

Medical Science

About the Cover



Background: Cerebral chronic white matter (WM) microangiopathy is common with ageing and vasculopathy. It is known to be better detected on magnetic resonance imaging (MRI) compared to computed tomography (CT). **Objective:** To determine the detectability of WM microangiopathy on CT compared to MRI; utilizing a subjective visual approach. **Material and Methods:** A retrospective chart review was done in a private Jeddah's hospital during 2020/2021. Four months of a local teleradiology practice archive was assessed for patients more than 40 years old who underwent both MRI and CT simultaneously. Those with known acute or other WM non-macroangiopathic findings were excluded. Detectability, size and location of supratentorial chronic WM changes were recorded for MRI and CT, considering MRI as the gold standard. Locations were categorized as periventricular, deep, juxtacortical and combination of all regions. Variable degrees of concordance between MRI and CT were assessed. Statistics were expressed in frequency distributions and mean \pm standard deviation. Comparison of categorical data by Fisher's exact tests and between means by Mann Whitney U non-parametric test were performed (i.e., significant if P - values < 0.05). **Results:** A total of 35 cases were studied (62.9% males; mean age 40 ± 4.6 years). WM changes were present in 77.1% on MRI and 45.7% on CT. MRI WM changes were seen in all WM locations in 34.3% and in a juxtacortical site in 20%. CT WM changes were seen in all WM locations in 20%, and in 8.6% in each of deep and in juxtacortical WM in 8.6% locations. MRI and CT complete concordance were noted in 31.4% of cases. In 20% of cases, MRI changes were more severe. Discordance was partial and 17.1% and complete and 31.4% of cases. Smaller lesions were missed more commonly CT, primarily were located in the juxtacortical region. **Conclusion:** Subjective visual approach for detection of WM microangiopathy is more reliable on MRI compared to CT imaging, despite CT ability in detecting such changes and a reasonable number of cases. The most challenging location to identify chronic WM microangiopathy on CT is juxtacortical, especially with smaller lesions. Such knowledge has therapeutic and prognostic applications and serves as the basis for future studies. (Ref: Ajlan AM, Eskander AA, Alhazmi TA, Ibrahim NK, Abduljabbar A, Wazzan M, Khashoggi K, Ahmad R, Elkashty AE. Detectability of cerebral chronic white matter microangiopathy on CT compared to MRI: A teleradiology study. *Medical Science*, 2021, 25(111), 1044-1051).

ANALYSIS

Validity of pleurodesis with bleomycin by pigtail versus chest tube in malignant pleural effusion

Ehab Sobhy, Saad Rabie Samra, Abdallah I Badr, Ahmed MA Bakry, Gaser Ali

Background: Pleural drainage is the preferred treatment for patients with symptomatic malignant pleural effusion. Insertion of a large bore chest tube for drainage prior to chemical pleurodesis is a standard treatment procedure. Small sized catheters (pigtail) are another option. However, for use in pleural drainage and pleurodesis, the optimal size of chest drains is still debatable. *The aim of the study:* Comparing the consequences and efficacy of bleomycin in pleurodesis using small sized pigtail (10-12 Fr) versus chest tube (24-30 Fr) in malignant pleural effusion. *Patients and methods:* A total of 130 patients with malignant pleural effusion were enrolled in this study. The patients were divided into two categories, Group A: a small sized pigtail catheter (10-12 French) was used in 72 patients and group B: a chest tube (24-30 French) was used in 58 patients. Male patients were 19 in group A and 18 in group B, with nearly same age range (51-67) and (55-70) year, respectively. All patients with manifested coagulopathy, loculated effusion or serious comorbidity were excluded. *Results:* Comparative results found that lung cancer was the main cause in both groups: adenocarcinoma 38.9 % in group A and 37.9 % in group B, followed by squamous cell carcinoma 11.1 % versus 6.9 %, respectively. Most body cancers were presented in both groups except stomach cancer was 0 % in both groups. Total success was slightly higher in group A 75 % compared to 72.4 % in group B but not statistically significant. Total hospital stay, postoperative pain score and dyspnea incidence were significantly less in group A where small pigtails were inserted. *Conclusion:* The chemical pleurodesis with bleomycin using small pore catheter (Pigtail) in MPE management is more effective, more patient- tolerable, than chest tube method. It is recommended to use of the pigtail drainage system rather than a chest tube in the treatment of MPE.

Medical Science, 2021, 25(111), 1020-1027

CASE REPORT

A complex case of prosthetic joint infection post total knee replacement: A case report

Riddhi Jain, Anushree Pawar, Pratik Phansopkar, Om C Wadhokar, Neha Chitale

One of the strongest and most complicated joints in the body is the knee. The knee connects the bone of the thigh (femur) to the shin bone (tibia). The other bones that form the knee joint are the smaller bone that runs alongside the tibia and the knee cap. Surgical site infection is a serious complication following total knee arthroplasty leading to considerable morbidity. The incidence is reported to be up to 2%. Prompt physical therapy leads to achieve functional goal. The prosthetic failure or infections commonly seen which is characterized by pain in the joint oozing from the joint which then then treated surgically followed by a well-planned physical therapy rehabilitation program including pain reduction, strengthening, stretching, and mobilization in the later period to avoid adhesion formation which may in term lead to restricted joint play educating the patient about the condition and prevention of secondary complication plays an important role as ignoring such important point may lead to complication in future. A 50 year old man came with discharge from his right knee. It was diagnose on x-ray. The patient was present with pain and was unable to walk and sit. Planned physical therapy program with education regarding the condition along with medical management showed good results.

Medical Science, 2021, 25(111), 1028-1032

ANALYSIS

***Echinacea purpurea* root extract modulates diabetes-induced renal dysfunction in rats through hypoglycemic, antioxidants, and anti-inflammatory activities**

Zuhair M Mohammedsaleh, Haya MA Aljadani

Introduction: Diabetes (DIAB)-related renal dysfunction is one of the most severe complications of the condition, which comes to an end with chronic renal failure. *Aim:* This study aimed to examine if *Echinacea purpurea* (*E. purpurea*) root extract could help protect kidneys from damage caused by DIAB in rats. *Methods:* DIAB was induced in four experimental rats groups (n = 10) by injecting STZ (65 mg/kg). One of the DIAB groups was left untreated, and the other three groups were treated with either *E. purpurea* root extract alone (200 mg/kg), metformin (Met) alone (200 mg/kg), or both together. A group of healthy rats (control) was also used for comparison. *Results:* In contrast to the DIAB group, *E. Purpurea* root extract alone and combined to Met improved body weight, kidney index, kidney function (creatinine and urea), and renal pathology. Compared to the DIAB group, the ingestion of *E. purpurea* extract alone or in combination with Met reduced blood glucose levels, bringing them back into the normal range in the combination group and ameliorating hemoglobin A1c(HbA1c) levels. The extract group's antioxidant effect was clearly demonstrated by the decreased malondialdehyde (MDA) and increased superoxide dismutase (SOD) kidney concentrations in the extract group alone or in combination with Met where the combination showed superior activity. The extract group's anti-inflammatory effect was observed from the reduced serum levels of interleukin 1 β (IL-1 β) and IL-6 in the extract group alone or mixed with Met, where the mixture showed a better action. *Conclusion:* In rats, *E. purpurea* root extract ameliorated DIAB-related nephrotoxicity induced by STZ. The hypoglycemic, antioxidant, and anti-inflammatory properties of the extract may be the underlying mechanisms.

Detectability of cerebral chronic white matter microangiopathy on CT compared to MRI: A teleradiology study

Amr M Ajlan, Ayman A Eskander, Turki A Alhazmi, Nahla Khamis Ibrahim, Ahmed Abduljabbar, Mohammad Wazzan, Khalid Khashoggi, Rani Ahmad, Ayman Esmaeil Elkashty

Background: Cerebral chronic white matter (WM) microangiopathy is common with ageing and vasculopathy. It is known to be better detected on magnetic resonance imaging (MRI) compared to computed tomography (CT). *Objective:* To determine the detectability of WM microangiopathy on CT compared to MRI; utilizing a subjective visual approach. *Material and Methods:* A retrospective chart review was done in a private Jeddah's hospital during 2020/2021. Four months of a local teleradiology practice archive was assessed for patients more than 40 years old who underwent both MRI and CT simultaneously. Those with known acute or other WM non-macroangiopathic findings were excluded. Detectability, size and location of supratentorial chronic WM changes were recorded for MRI and CT, considering MRI as the gold standard. Locations were categorized as periventricular, deep, juxtacortical and combination of all regions. Variable degrees of concordance between MRI and CT were assessed. Statistics were expressed in frequency distributions and mean \pm standard deviation. Comparison of categorical data by Fisher's exact tests and between means by Mann Whitney U non-parametric test were performed (i.e., significant if P - values < 0.05). *Results:* A total of 35 cases were studied (62.9% males; mean age 40 ± 4.6 years). WM changes were present in 77.1% on MRI and 45.7% on CT. MRI WM changes were seen in all WM locations in 34.3% and in a juxtacortical site in 20%. CT WM changes were seen in all WM locations in 20%, and in 8.6% in each of deep and in juxtacortical WM in 8.6% locations. MRI and CT complete concordance were noted in 31.4% of cases. In 20% of cases, MRI changes were more severe. Discordance was partial and 17.1% and complete and 31.4% of cases. Smaller lesions were missed more commonly CT, primarily were located in the juxtacortical region. *Conclusion:* Subjective visual approach for detection of WM microangiopathy is more reliable on MRI compared to CT imaging, despite CT ability in detecting such changes and a reasonable number of cases. The most challenging location to identify chronic WM microangiopathy on CT is juxtacortical, especially with smaller lesions. Such knowledge has therapeutic and prognostic applications and serves as the basis for future studies.

Medical Science, 2021, 25(111), 1044-1051

Acceptance of mHealth technologies among Auxiliary Nurse Midwives in Andhra Pradesh, India: A mixed method study

Prakash Babu Kodali, Shankar Das

Introduction: Frontline health workers such as auxiliary nurse midwives (ANMs) play an important role in implementation of mHealth programmes. Despite their extensive engagement, limited published studies examined mHealth acceptance among Indian ANMs. *Materials and Methods:* A mixed methods study was conducted to examine the acceptance of mHealth technologies by ANMs in Andhra Pradesh, India. A survey of 272 ANMs and 21 in-depth interviews (12 ANMs and 9 Planners) were conducted. Statistical analysis and thematic analysis were employed to analyse quantitative and qualitative data respectively. *Results:* 56.3% of ANMs had low acceptance of mHealth. Perceived usefulness, results demonstrability, and technical competence etc., are significantly predicted ANMs acceptance of mHealth. Additionally, government prioritization of mHealth, dynamic mHealth environment and existence of multiple data systems influenced mHealth acceptance of ANMs. *Conclusion:* Our study is among the early studies in India which examined acceptance of mHealth health technologies implemented as state run programmes. It identifies several actionable dimensions which impact the acceptance of mHealth technologies among frontline health workers like ANMs.

Medical Science, 2021, 25(111), 1052-1060

"Medical Student Syndrome" in Vietnamese psychology students

Thuy-Trinh Ngo-Thi, Gia-Phuoc Tran-Thien, Nhu-Thuyen Dang-Thi, Vinh-Long Tran-Chi

Medical student syndrome is related to health anxiety and the amount of specialized knowledge of students. This study conducted to examine medical student syndrome on Vietnamese psychology students when they are studying courses related to clinical psychology and psychotherapy. This study used Medical Students Syndrome Questionnaire including 5-item Medical Students' Disease Perception Scale and 5-item Medical Students' Disease Distress Scale, and Health Anxiety Questionnaire to survey 249 psychology students from the Ho Chi Minh University of Education and The University of Danang – University of Science and Education in Ho Chi Minh City and Danang City, Vietnam. The findings of our study showed that the number of clinical courses had predictive power on Medical student syndrome. Students participating in more than one clinical course were more likely to increase distress. Besides, the results also indicated that Medical Students Syndrome and health anxiety were significantly and positively correlated.

Medical Science, 2021, 25(111), 1061-1070

Neonatal sepsis in association with birth weight, gestational age, and mode of delivery in Saudi Arabia: A systematic review and meta-analysis

Nazim Faisal Hamid, Muawia Elsayed Elkhider Ebrahim, Naif Mutkhan Tohaimer Alsharari, Alaa Saud M Alyasi, Mostafa Moheb Mostafa Rizk

Introduction: Neonatal sepsis is a worldwide health problem. Additionally, neonatal sepsis causes a great burden of morbidity and mortality in developing countries. *Methodology:* A systematic search in PubMed, Web of Science, Science Direct, and EBSCO

databases, was conducted. The reviewers screened the extracted literature to include the studies that met the inclusion criteria. *Results:* A total of 119 articles were reviewed, of which 4 study articles were included in this meta-analysis. We found that birth weight was not significantly related to the risk of neonatal sepsis (n=4; SMD -0.68; 95% CI [-0.89, -0.46]). Gestational age did not have a significant effect on the rate of occurrence of neonatal sepsis (n=3; SMD -0.17; 95% CI [-0.41, -0.06]). Vaginal delivery mode is associated with lower incidence of neonatal sepsis (n=3; OR 0.61; 95% CI [0.36, 1.03]). The cesarean section was associated with a higher incidence of neonatal sepsis (n=3; OR 2.13; 95% CI [1.23, 3.70]). *Conclusion:* This study found that both neonatal and maternal factors as potential independent risk factors to have an association with the risk of neonatal sepsis. We also observed that birth weight, gestational, and vaginal deliveries are not associated with a higher risk of neonatal sepsis, while cesarean delivery was associated with greater risk.

Medical Science, 2021, 25(111), 1071-1079

CASE REPORT

Management of deciduous molar with missing permanent successor – A case report

Niharika Gahlot, Arun Sajjanar, Milind Wasnik, Sneha Khokade, Nilesh Rojekar, Harshita Shukla

Deciduous teeth are present in the oral cavity for limited period of time, normally they exfoliate and the successor teeth attain their respective position in the oral cavity. Two-third of root is resorbed physiologically and then it exfoliates. But in the tooth without permanent successor this process is bit slower as compared to the teeth with permanent successor. Therefore, execution of treatment planning differs in both the cases. This case report explains one of the treatment plan related to the management of missing permanent successor.

Medical Science, 2021, 25(111), 1080-1083

Plexiform neurofibroma: An Arduous entity

Ayushi Singh, Anil Agrawal, Sunita Vagha

Plexiform neurofibroma being the uncommon variant of neurofibroma generally involves head and neck region. It arises from the proliferation of all neural elements. Presence of this tumor at lower extremity is highly uncommon and involves lots of complications. In this study we have taken highly vascular nature of the tumor in consideration and done prior histopathological confirmation along with immunohistochemistry marker to confirm the diagnosis. Proper prior examination involved radiological screening and colored Doppler investigations. Previous failed surgery of patient marked into the importance of present concern regarding the surgery. Uncommonly, a plexiform neurofibroma may change into a cancer, called a malignant peripheral nerve sheath tumor (MPNST). There are no reliable tests to screen for an MPNST. Thus surgery was performed and specimen has been sent to histopathology. Diagnosis was confirmed with the help of IHC and patient was discharged after recovery from surgery.

Medical Science, 2021, 25(111), 1084-1087

Angioinvasion of anterior cerebral artery by rhinocerebral mucormycosis leading to intraparenchymal hemorrhage: A rare case report

Sameera Dronamraju, Shubham Nimkar, Smita Damke, Sachin Agrawal, Sunil Kumar

Rhinocerebral mucormycosis leading to intraparenchymal bleed is a rare entity. The objective of this case report is to highlight this unusual incidence in a case of mucormycosis. We present a case of a 50-year-old man with typical signs and symptoms like headache, diplopia, nasal congestion, swelling and congestion of right eye, cerebral sinus venous thrombosis diagnosed as rhinocerebral mucormycosis and on further imaging of brain showing erosion of anterior cerebral artery leading to fatal intraparenchymal bleed. The clinician must be quick to diagnose and aggressively manage the condition with both medical and surgical therapies to salvage the life of the patient.

Medical Science, 2021, 25(111), 1088-1091

RESEARCH

Predicting early mortality in treatment of patients with acute infectious pancreatitis using two surgical strategies

Kryvoruchko IA, Sykal MO, Yevtushenko OV

Background: To determine the prediction of mortality and to develop a mathematical model of severe acute pancreatitis designed to predict early mortality in patients with secondary pancreatic infection. *Methods:* It study was based on data from comparing of severity scores for two surgical strategies in 103 patients who were operated with secondary pancreatic infection and the condition was assessed before surgery and after 48 hours using most significant indicators which are given nowadays the most attention worldwide. *Results:* According to the goals and objectives of the study all patients were divided into two groups: the main groups were 56 patients with secondary pancreatic infection, which used tactics of treatment step-up approach (after surgery 3 patients (5.3%) were died); the comparison groups were 47 patients with open surgical intervention (after surgery 7 patients (14.9%) were died). The main finding of this study was been that I-FABP, lactate, CRP, SBP and APP not only before surgery is superior in

predicting SPI in comparison to commonly used markers such as APACHE-II, SOFA scores, and serum PCT, IL-6 in 48 hours after ones. It well-known scores have not shown the ability to predict early mortality before surgery: APACHE II scores (AUC 0.558) and SOFA (AUC 0.734). These turned out to be: APP (AUC 0.81) and I-FABP level (AUC 0.881) most suitable for building mathematical prognostic model. *Conclusions:* The assessment of effective biomarkers has made it possible to personalize surgical tactics and improve outcomes of the treatment.

Medical Science, 2021, 25(111), 1092-1105

ANALYSIS

Comparison of del Nido Cardioplegia and blood Cardioplegia in isolated CABG patients

Baburhan Ozbek, Mehmet Coskun Aykac

Introduction: Effective myocardial protection ensures safe operation during cardiac surgery. In this study, blood cardioplegia, which is the most preferred myocardial protection method in isolated coronary artery bypass grafting (CABG) operations, was compared with del Nido cardioplegia. *Material and Method:* Patients who underwent isolated CABG operation in our department between 04.01.2018- 06.30.2019 were analyzed retrospectively. The patients using blood cardioplegia constituted Group 1; whereas the patients using del Nido cardioplegia were in Group 2. *Result:* Isolated CABG was performed in 57 patients during the study period and all of the patients were over 35 (36-81 years). There were 32 patients (56%) in Group 1; and 25 patients (44%) in group 2. The duration of aortic cross-clamp and cardiopulmonary bypass were significantly higher in Group 1 ($p= 0.009$, $p= 0.012$). *Discussion:* Although the use of del Nido cardioplegia has shortened the duration of aortic cross-clamp and cardiopulmonary bypass, this positive effect was not reflected in postoperative variables. More comprehensive studies comparing myocardial protection methods are needed to fully evaluate this effect.

Medical Science, 2021, 25(111), 1106-1110

Identification of novel leads against Cystalysin of *Treponema denticola* to combat Periodontitis: A computational approach

Mahvish Khan, Saif Khan, Khurshid Ahmad, Mohtashim Lohani, Shafiu Haque, Hazza A Alhobeira, Ammar A Siddiqui, Shadab Mirza, Arshad Hussain

Present study attempts to determine efficient biogenic leads against proteolytic enzyme Cystalysin of *Treponema denticola*, a red complex pathogen, responsible for periodontitis. Cystalysin is known to play central role in the occurrence and progression of chronic generalized periodontitis. The method involves the preparation of library of compounds having biogenic origin from a large database of known compounds (ZINC). High throughput screening of 308035 compounds in the biogenic library was done to determine the top 100 best inhibitors depending on their binding efficiency. Top five Inhibitors were then subjected to exhaustive docking refinement to characterize the type and degree of interactions. Top inhibitors were found to undergo multiple hydrogen bonding and pi-anion interactions with active site residues critically important for the proteolytic activity of the enzyme. These inhibitors efficiently block the proteolysis due to Cystalysin and hence restrict the progression of periodontitis. Favorable ADMET properties of these ligands approve them to be used as potential drug like molecules against periodontal infections.

Medical Science, 2021, 25(111), 1111-1116

CASE REPORT

Physical and psychological response to physical rehabilitation in Coronavirus Disease-19 patient: A case report

Ahmed Abdelmoniem Ibrahim, Hisham M Hussein, Hamad Ali Hakami, Saud M Alrawaili, Gopal Nambi, Walid Kamal Abdelbasset

Corona virus disease-19 (COVID-19) has affected people of various age groups with symptoms ranging from asymptomatic mild, moderate to severe symptoms. Patients with mild symptoms require no medical intervention whereas moderate or severe symptoms require hospitalization and medical management. The following case report discusses the recovery of a COVID-19 patient with moderate symptoms. In a COVID dedicated tertiary care hospital in Ha'il region, Saudi Arabia. Physiotherapy has a great role as a part of a multidisciplinary team in the management of patients with respiratory and physical problems. The report mainly presents the impact of the physiotherapy role in the recovery of the patient and improving his physical and psychological status.

Medical Science, 2021, 25(111), 1117-1122

ANALYSIS

Medical specialty students' perceptions, experiences, and barriers regarding online learning: A cross-sectional study during the covid-19 pandemic

Shaimaa Abdalaleem Abdelgeleel, Dalia Negm Eldin, Mahmoud Abdel Hameed Shahin

Objective: To investigate medical specialty students' perceptions, experiences, and barriers regarding online learning as a new direction for education after the novel coronavirus (COVID-19) pandemic in Egypt. *Methods:* This cross-sectional survey distributed a three-domain questionnaire focusing on perceptions, experiences, and barriers to physiotherapy students of the Egyptian Chinese University at the end of the second semester 2020/2021. *Results:* The study involved 413 students, with a mean age of 21.9 ± 1.4 years. The majority (90.1%) had access to a computer, and nearly all had internet access. The mean total scores for student perception and experience were 35.9 ± 9.2 and 45.6 ± 12.5 , ranging from 20 to 50 and 26 to 65, respectively. Students' perception and experience scores were affected by several factors, including sex, computer experience, and training for online courses. Students' most significant barrier was network problems (77.2%), followed by a lack of required skills (67.8%), costs (65.6%), lack of technical support (65.4%), and lack of motivation (62.7%). *Conclusion:* This research analyzed real-life experiences and identified how students' new experiences during the pandemic could be enhanced. Sex, computer availability, and training independently impacted students' online learning perception and experience scores. Network problems were the most significant barrier for students. Online learning experiences present challenges and opportunities during the pandemic. Instruction, encouragement, and better internet networks are ways to enhance online learning.

Medical Science, 2021, 25(111), 1123-1132

Willingness and preference for using telehealth services among patients with depression

Bayaneh Amini, Leila R Kalankesh, Reza Ferdousi, Mostafa Farahbakhsh, Farhad Fatehi

Background: Depression is a common mental disorder for which telehealth services can provide support. The willingness to use these solutions among patients is among factors related to the use of such solutions. The study aim was to investigate the willingness and preference of patients with depression for using telehealth solutions for depression. *Materials and Methods:* We conducted a cross-sectional study between beginning of April and end of August 2019. We administered a questionnaire to 146 people with depression. The sampling method in this study was non-probability. We assessed the Patients' willingness and preference for using telehealth services for depression based on a researcher-constructed questionnaire. *Results:* About 87.67% of the participants were women. The average age of participants was 29.62. Sixty participants (41.09%) reported using telehealth services for their mental health in the past. They highlighted reasons such as lack of enough time, not being able to afford the cost of a face-to-face consultation, fear of disclosure of the information about their face-to-face visit, lack of consent by a family member for a face-to-face visit, the likelihood of being seen by others in the health setting and possibility of stigma, and distrust of consultant for their preference. More than 58 % of the participants showed high and very high willingness to use telehealth consultations. Preference of patients with depression toward the functionality of mobile health (m-health) solutions for depression was the behavioral activation/behavioral goals monitoring (77.39%), followed by the communication with psychologists and mental health experts (50.68%) and monitoring changes in mood or behavior (36.30%). *Conclusion:* Given the relatively high willingness of patients with depression to functionalities for behavioral activation and communication with the therapists, it appears inevitable to develop a mobile app for meeting the patients' demands.

Medical Science, 2021, 25(111), 1133-1139

The effect of depression and life quality of geriatric diabetic patients on their glycemic control levels

Berna Nilgun Ozgursoy Uran, Funda Sofulu, Elif Unsal Avdal, Gulbin Konakci, Yasemin Tokem, Julide Gulizar Yildirim, Gizem Arslan

Objective: This study was aimed to determine the effect of quality of life and depression on the levels of glycemic control in geriatric diabetic patients. *Methods:* The sample of this analytical and descriptive study consisted of 138 geriatric diabetic patients over 65 years of age in 7 months. The sociodemographic form with 12 questions, Quality of Life Scale for Elderly People (WHOQOL-OLD) with 24 items and 4 subscales, Geriatric Depression Scale with 30 items, also patients' HbA1c, fasting plasma glucose and postprandial plasma glucose values evaluated with ADA Glycemic Control Evaluation Form. Ethics committee and institution application permissions were obtained. Verbal and written consents of the participants were obtained. *Results:* 55.8% of the participants were between the ages of 65-69. The half of the patients used only oral antidiabetic drugs and 31.2% of them used insulin. 38.4% of the patients had definite depression. 53.6% of participants had poor HbA1c levels, 69.6% had high fasting blood glucose values and 52.2% had poor postprandial blood glucose levels. The average score for quality of life was 72.88 ± 9.57 , which indicates a moderate quality of life. As their quality of life increased, the mean depression score of the patients decreased. There was also a positive correlation between HbA1c, fasting plasma glucose and postprandial plasma glucose values. *Conclusion:* As the patients' quality of life increased, their depression scores significantly decreased; however, their quality of life and prior depression didn't have an influence on the levels of glycemic control.

Medical Science, 2021, 25(111), 1140-1149

Effect of argan oil (*Argania spinosa*) on hypercholesterolemic male rats

Jamilah M Hashemi, Salma A Alahmari

Hypercholesterolemia is a metabolic condition that related to the occurrence of atherosclerosis and cardiovascular diseases. This research aimed to demonstrate the efficacy of argan oil in improving hypercholesterolemia in male rats. Forty male rats were randomly distributed into five groups (8 rats in each group); control; rats fed on normal rodent diet. The four remaining groups;

rats were fed on a high-fat diet (HFD) for eight weeks to produce hypercholesterolemia. Then, the hypercholesterolemic rats were classified as follows: HFD, HFD + argan oil (5 ml/kg), HFD + statin (40 mg/kg), as a reference drug, and HED + argan oil + statin. After 4 weeks, blood samples were taken for biochemical examination. A liver histological analysis was also carried out. The results showed that treatment of hypercholesterolemic rats with argan oil, statin and their mixture significantly improved biological evaluation, reduced the levels of total cholesterol (TC), triglyceride (TG), low-density lipoproteins cholesterol (LDL-C), and atherogenic index (AI), concurrent with a significant increase in the level of high-density lipoproteins (HDL-C) versus HFD group. Furthermore, there was a significant decline in liver enzymes level and a significant decrease in oxidative stress; malondialdehyde (MDA) level versus HFD group. The group which were fed on HFD resulted in accumulation of lipid droplets of various size in liver tissue compared to control group. Argan oil administration showed protection against lipid deposition similar to statin medication. Better protection result was observed in the group which received a mixture of statin and argan oil.

Medical Science, 2021, 25(111), 1150-1158

Prevalence and predictors of anemia among type 2 diabetic patients, single center study in Al-Madinah region, Saudi Arabia

Bayan Alalawi, Samyah Bukari, Yousef Al-Alawi, Raneem Alraheili, Rami Alharbi, Alaa Alraheili, Smaher Alhejaili, Salma Alalawi, Amerah Alalawi

Background: Anemia is severe and common in diabetic patients compared to nondiabetic. Patients with type II Diabetes Mellitus (DM) are twice more likely to have anemia than nondiabetic patients and it is considered as a key prognostic factor. Studies indicate that anemia may increase the risk for progression of micro-and macro-vascular complications. The aim of this study was to determine the prevalence and predictors of anemia among patients with type II DM. *Methods:* This is a cross-sectional study conducted at diabetic center attached to king Fahad hospital included 6877 patients with a diagnosis of type II DM during the period 1st of March 2009 till 31st of July 2019. Patients were divided into two groups based on the presence or absence of anemia. *Results:* Out of 6877 patients included in the analysis, 4299 (62.5%) were males, 2332 (33.9%) were obese, 4386 (63.8%) had poor control of DM, 3795 (55.2%) had normal eGFR, 4904 (71.3%) were on metformin, 3745 (54.5%) were on insulin. The prevalence of anemia was 30%. About 24.1% of the patients had mild anemia, 4.1% had moderate anemia, 1.5% had severe anemia and 0.3% had life threatening anemia. Multivariate analysis showed that female gender [OR, 2.7; 95% CI, 2.41-3.08; p<0.001], low eGFR [OR, 1.0; 95% CI, 0.97-0.97; p<0.001] were the predictors of anemia in type II DM patients. *Conclusion:* About 30% of patients had anemia. The predictors of anemia among type II DM patients were female gender and presence of advanced renal dysfunction. Early detection and treatment of anemia should be incorporated into the routine assessment of diabetic complications.

Medical Science, 2021, 25(111), 1159-1166

Interproximal caries assessment decision making and treatment among dental students and practitioners in Saudi Arabia

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Aim: This study aims to assess the knowledge and perception of dental students and practitioners. Moreover, to assess their restorative threshold, restorative technique, and knowledge of the materials used to treat interproximal caries in Saudi Arabia. *Materials and Methods:* A cross sectional study, directing dental students and practitioners in Saudi Arabia (n=400). Survey was conducted using an online questionnaire taken from Practice-Based Research Networks; it was distributed on Social Media platforms (Twitter, Snapchat and WhatsApp) for a period of 5 weeks, the study duration was between October and November 2019. Data analysis was done using (IBM-SPSS, Armonk) version 25. Ethical approval was obtained prior to survey distribution (ethical approval code: RC/IRB/2019/271). *Results:* Carious lesions reaching the [dentinoenamel junction (DEJ)] reported divergent treatment approaches in comparison to enamel caries. 40.8% suggested minimal intervention using [preventive resin restoration (PRR)], while 24.5% chose fluoride application and follow up rather than intervention and restoration placement. *Conclusion:* Decision making in restorative treatment of interproximal carious lesions showed noticeable variation depending on caries reaching the DEJ and at the surface of enamel. Cutting into lesions with radiolucency at the outer third of dentin seems to be the treatment of choice among dentists in Saudi Arabia.

Medical Science, 2021, 25(111), 1167-1172

Knowledge, attitude and practice of antibiotic use and misuse among adults attending Primary health care in Arar city, Saudi Arabia

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Background: Antimicrobials are the communal drugs used in the developing countries. The irrational use of antimicrobial drugs is a huge problem on national health system. *Objectives:* To assess the knowledge, attitudes and practices of patients regarding antibiotic use and misuse at Arar city, kingdom of Saudi Arabia. *Methods:* A cross sectional study will be conducted in 4 PHC centers out of 14 centers at Arar city, Northern Border Region, Saudi Arabia, between the 1st May 2019 and the 31th July 2019. The target population was patients attending in 4 Primary Health Centers. *Results:* Data of the present study showed a relatively good knowledge score (62.6±25.6) regarding the safe use of antibiotics in the populace. Only 56.6% of the applicants knew that antibiotics can cause allergic reaction may lead to death and 70.6% of them knew that it's not harmless to usage antibiotics during pregnancy and 62.8% knew that antibiotics are not safe during breast feeding. However, almost 60% of the applicants lacked the knowledge of safe practice of

antibiotics on children's teeth. Only 284 (59.3%) of our contributors had information about antibiotics resistant problem. As regards the attitude, about fifth (18.2%) of the applicants prefers to buy an antibiotic without a prescription. About quarter (22.1%) think that a good doctor depends on the antibiotic being prescribed. Regarding practice, only 10.9% of the contributors reported self-prescription of antibiotics, 5.2% reported pharmacist consultation, 5.4% reported family member advice and 78.5% reported the doctor's prescription as a source of antibiotics using. *Conclusion:* The current study showed a relatively good knowledge score, and bad attitude regarding the safe use of antibiotics among the population. Study results revealed good results regarding the source of antibiotics and self-medication. Increase the awareness of the public concerning the using of antibiotics and drug resistant strains is highly needed.

Medical Science, 2021, 25(111), 1173-1182

CASE REPORT

Intractable Singultus: Atypical presentation of COVID 19

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Singultus are involuntary manoeuvre that involve the reflex arc of swallowing and can be further divided into acute singultus (<48 hours) or persistent singultus (>48hours). We present a case series of three patients of different age groups who presented with the chief complaint of persistent hiccup not responding to treatment. Other than Hiccup which was episodic physical examination of the patient were unremarkable. However, Reverse Transcriptase Polymerase Chain Reaction for COVID-19 was Positive and High-Resolution CT Scan of the Chest was able to demonstrate Ground Glass Opacities scattered throughout the lung. The patients did not respond to primary treatment for hiccups and were treated with antiviral and other supportive measures. All the three patients recovered and were later discharged in stable condition. Thus, this case series showcases the importance of keeping COVID-19 as an important differential diagnosis of persistent hiccup to be prompt in reaching the diagnosis in this atypical presentation but to also be vigilant of unexpected exposure for the physician himself.

Medical Science, 2021, 25(111), 1183-1187

Case report of Inflammatory linear verrucous epidermal nevus (ILVEN): Sentence or surmountable difficulty?

Liliia Hulei

In this report, we describe a case of Inflammatory linear verrucous epidermal nevus (ILVEN) that clinically and histologically mimicked Blaschkoid (linear) lichen planus, linear psoriasis, and other linear dermatoses, for could be diagnosed by histopathologic findings. ILVEN is typically refractory to treatment, but accordingly the data of literature the various methods of cure were tried from treatment with the administration of calcipotriol, topical application of mometasone furoate 0.1%, combination therapy with topical tretinoin, 5-fluorouracil creams, crisaborole 2% ointment to invasive methods such as carbon dioxide gas laser, pulsed dye laser, UV 308-nm excimer laser. Consequently, the differential diagnosis between ILVEN and similar disorders are necessary to avoid applying an inadequate therapy.

Medical Science, 2021, 25(111), 1188-1194

Chronic pancreatitis with sinistral portal hypertension: A rare case report

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Due to its rarity as an etiology of massive upper gastrointestinal bleeding, left sided portal hypertension also known as "Sinistral portal hypertension" is often missed or diagnosed late. It often leads to isolated gastric varices which have a scope of different treatment modalities ranging from endoscopic, interventional radiological and surgical procedures. We report a case of 40-year-old male patient who was a case of chronic pancreatitis due to chronic alcoholism presented to us with history of massive hematemesis and black stools and was diagnosed as Left sided Portal Hypertension.

Medical Science, 2021, 25(111), 1195-1198

ANALYSIS

Adverse effects of methotrexate in gestational trophoblastic neoplasia treatment

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Objective: Identify the incidence and related factors of elevated transaminases in low-risk gestational trophoblastic disease patients treated with methotrexate. *Methods:* Prospective cohort. 163 patients were recruited with low-risk gestational trophoblastic disease, treated with methotrexate and folinic acid, from October 2019 to June 2020 at Tu Du hospital. Kaplan-Meier survival analysis is performed to determine the incidence of elevated transaminases over time. We apply Cox regression model in order to identify factors related to elevated transaminases and build a Nomogram to predict the risk of elevated transaminases. *Results:* The incidence of elevated transaminases is 28.83%. Out of 47 cases of elevated transaminases, 16 cases occurred after 1 cycle of treatment, 14 cases occurred after 2 cycles and 9 cases appeared after 3 cycles, and after 4, 5, and 6 cycles, there were only 4, 2, 1 cases of elevated transaminases, respectively. There were no cases after treatment cycle eighth and ninth. In patients with pre-

treatment aspartate aminotransferase (AST) > 25 UI/L, the risk of elevated transaminases is 2.29 times higher than in patients with pre-treatment AST < 25 UI/L. Based on Cox regression model, we built a Nomogram with 4 variables, including age, body mass index (BMI), pre-treatment AST, and pre-treatment alanine aminotransferase (ALT). *Conclusions:* The overall incidence of elevated transaminases is 28.83%, usually occurred within the first 3 to 4 treatment cycle. Pre-treatment AST is related to elevated transaminases.

Medical Science, 2021, 25(111), 1199-1205

Awareness of gastroesophageal reflux disease among health specialties students at Umm al-Qura University in Saudi Arabia

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Background: Gastroesophageal reflux disease (GERD) is a common chronic gastrointestinal disorder. It is defined as a condition in which reflux of gastric contents causing symptoms and complications. Heartburn is considered the classic and most common symptom of GERD. Our aim is to assess the awareness and knowledge of GERD among health specialties at Umm Al-Qura University (UQU), Makkah, Saudi Arabia. *Methods:* A cross-sectional survey was distributed among students of health-care specialties at UQU. The survey was made by Google forms and sent to the students through social media platforms. The survey contained 18 questions to assess the knowledge and awareness of GERD. *Results:* A total of 374 students participated in this study. The mean age of participants was 21.7, responders age was between 17 and 25. Among the 374 participants 280 (74.9%) have a good knowledge of GERD. College and academic level significantly affected the level of awareness of GERD ($p < 0.05$). *Conclusion:* Most of the students had a good knowledge regarding GERD. In addition, students in higher academic years have more knowledge of GERD. Further research can be undertaken to assess and compare the knowledge of postgraduate, students of other specialties and students at other universities on GERD.

Medical Science, 2021, 25(111), 1206-1212

Validity of pediatric appendicitis score in predicting disease severity in pediatric acute appendicitis

Nguyen Thanh Hiep, Nguyen Cong Minh

Objective: This study aims to evaluate the validity of Pediatric Appendicitis Score in predicting disease severity of acute pediatric appendicitis. *Methods:* We prospectively evaluated 120 children who underwent surgery for acute appendicitis. We enrolled them into two groups: uncomplicated appendicitis ($n = 86$) or complicated appendicitis ($n = 34$). We compared the age, blood test results, body temperature, hospital stay, number of complications, and pediatric appendicitis score between the two groups. We evaluated the diagnostic value (specificity, sensitivity, negative predictive and, positive predictive value), and value of the PAS to distinguish complicated from uncomplicated appendicitis. A receiver operating characteristic curve (ROC) was produced to find the appropriate cut-off value to distinguish complicated from uncomplicated appendicitis. To explore the severity of the disease, we divided the pediatric patients into two groups according to that cut-off value. *Results:* There were significant differences in the PAS score between uncomplicated and complicated appendicitis (5.7 versus 7.8). The ROC showed a PAS cut-off value of 8. A PAS ≥ 8 had a sensitivity of 73.1%, a specificity of 89.2%, a positive predictive value of 91.4%, and a negative predictive value of 68.5%. A PAS ≥ 8 was correlated with significantly more extended hospital stay and more complications than a PAS < 8. *Conclusions:* The pediatric appendicitis score (PAS) may be correlated with disease severity in acute pediatric appendicitis.

Medical Science, 2021, 25(111), 1213-1217

Study the therapeutic effect of capsule CTHePaB on nude mice carrying human hepatocellular carcinoma cells infected with hepatitis B virus

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Objective: To assess the effect the therapeutic effect of CTHePaB capsules on nude mice carrying human hepatocellular carcinoma cells (HCC) infected with hepatitis B virus (HBV). *Method:* Nude mice after HCC transplant Hep3B infected with HBV on the right thigh, appeared a tumor on the thigh on the 14th day of transplantation, had an average size of $74,6 \pm 14,3 \text{ mm}^3$, randomly divided into 2 groups of 15 rats each and randomly divided into 3 lots (5 mice / lot): in the control group, drink 0.9% NaCl solution; Treatment, oral dose of CTHePaB 0.96g / kg / 24h; Reference batch, oral dose of 5FU 10mg / kg / 24h. Give the rats the drug according to the above division for 4 weeks. Group 1 used to evaluate the effect of research drugs on tumor size, survival / death rate; Average lifetime of the mouse. Group 2, used for splenectomy to evaluate the density of some immune cells and the HBV-DNA quantification of tumor cells. *Results:* CTHePaB capsules reduced the average tumor size compared to the control group, equivalent to that of the group using 5FU at dose of 10mg/kg/24h; Limiting the death rate of mice at the evaluation points 70, 76, 85, 90 days after taking the drug compared to the control group and on 85, 90 days, compared with the reference group; increases average survival time of mice; Increased number of NK cells, Macrophage cells and DC cells in mouse spleen; Reduces the amount of HBV-DNA in mouse tumor cells. *Conclusion:* CTHePaB capsule with dose of 0.96g/kg/24h has good therapeutic effect, in nude mice carrying HCC infected with HBV.

Medical Science, 2021, 25(111), 1218-1224

Effectiveness of auricular acupressure and breathing exercises for smoking cessation

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Objective: To determine the effectiveness of auricular acupressure and breathing exercises in smoking cessation treatment and monitor their adverse drug reaction (ADR). *Methods:* We prospectively analyzed 60 patients in National Hospital of Traditional Medicine who were addicted to smoking between June 2020 and September 2020. This is a case-control study. Patients were enrolled into two groups: a case group, which was treated with auricular acupressure and breathing exercises (n=30); a control group which was only treated with auricular acupressure (n=30). The results between 2 groups after 28 days of treatment are compared based on many criterias which includes Symptoms of withdrawal syndrome, Mood and Physical Symptoms Scale (MPSS) and breathe carbon monoxide concentrations. *Results:* After 28 days of treatment, in the study group 63.3% of the cases were very good, 10% were good, 26.7% were ineffective; in the control group 46.7% of the cases were very good, 20% were good, 33.3 % were ineffective. *Conclusion:* Auricular acupressure combined with breathing exercises is better in improving symptoms of withdrawal syndrome (shortness, irritability, insomnia, cravings) and decreasing levels of CO in patients' breath after smoking cessation than cases using auricular acupressure only.

Medical Science, 2021, 25(111), 1225-1232

Awareness and practice regarding contact lens wearing and related complications among Jazan University students; Saudi Arabia

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Purpose: The aim of the study was to determine the knowledge, attitude and practice regarding contact lens wearing and to sketch out the common related complications among Jazan University students. *Method:* A cross-sectional questionnaire based study conducted among 440 Jazan university students. The questionnaire was structured to gather information related to the participants' socio-demographic data, level of knowledge and practice. *Results:* out of total (440 participants), 198 (45%) were using contact lenses, 184 (93%) were female and 14 (7%) were male. Total knowledge was excellent in (50%) of the participants with significant gender difference (P vale = 0.000). Cosmetic reasons were the indication for contact lens wearing in 67% of the participants, while therapeutic reasons were only indicated in 12% of them. 83.9% of the contact lens wearers exhibited excellent practice with hand hygiene and cleaning and 61.9% never or rarely shared their contact lenses with others. *Conclusion:* The prevalence of contact lens wearing was high among Jazan University students. The students have adequate knowledge and good practice regarding contact lens wearing. Even though, periodic eye check-up before contact lens wearing is still need to be reinforced.

Medical Science, 2021, 25(111), 1233-1240

Protective role of TD0014 against sodium valproate-induced reproductive toxicity in male wistar rats

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Sodium valproate (VPA), a common treatment of epilepsy and other diseases, is known to have severe toxic effects on testis both in experimental animals and in humans. This study was carried out to assess the protective activities of the TD0014 against sodium valproate (SVP)-induced reproductive toxicity in male rats. Animals were treated with TD0014 at the dose of 1.8 g/kg/day and 5.4 g/kg/day, and co-administered with SVP (500 mg/kg) for 7 weeks before all reproductive parameters were determined. The results showed all doses of TD0014 significantly protected the decrease testicular weight and testosterone level in SVP rats. TD0014 significantly improved the decrease sperm count and sperm motility in SVP treated rats. Moreover, testicular histology of TD0014 + SVP groups showed declining of testicular histopathologies as compared to SVP group. Therefore, it seems that TD0014 can prevent testicular and spermatozoal damage in male rats induced with SVP. The higher protective effect was seen with TD0014 at 5.4 g/kg dose.

Medical Science, 2021, 25(111), 1241-1247