bariatric surgeries were age (adjusted OR=2.5, 95% CI=1.3, 5.9), work status (adjusted OR=1.6, 95% CI=1.1, 2.6), marital status (adjusted OR=3.3, 95% CI=1.6, 8.8), and BMI (adjusted OR=2.1, 95% CI=1.3, 3.5). *Conclusion*: Obesity is a major health problem accompanied by many hepatics, gastrointestinal, respiratory, and cardiac complications. Elective bariatric surgeries are the solutions selected by more than half of cases. Nevertheless, Saudi populations' KAP towards bariatric surgeries regarding benefits, complications, indications, modalities are still unfavorable.

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Thyroid status among children with psychiatric disease, in Tabuk City, the Kingdom of Saudi Arabia

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Background: The association between thyroid dysfunction and psychiatric disease is well studied. However, the literature regarding the association among children lacks. No researchers have investigated the same in Saudi Arabia. Therefore, this study aimed to investigate hypothyroidism and hyperthyroidism among children with psychiatric disease. *Methods*: This case-control study was conducted among 347 participants (100 children and 108 adults with psychiatric disease, and 139 healthy controls) at Alamal Hospital in Tabuk City, Saudi Arabia during the period from June 2020 to December 2020. All the participants (and the parents if applicable) signed written informed consent. A structured questionnaire was used to collect demographic data if already diagnosed with thyroid disease, the type of psychiatric and thyroid disease, family history of thyroid dysfunction and psychiatric disease if the thyroid disease was detected before the psychiatric abnormality, the subjective improvement of psychiatric disease after the introduction of thyroxine. *Results*: Thyroid disease was higher among children (37% vs. 14.4%, odd ratio, 3.49, 95% *CI*, 1.87-6.52) and adults with psychiatric disease (48.1% vs. 14.4%, odd ratio, 5.52, 95% *CI*, 3.02-10.12 (P-values<0.001). No significant statistical was found between children and adults with psychiatric disease (37% vs. 48.1%, P-value, 0.069, odd ratio, 0.63 95% *CI*, 0.36-1.10. Thyroid symptoms started before psychiatric disease in children compared to adults (65.8% vs. 32.4 %). *Conclusion*: Thyroid disorders were higher among patients with psychiatric disease, with no differences between children and adults. Further larger multicenter studies investigating thyroid disorders among individual common psychiatric diseases are recommended.

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Is hypercholesterolemia adequately covered in medical schools? A cross-sectional study on knowledge levels among Saudi medical students

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Background: Cholesterol is a fatty substance that is essential to performs several functions in the body. Hypercholesterolemia is a term prescribing the presence of high levels of cholesterol in the blood. It is a major risk factor for coronary heart disease (CHD) and stroke. CHD is the most common cause of mortality and morbidity worldwide. The goal of this research is to assess knowledge levels regarding hypercholesterolemia and its complications among medical student in Riyadh. *Methods:* Cross-sectional study design by using an anonymous questionnaire distributed in soft copy to a sample of 417 medical students in Riyadh, Saudi Arabia. The questions are based on the basic principles and knowledge that a person should know about hypercholesterolemia. The questions were simple and direct to remove any biases in conducting the survey and rule out any blank or false answers. *Results:* The study sample included 417 medical students (42%) females and 58 % males). The majority of the participants were Saudi (99.3%). (44.8%) of students' family members had cholesterol history. (61.3%) reported that they did not know about the level of triglyceride. (57.6%) reported that they did not know about the level of LDL. *Conclusion:* Our survey shows there is a lack of knowledge about normal range of cholesterol levels. There is a visible lack of knowledge regarding cholesterol-related cardiovascular complications, even though the majority of our sample reported a positive family history of hypercholesteremia. Future research should focus more about ways to increase the knowledge about cholesterol normal levels and complications and how does it relate to family history.

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Ultrasound measured collapsibility of inferior vena cava comparison with central venous pressure in critically ill patients

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Objective: In critically ill intensive care unit patients, the link between central venous pressure (CVP) readings and ultrasound measurements of the inferior vena cava diameter and collapsibility index was investigated. *Methods*: This prospective, observational study included 90 patients aged 18 to 65 years of either sex, ASA II-III, admitted to the ICU (intensive care unit) of ALzahraa teaching hospitals with a working central venous catheter implanted for any clinical indication. Hemodynamic measurements were taken on a regular basis, such as non-invasive mean arterial blood pressure. When the CVP (central venous pressure) measurements were performed, the patient was in a supine position. The maximum and minimum collapsibility indexes are then determined using ultrasonography to measure the diameter of the IVC (inferior vena cava). The association between CVP and the IVC collapsibility index was assessed using Spearman's correlation coefficients. *Results*: In our study, there was a significant correlation between CVP and the two studied ultrasound parameters, IVC CI and IVCdmax. According to the receiver operating characteristic curve (ROC), the inferior vena cava collapsibility index (IVC CI) had the best performance of the two ultrasonography measures in predicting CVP 10 cm H2O, according to the receiver operating characteristic curve (ROC). *Conclusions:* The collapsibility index of IVC and CVP were discovered to have a strong negative connection in this study. This finding suggests that the IVC collapsibility index could be used instead of CVP to determine the intravascular volume status.

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The perineural injection and double perivascular infiltration techniques in ultrasound -guided axillary brachial plexus block: A comparison study

Luay Talib Abdulmunem, Mohammad Asi Jabbar, Mortada Abd Al-Hussian Jubara

Background: Axillary brachial plexus block is widely used regional anesthesia technique for surgical procedure involving upper limbs. Ultrasound-guided Axillary Brachial Plexus Block (ABPB) provided the same fate and complication rates like nerve

stimulation option. *Aim of the study*: To compare the two techniques of double perivascular injection with the perineural method for axillary brachial plexus block, all guided by ultrasound using compare performance time, number of needle passes, complications, onset time, and success rate. *Patient and method*: A randomized clinical trial study conducted in the Orthopedics operating for a period of six months from July 2020 to June 2021. It included 60 adult patients scheduled for hand or wrist surgery with axillary brachial plexus block and randomly managed by either perineural or double perivascular infiltration techniques. *Result*: In this study, no difference among success rate duration of action and induction time were significantly longer in perineural group than that in double perivascular group. Proportion of patients that blocked by perineural procedure was significantly higher than double perivascular procedure. *Conclusion*: Both double perivascular and perineural ultrasound-guided ABPB are approximately having the same success rate. Double perivascular is less time consuming than perineural that may make it as alternative method.

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CASE REPORT

Garcin syndrome: A rare complication of rhinocerebral mucormycosis in post covid patient

Sanyukta Hepat, Abhijit Wadekar, Aditi Goyal, Samarth Shukla, Sourya Acharya, Sunil Kumar

Rhino cerebral mucormycosis (RCM) is now one of the rapidly emerging opportunistic, destructive and angioinvasive fungal infection with a very high mortality and morbidity. Early diagnosis of this condition is difficult as there are lacks of specific clinical features or manifestations. Garcin syndrome is more often caused by skull base and rhinopharyngeal tumors or metastases, and basal meningitis. Here we report an elderly female who was post covid status and presented with rhinocerebral mucormycosis and went on to develop garcin syndrome.

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ANALYSIS

Comparing clinical requirements for oral and maxillofacial surgery among undergraduate Saudi dental colleges

Reem Almalki, Reem Al Oboud, Ghaida Aljammaz, Sondus Baghdadi, Hadeel Albarkheel, Mohammad Awawdeh

Aim: This study aims to evaluate the current status of the Saudi undergraduate training in Oral and Maxillofacial Surgery in Saudi dental colleges, through comparing the clinical requirements performed by the undergraduate dental students. *Methodology*: Observational cross-sectional study was conducted through survey based structured interviews; developed and validated by the research team. Each interview was conducted through two calibrated interviewers to minimize human error. The interviews were a minimum of one to three students meeting the selection criteria. The question matrix inquired about teaching methods, students-staff ratio, requirements, and competency exams. *Results*: Descriptive statistical analysis was used to present the data in tables and graphs. Significant differences were observed in requirements and competency exams. Out of the 25 dental schools, 20 have responded with a sample size of 110 participants. 8 out of the 20 schools adopted comprehensive care clinics. The clinical hours ranged from 3 to 12 hours per week. Only 1 college exceeded the accepted student- staff ratio which was more than 20 students per one faculty. Requirements varied significantly; some schools required a minimum of 1 extraction while others required 20 extractions per year. Moreover, surgical extraction requirements were only mandatory in 5 colleges with the range of 1 to 7 surgical extractions. Competency exams were not required in 2 dental colleges. *Conclusion*: There are significant differences in the clinic type, requirements, and assessment tools among colleges that might influence the graduates' competence and experience level. Moreover, this might introduce bias between graduates of different colleges.

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