

# Medical Science

## About the Cover



*Objective:* To review the prevalence of Gastrointestinal symptoms among children in King Salman Armed Forces (KSAF) hospital-Saudi Arabia, Tabuk. *Materials and methods:* This study was a retrospective study, which conducted among autism children who visited King Salman armed forces hospital-Saudi Arabia, Tabuk from January 2016 to December 2020. All patients who aged from 2 to 14 years and diagnosed to have autism by DSM-5 criteria and by the assessment card were included in the study. All data was analyzed using the SPSS version 23.0 program (SPSS Inc, Chicago, IL). *Results:* The sample was 91 children diagnosed as ASD, 60.4% of them were  $\geq 7$  years, and 39.6% were  $< 7$  years, 73.6% were males. Regarding autism symptoms; 44% delayed speech, 27.5% excessive movement, 4.4% convulsions, 15.4% other symptoms and 8.8% nothing. Most of them (81.3%) suffered at least one gastrointestinal symptom. GI symptoms were selective eating, diarrhea, diarrhea number per day, constipation, difficulty in defecation or pain during defecation, from large stools, a low stool frequency, defecating on himself, blood in stool, having very foul-smelling stools, and the presence of undigested pieces of food in the stool with the prevalence of 73.6%, 28.6%, 24.2%, 41.8%, 29.7%, 30.8%, 36.3%, 23.1%, 6.6%, 52.7% and 35.5% respectively. *Conclusion:* The prevalence of GI manifestations among autism children was 81.3% which was a relatively high when compared with the pervious similar studies. Selective eating, having very foul-smelling stools and constipation were the most common GI symptoms. (Ref: Alqoer K, Abuharfil D, Alanazi AM, Alzahrani S, Albalawi S. Prevalence of gastrointestinal manifestations among autism spectrum disorder children: A retrospective study. Medical Science, 2021, 25(118), 3085-3094); (Image source: EIKO OJALA).

**Double test positive predictive value assessment for fetal defect screening in the first trimester of pregnancy at suburban district hospitals of Ho Chi Minh City**

Tuan Vo, Binh Pham, Hoang Vu, Nhat Ho, Bao Vo

*Objectives:* To determine positive predictive value of Double test for fetal defect screening during the first trimester of pregnancy among high-risk cases by Double test at suburban hospitals of Ho Chi Minh City. *Methods:* Retrospective cohort study conducted in the period of December 2019 – April 2020. By total population sampling, study objects were 149 pregnant women who had gestational ages of 11-13<sup>6</sup> weeks, participated into prenatal screening with Double test in the first three months of pregnancy, and obtained a high-risk test result for at least one of the three trisomy disorders 21, 18 and 13 at 7 suburban hospitals of Ho Chi Minh City. *Results:* During 5 months of study conduction, 149 pregnant women had Double test results as high risk, it is recorded that predictive value of Double test in fetal defect screening during the first trimester of pregnancy was 5.3%. All high-risk Double test cases had a chromosomal anomaly of trisomy 21 via amniocentesis. *Conclusion:* Although positive predictive value is very low (5.3%) and false positive rate is high (94.7%), Double test still plays a role in antenatal screening in the first three months of pregnancy. However, when positive, counseling for pregnant women is needed to assure them that there are about 5 true deformities per every 100 high-risk cases. It is necessary to conduct more specialized tests for confirmed diagnosis.

*Medical Science*, 2021, 25(118), 3078-3084

---

**Prevalence of gastrointestinal manifestations among autism spectrum disorder children: A retrospective study**

Khaled Alqoer, Duha Abuharfil, Aziza Munis Alanazi, Sarah Alzahrani, Salwa Albalawi

*Objective:* To review the prevalence of Gastrointestinal symptoms among children in King Salman Armed Forces (KSAF) hospital-Saudi Arabia, Tabuk. *Materials and methods:* This study was a retrospective study, which conducted among autism children who visited King Salman armed forces hospital-Saudi Arabia, Tabuk from January 2016 to December 2020. All patients who aged from 2 to 14 years and diagnosed to have autism by DSM-5 criteria and by the assessment card were included in the study. All data was analyzed using the SPSS version 23.0 program (SPSS Inc, Chicago, IL). *Results:* The sample was 91 children diagnosed as ASD, 60.4% of them were  $\geq 7$  years, and 39.6% were  $< 7$  years, 73.6% were males. Regarding autism symptoms; 44% delayed speech, 27.5% excessive movement, 4.4% convulsions, 15.4% other symptoms and 8.8% nothing. Most of them (81.3%) suffered at least one gastrointestinal symptom. GI symptoms were selective eating, diarrhea, diarrhea number per day, constipation, difficulty in defecation or pain during defecation, from large stools, a low stool frequency, defecating on himself, blood in stool, having very foul-smelling stools, and the presence of undigested pieces of food in the stool with the prevalence of 73.6%, 28.6%, 24.2%, 41.8%, 29.7%, 30.8%, 36.3%, 23.1%, 6.6%, 52.7% and 35.5% respectively. *Conclusion:* The prevalence of GI manifestations among autism children was 81.3% which was a relatively high when compared with the pervious similar studies. Selective eating, having very foul-smelling stools and constipation were the most common GI symptoms.

*Medical Science*, 2021, 25(118), 3085-3094

---

**Comparison of dental pediatric patient's pain perception for needle free injection and conventional technique for buccal infiltration anesthesia – A randomized controlled trial**

Pankaj Chavhan, Pratima Kolekar, Yogesh Somwanshi, Akash Bakal, Shruti Bhamare, Suraj Bakal

*Aim:* The purpose of the present study was to assess the pain perception for Jet injection and conventional injection for buccal infiltration local anesthesia among children. *Methods:* Total 106 children were selected based on inclusion criteria, from Department of Pedodontics, SDKS dental college and hospital, Nagpur. The study was carried out in Year 2021 (March-June). Children between 6-12 years of age were selected for study. Only buccal infiltrations were given to each child. Two methods have been used for buccal infiltration: needle free injection and conventional injection technique. Technique to be given first was chosen based on flip coin randomization. *Outcome:* Statistical significant difference i.e.  $p < 0.05$  was found between needle free injection and conventional injection technique. *Conclusion:* the needle free injection (Jet injection) was well accepted by children over conventional injection technique.

*Medical Science*, 2021, 25(118), 3095-3100

---

**Self-assessment of tooth discoloration on natural anterior teeth between different types of smoking among adults in Riyadh, Saudi Arabia**

Mohammed Awawdeh, Abeeralrumyyan, Abdulrahman Alsomali, Ahmed Alharbi, Ali Almutairi, Ali Alammari, Rakan Alhadlaq, Anas Alanazi

*Objectives:* The aim of the study is to evaluate anterior teeth staining caused by different types of smoking. *Methodology:* Questionnaire was prepared to have the following sections: Sociodemographic, oral hygiene practices, smoking habits and evaluation of teeth staining. The questionnaire and dental staining evaluation were conducted as follows. Pictures with different severities of staining were provided in the questionnaire, and it will be used by the participant to conclude the severity of their stains. In regard to stains, it will be classified as follows: no-stains, mild, moderate and severe. In addition, the questionnaire will contain four pictures with varying levels of stains coverage. *Results:* A total 465 participants from different demographical backgrounds who all met intended criteria. The study shows the participants who smoked any of the following traditional

cigarettes, electronic cigarettes and hookah had high staining on their anterior teeth. In addition, respondents with poor oral hygiene had worse tooth stain score compared to those who had good oral hygiene. *Conclusion:* From our research we can conclude that smoking any of following traditional cigarettes, electronic cigarettes or hookah can cause tooth staining. This is usually worsened by the poor of oral hygiene which as indicated by our research.

*Medical Science*, 2021, 25(118), 3101-3113

---

### **Effect of some nutritional supplement on the cerebellum against cyclophosphamide toxicity**

Ali Hassan A Ali, Shaban Ragab Ibrahim, Abdulrahman M Alkassar Alanazi, Hamad Mesfer H Alatif, Bandar Suliman S Alsultan, Bakheet Mulfi S Alrashdi, Yousef K Alhuzaimi, Obaid A M Alhajri, Abdulhakim Alqahtani

The cerebellum is anatomically situated behind the brain stem inside the posterior cranial fossa. As an important part of nervous system, it can be affected by oxidative stress. Dietary supplements have been shown to have antioxidants properties that may protect our bodies from the dangerous effects of free radicals. One such supplement is Aphanizomenon flos-aquae (AFA) which has health-improving effects particularly on the nervous system. Cyclophosphamide (CP) is a widely used chemotherapy drug that can cause an oxidative stress. This study was carried out to investigate the role of AFA in prohibiting the adverse effects induced by cyclophosphamide on the cerebellum of the animals treated with CP. It was carried out on 36 rats with body weights of 270-330 g. The animals were classified into three groups. The first one is control group, the second is CP treated group, received one dose of CP at 100 mg/kg, and last group is CP+ AFA group, received orally extract of AFA after CP injection. The structure of the cerebellar tissue was compared in the different groups histologically. The examined sections showed significant cellular injury in the second group compared to the control group. The third group treated with AFA after CP injection showed marked improvement in the changes that occurred compared to the second group. These results provide evidence that AFA has a protective effect as it reduces the cellular injuries in the cerebellum induced by cyclophosphamide.

*Medical Science*, 2021, 25(118), 3114-3120

---

### **Barriers influencing diabetic adults' demand for diabetic retinopathy screening during the covid-19 pandemic in Taif city; patients' perspectives**

Abdulhamid Alghamdi, Nada Saed Alrubaie, Nada Ahmad Almalki, Khaled Abdulrahman Almalki, Mahmood Abdullah A Eid, Rana Eidhah Almalki, Khames T Alzahrani

*Background:* Diabetic Retinopathy (DR) is a complication of uncontrolled Diabetic mellitus (DM). It affects the vision-related quality of life significantly, and it is one of the leading causes of blindness. Various socio-cultural elements affect eye health-seeking behavior and barriers to access DR screening services (DRSS) by people with DM (PwDM). However, studies assessing barriers to DR screening among people with diabetes in Saudi Arabia are limited. The principal aim of this study was to evaluate the barriers to DR screening among Saudi diabetics during the COVID-19 pandemic. *Methods:* This was a cross-sectional, survey-based study conducted in Taif, Saudi Arabia, from October 2020 to September 2021. Data was collected using a predesigned self-administered online questionnaire. Then data were analyzed by the SPSS program, version 25 at a level of significance of 0.05. *Results:* A total of 1042 adults with diabetes were enrolled in the study. About 39% of them had diabetes duration of fewer than five years. Around 3.8% of the participants agreed that poor glycemic control enhances diabetic retinopathy progression, 18.9% agreed that diabetic individuals might have advanced diabetic retinopathy despite having good vision, 7.5% agreed that comorbidities enhance diabetic retinopathy progression and 3.9% agreed that DR can be detected early might save vision. *Conclusion:* Finally, the study found that patients had an appropriate degree of awareness on DR; however, several knowledge areas should be improved. Furthermore, our findings demonstrated that COVID-19 caused a delay in patient care, resulting in poorer outcomes in patients with DR.

*Medical Science*, 2021, 25(118), 3121-3131

---

### **Effectiveness of diaphragm activation using reflex mediated dynamic neuromuscular stabilization on trunk function in hemiplegia**

Raghumahanti Raghuvveer, Ekta Chitkara, Parul Raj Agarwal

*Introduction:* Trunk muscle strength is impaired multidirectionally in hemiplegic patients and its identification plays a crucial role in planning treatment strategies in rehabilitation. Neurodevelopmental treatment (NDT) is commonly used to improve postural core stability but requires conscious effort by the patient. Dynamic Neuro Muscular Stabilization (DNS) utilizes the subconscious stimulation of trunk to reflexively mediate the diaphragm and other core stabilization muscles, which is extremely effective for individuals with, reduced somatosensory or movement awareness. *Materials and Methods:* Aim of this study is to find out effects of training utilizing conscious and subconscious activation of diaphragm by NDT and DNS strategies over 6-weeks on trunk function in Hemiplegics. This prospective randomized comparison study was conducted with Thirty hemiplegic subjects who were randomly allocated into two groups, Group A- NDT Group and Group B- DNS Group with 15 in each group (n=15). Trunk Impairment Scale (TIS), Modified Rankin Scale (MRS), Stroke specific Quality of life (SSQOL) and walking ability (WA) were measured as Pre-test and post-test scores. *Results:* Analyzed data showed significant improvements with in both the groups for all variables with P<0.05. Between group comparisons showed significant improvements in TIS and SSQOL and non-significant differences for MRS and WA. *Conclusion:* The study findings conclude that DNS, a reflex mediated diaphragmatic and core muscle

activation can be more useful in improving trunk function when compared with conscious activation by NDT in subjects with Hemiplegia.

*Medical Science*, 2021, 25(118), 3132-3139

---

## CASE REPORT

---

### **Pre-operative embolization of giant pulmonary arteriovenous malformation: Case report**

Mohammed Hussain Al Metlag, Abeer F Al-Dhawi, Khalid Saeed Al Ahmari, Hatem Al Obaidi, Sultan Nasser Al Ammari, Abdulwaheed Alruhaimi, Faisal Al Ahmari, Abdulaziz Almat'hami

Among pulmonary vascular anomalies are arteriovenous malformation (AVM) featured by miscommunication between pulmonary arteries and veins. These unusual communications allow the unoxygenated blood to escape the standard capillary beds within the lung. AVMs cause right-to-left shunts, paradoxical embolization with hypoxemia. Clinical signs and symptoms differ according to the size, number, and blood flow within the AVMs. Among of the treatment modalities, transcatheter embolization is the preferred for managing pulmonary AVMs. Although, this technique is ineffective in cases with large AVM or having multiple affected main arteries which are managed mainly by surgical resection. The current case report focuses on a patient with a giant pulmonary AVM measuring 4.8 × 5.6 × 6.2 cm with a single feeding artery that pre-operatively managed with vascular plug embolization.

*Medical Science*, 2021, 25(118), 3140-3145

---

## ANALYSIS

---

### **Effect of thermocycling and khat extract staining on the optical and mechanical properties of ceramic materials**

Mohammed M Al Moaleem, Abdulaziz A Alathwani, Abdulhamid A Alamir, Mesfer I Alshehri, Makiah S Alsaeed, Abdullah SA Otudi, Hussain A Munthiri, Saleem A Atiah, Aisha M Yamani, Zainab M Madkhali, Majid A Arishi

*Background:* Color stability of CAD/CAM prosthetic materials is important for long-term clinical and survival success during daily chewing habit. *Aims:* To assess the effects and outcome of thermocycling and khat extract (KE) staining on the optical (i.e., TP and OP) and physical properties of multilayer zirconia and feldspathic CAD/CAM ceramic. *Methods:* Forty specimens with dimensions of 16 mm × 12 mm × 1.8 mm were produced from multilayer zirconia and feldspathic CAD/CAM ceramic materials. Specimen's surfaces were prepared in glazed and polished forms. Before thermocycling, the color parameters of specimens were measured using a spectrophotometer, again and after the thermal aging process, the color measurement was recorded and analyzing the collected data using descriptive statistics, correlation, one-way ANOVA, and Tukey's tests. *Results:* After thermocycling and KE staining, the color parameters L, a, and b decreased, and  $\Delta L^*$ ,  $\Delta a^*$   $\Delta b^*$  had significant differences between groups ( $p$  values  $\geq 0.050$ ). Polished surfaces had higher TPs compared with glazed surfaces. OP values ranged from 22.1 to 16.2 and were higher in glazed than in polished surfaces. Glazed and polished zirconia (777.42± 72.67N and 533±50.71 N) had significantly higher compressive fracture forces compared with glazed and polished Vita Triluxe (396.25±42.24N and 338.66±40.17N). *Conclusion:* KE staining and thermocycling caused slight color changes in TP and OP values, which were high in polished surfaces. TP and OP values were reduced after KE immersion and thermocycling. Compressive forces were under clinically accepted values for zirconia and less than half values for Vita Triluxe specimens. The three types of failures were presented.

*Medical Science*, 2021, 25(118), 3146-3156

---

### **An investigation of mandibular asymmetry and associated soft-tissue characteristics among adults: A digitalized orthopantomographic and photographs assessment**

Nancy Ajwa, Nora Ababtain, Daniyah Alsulaiman, Shahad Alotaibi, Maram Alqahtani, Khames T Alzahrani

*Introduction:* There are many controversies behind the topic of mandibular asymmetry. Conflicts include: gender predilection, soft tissue correlation and what is considered normal asymmetry. Consequently, this study was done to investigate the prevalence and severity of mandibular asymmetry among adults in a sample from orthodontic clinics and to assess the soft tissue correlation and gender predilection. *Methods:* Mandibular asymmetry was investigated on a standardized digitalized orthopantomograms of 793 adults attending Riyadh Elm University, orthodontic clinic following strict eligibility criteria. This study started in July 2020 to October 2021. Asymmetry index (AI) used to analyze the prevalence and gender incidence. Soft tissue assessment for 87 of the mandibular asymmetric participants was done on a standardized photograph checking the soft tissue correlation measuring the area, perimeter and compactness for the two sides of the lower third of the face. The resulted ratios correlated with (AI). Both radiographic and photographic assessment was done on AutoCAD LT 2021 software (version R.46.M.1748). *Results:* Considering participants of 3% or greater in Asymmetry Index (AI) as asymmetric. Therefore; 20.9% of males' subjects represent mandibular asymmetry, while the incidence in females was only 13.69%. Moreover, there's no significant link between hard and soft tissue asymmetry, the correlation (r) between Asymmetric index (AI) and area ratio (AR) was recorded as .062 indicating a weak positive relationship. *Conclusion:* Ultimately, it can be concluded that soft tissue is not associated with hard tissue asymmetry. Moreover, Radiographic based mandibular asymmetry showed high prevalence rate in both adult genders with higher incidence in males.

*Medical Science*, 2021, 25(118), 3157-3166

---

## **The estimating level of awareness and knowledge of colorectal cancer among students at Umm Al-Qura University health colleges**

Salah Bakry, Mohannad Hemdi, Aseel Bati, Malek Alharbi, Abdulaziz Albarakati, Ammar Aljohani

*Aim/Background:* Colorectal cancer (CRC) encompasses a challenging health dilemma affecting millions of people globally and nationally. This study surveyed health-related students from different medical colleges in the Makkah region of Saudi Arabia. The knowledge and awareness of CRC were compared among students, and suggested methods were recommended to bridge this knowledge gap. *Methodology:* A survey-based study was carried out in August 22, 2021. All medical colleges in UQU were included. *Results:* The number of participants in the current study was 370. Their mean age was  $22.3 \pm 2.41$  years. Overall, (65.7%) participants were males, and (34.3%) were females. The majority were 2th-year students. The predominantly represented college was the college of medicine (22.2%). Furthermore, there is a significant difference between students' level of awareness and their educational-demographical presentation (P-values, 0.000). *Conclusions:* early screening of CRC is an important goal to achieve to allow early detection to prevent serious consequences.

*Medical Science, 2021, 25(118), 3167-3173*

---

## **A cross sectional analytical study estimating awareness of Saudi community about complications and post cementation care of porcelain veneers with dentist and patient related risk factors**

Randa Sabry Ibrahim, Abeer Abdullah Alrumyyan, Abdul Salam Thekkiniyakath Ali, Miral Zaki Alrowili, Norah Mohammed Gharawi, Saleha Khalid Alkhairy, Razan Mohamed Aldhafiri, Balsam Dawood Alghomlas

*Purpose:* The aim of this study is to assess the awareness and knowledge about complications, dentist /patient related risk factors and post cementation care of dental veneers among the Saudi population in Riyadh. *Materials and Methods:* A cross-sectional study using self-administered online survey was conducted on the adult population of 18-year-old and above. Data were collected through questionnaire consisting of four major areas, including demographic data, participants' general knowledge about short- and long-term complications of dental veneers, their related risk factors, and post cementation precautions. The collected data were analysed using SPSS software for Descriptive statistics and Chi square test ( $p < 0.05$ ). *Results:* The mean total knowledge percentage of 387 participants in the study was 33% (No=141). Analysis showed gender significant difference about chipping, debonding of dental veneers and change in phonetics at cementation time ( $p = 0.0331$  &  $p = 0.0072$ ,  $p = 0.1111$ ). College graduates and postgraduate degree holders had more knowledge regarding gum recession ( $p=0.0260$ ) and wearing of opposing dentition ( $p=0.0473$ ), with no significant difference ( $p < 0.05$ ) of level of education toward veneer problems ( $p = 0.8279$ ). Monthly income has no significant effect on community awareness of dental veneer complications ( $p = 0.1023$ ). Veneered population was knowledgeable about patient ( $p=0.0004$ ) and dentist ( $p=0.0034$ ,  $0.0297$ ) risk factors, with no significance for non-veneered population ( $p=0.8713$ ,  $0.0724$ ). Only 46% of respondents had the knowledge about post cementation precautions needed for care of dental veneers. *Conclusion:* The overall knowledge regarding dental veneers was low and needs improvement. Dentists were the main source of information.

*Medical Science, 2021, 25(118), 3174-3182*

---

## **Organ injury study and the mortality rate assessment in a cecal slurry dose-dependent peritonitis in a rabbit model**

Hosien Pormasoumi, Daryoush Rostami, Khosro Jamebozorgi, Arash Rajabi

*Introduction:* Sepsis is a life-threatening medical crisis in which the body responds to infections extremely. The present study is aimed to assess the extent of mortality in cycle slurry, dose-dependent peritonitis in the rabbit model. *Method and Materials:* The present study was performed on male polish rabbits. At least 10 days before the experiment, the rabbits were placed in a controlled environment and received standard amounts of water, food, and libitum. Anesthesia of 6 donor rabbits was performed by intramuscular injection of 5 mg/kg Xylasein and 35 mg/kg ketamine. *Result:* The total number of lymphocytes, neutrophils, and white blood cells (WBC) in the groups of 15 and 20 ml/kg was less than the groups of 5 and 10 ml/kg, no significant differences were observed between the groups ( $P > 0.05$ ). The number of platelets was also higher in the 20 mL/kg group in regard to the sham group. All of the sepsis groups had lower concentrations of plasma albumin than the sham group. Increased doses of cecal slurry were associated with an increase in the ALT and BUN concentrations. Higher concentrations of ALT and BUN were observed in the sepsis groups than in the sham group. Although the samples in the 15 and 20.0 mL/kg groups showed higher creatinine concentrations than those in the sham group, the difference was insignificant. *Conclusion:* Based on the DCFH-DA concentrations and blood chemistry analysis, the cecal slurry model used in this study produced dose-dependent, multiple organ injuries and was associated with ROSs generation.

*Medical Science, 2021, 25(118), 3183-3201*

---

## **CASE REPORT**

### **Acute abdomen: atypical presentation and outcome: A case report**

Ahmed M Ramzy, Abdulmohsen A Altwajri, Omar T Ahmed, Abdelrahman G Hassan

An unusual presentation is usually problematic in terms of diagnosis and management, in this case report we will show one of these presentations and how to identify the correct diagnosis to help avoid the complications of any delay. The patient presented

with left upper abdominal pain, the abdomen was soft and lax but there was tenderness at the left upper quadrant, other systems exams were unremarkable. Mesenteric ischemia was the main suspected diagnosis, but a late ECG test was done and revealed anterolateral myocardial infarction. Patient immediately transferred to the catheter lab and PCI was done. The patient then had syncopal attack and diagnosed as TIA and accordingly an ECHO was ordered and showed mural thrombus. This case shows the necessity of an ECG test in patients presenting with abdominal pain without any delays.

*Medical Science*, 2021, 25(118), 3202-3205

---

## RESEARCH

### **Flow cytometric assessment of nivolumab and/or epigallocatechin-3-gallate on cancer stem cells of DMBA induced hamster buccal pouch carcinoma**

Mohamed Alaa Al-Dosoki, Ahmed Abd-Alshakor Abd-Alhafez, Asmaa Mohamed Zahran Omar, Mohamed Gomaa Attia Zouair

The aim of the present study was to investigate the effect of nivolumab and/or epigallocatechin-3-gallate (EGCG) on cancer stem cell(s) (CSC(s)) of DMBA induced hamster buccal pouch squamous cell carcinoma (HBPSCC). *Material and methods:* fifty Syrian male hamsters were divided into five group(s) (G(s)), 10 each. GI: negative control, left untreated. The right pouches of those in GII, GIII, GIV and GV were painted with DMBA (3times /a week/ 14 weeks). GII: positive control, not received other treatment. GIII was injected with intraperitoneally (IP) with nivolumab only, while GIV with IP with EGCG only, whereas GV with IP (combination of nivolumab and EGCG). After termination of the experiment, gross observation was recorded, the animals were euthanized, and all pouches were surgically excised and bisected. The first piece was prepared for H & E stain and immunohistochemical (IHC) staining utilizing CD68 and CD3. The other piece was used for flow cytometric (FCM) assessment for identification and sorting of CSCs using CD44 & CD24 antibodies. Then, apoptosis assay of the sorted CSCs was employed. *Results:* gross observations, H & E stain, IHC and FCM results revealed some variability throughout the treated Gs (GIII-GV) compared to those observed in GII. CSCs sorting, CD44+, CD24-& CD44+, CD24+ revealed high significant difference between GII and Gs: GIII- GV (p value < 0.001). The sorted CSCs apoptosis recorded highly significant difference between GII and other Gs {(GIII- GV) (p value < 0.001)}. *Conclusion:* combination of EGCG-nivolumab significantly inhibits tumor progression and induces apoptosis in CSCs of HBPSCC.

*Medical Science*, 2021, 25(118), 3206-3221

---

## ANALYSIS

### **Prevalence of headache and associated risk factors among radiology department**

Hussain A Al Ghadeer, Jaafer J Al Obaid, Wejdan H Al Musallam, Khadijah A Al Ali, Qassim A Al Hassan

*Background:* Headache is considered as disabling disorder. It has significant impact on the quality of life and functional impairment. Health care providers in radiology department within different qualification are expected to experience health-related problems during their life due their nature of works and spending hours on screening. So, this study aims to identify the prevalence of headache and its associated risk factors among radiology department. *Methodology:* A cross-sectional study was conducted from July to October in multicenter at radiology department with different qualification: doctor, technician, and nurse in AlAhsa, Saudi Arabia. The data were collected through a self- administrated questionnaire that fulfilled paper based or online. Considering the chi-square significant is in  $P < 0.05$ . *Results:* A total of 133 workers in radiology department fulfilled the inclusion criteria. The analyzed population presented a mean age of  $30.6 \pm 11.8$  years; female represented 72.2 % of the participants. Half of the radiology department is 52.6% spending more than 6 hours on computer. Exact of 106 (79.7%) participant experience headache that lasting for hours among 57.5% of them. The most common site reported of headache was bifrontal (57.8%) followed by Bi-orbital (40.4%). Time spending on computer, different qualifications and being female were significantly associated with headache ( $P = .049$ ). *Conclusion:* The prevalence of headache is high among radiology department within different qualifications. This study encourages more studies to be established among health care provider for better practice decisions and reducing the global headache burden.

*Medical Science*, 2021, 25(118), 3222-3230

---

## CASE REPORT

### **A malignant transformation of benign phyllode tumor of breast and its management: A case report from India**

Meenal Rajput, Md. Jawed Akhter, Lamture YR, Gaurav Jagtap

Phyllode tumor (PT) of a breast is mostly benign, it shows a very rare transformation into malignant PT. Globally, less than a percentage of cases get reported for breast tumors. We reported the case of a recurring tumor in a woman of age 48 years with a lump on her left breast. She has gone through a resection twice. Firstly, post excision H/P reported fibroadenoma. Secondly, the excision of benign PT transformed to malignant phyllode within 3 months of resection. The results from images of CT scan, intraoperative, and pathological slides from the specimen of mastectomy have made us conclude that the malignant transition is caused by a mutation in residual tumor cells. Then, the total mastectomy with low axillary lymphadenectomy was done. Further, the patient was advised for adjuvant chemotherapy within 2 weeks and radiation therapy to the chest within 4 months of surgery.

The patient is also advised to attend the follow-up appointments with the oncologist monthly for a minimum of 2 years after completion of adjuvant chemo-radiotherapy.

*Medical Science, 2021, 25(118), 3231-3236*

---

### **Xanthogranulomatous pancreatitis in a male patient with pre-existing SPEN**

Qaed Alhammami, Fahd Alshehri

*Background:* Xanthogranulomatous (yellow granulomatous) pancreatitis is a very rare and chronically destructive inflammatory process. Solid pseudo papillary pancreatic tumors are rare pancreatic tumors. *Objective:* At the Department of Abdominal Radiology, King Faisal Specialist Hospital and Research Center in Riyadh, Saudi Arabia, we believe it is the first case of Xanthogranulomatous pancreatitis associated with an existing solid pseudo papillary epithelial tumor (SPEN). *Case report:* A 30-year-old man, medically free, with a history of gastric sleeve resection, presenting with fever, recurrent severe epigastric pain, nausea and vomiting after distal pancreatic resection and spleen resection, pancreas. Histopathological analysis of histology showed solid pseudo granulomatous pancreatitis, as well as severe yellow granulomatous pancreatitis. *Conclusions:* Our case is unique in that Xanthogranulomatous pancreatitis was found in an existing male patient with SPEN.

*Medical Science, 2021, 25(118), 3237-3241*

---

### **ANALYSIS**

#### **Risk factors of asthma among the Saudi pediatric population between 1 and 15 years old**

Abdullah Mohammed Khayat, Meshal Mohammed Almalki, Asim Abdulhadi Almalki, Meshal Mohammed Alhumyani, Nasser Saleh Altalhi, Rakan Dasman Alqurashi, Ahmed Mahmoud Alqurashi, Khames T Alzahrani

*Background:* Asthma is a widespread medical problem among the pediatric age group in Saudi Arabia. This study describes asthma risk factors relevant to the Saudi population. The main objective of this study is to determine the risk factors for developing asthma among Saudi children. *Methods:* A descriptive cross-sectional study was conducted in Saudi Arabia from June 2020 to October 2021, involving families with children from one to 15 years of age using an online survey. The questionnaire assessed the sociodemographic data of the families and the major asthma risk factors. Then, the data were analyzed using IBM SPSS. *Results:* A total of 996 family participated in the study, 766 families had asthmatic children 62.7% of them were males, with a mean age of  $10.6 \pm 4.9$  years old. From the asthmatic group 21.4% had rural residences compared to 7.4% from the healthy group ( $P=0.001$ ). Asthma was more prevalent in those with low income, having parents without university-education, having a family history of allergy or allergic rhinitis, and having a smoker in their families ( $P=0.001$ ). In the asthmatic group, a gas oven was used more than in the comparison group, house floors were covered in 29.8% compared to the other group and Insecticides were more commonly used in the asthmatic group ( $P=0.039$ ). *Conclusion:* Family history of asthma, allergies, and allergic rhinitis were the most significant familial risk factors. Presence of a family smoker, using a gas oven, house floor coverings and the frequent use of incense were more associated with asthma.

*Medical Science, 2021, 25(118), 3242-3250*

---

#### **Assessment of knowledge, attitude and practice about thyroid disorder before and during pregnancy among adult female patient in Northern region of Saudi Arabia**

Hyder Mirqhani, Wafa Faisal W Aljadrawi, Wejdan Mohammed S Alshehri, Thekra Zaidan Ali Albalawi, Rana Suliman D Alshwamin, Amal Nafea J Alharbi, Aseel Ali T Albalawi

*Background:* Knowledge, attitude, and practice are an integral component in the management of thyroid disorders during pregnancy. Therefore, this study aimed to assess knowledge, attitude and practice about thyroid disorder before and during pregnancy among adult female patient in Northern region of Saudi Arabia. *Methods:* The design was cross-sectional research performed among 264 females with and without thyroid disease. The participants were selected using a stratified method; the target age group was women in reproductive age. A structured questionnaire was consisted of two parts, sociodemographic characters and knowledge, attitude, and practice part (KAP) used to collect the data. *Results:* There were 264 females, the frequency of thyroid diseases among the studied females was 62.5%, and hypothyroidism was the most prevalent 75.8%, and the diseased participants (98.2%) know that thyroid gland is located in the anterior part of the neck. However, the knowledge, attitude, and practice were suboptimal regarding other components of the questionnaire. *Conclusion:* KAP were suboptimal among females in the Northern region of Saudi Arabia, increasing the awareness about this important health issue is recommended to prevent the lethal consequences.

*Medical Science, 2021, 25(118), 3251-3258*

---

#### **Utility and perception of smartphone related medical apps among medical students during full-time virtual learning**

Arwa A Aljishi, Ghaida A AL Zaher, Zainab A Alqutayfi, Fatimah B Al mousa, Zainab A Jadher, Alaa H Aljanabi, Einas M Yousef

*Objectives:* This article investigated the purposes and medical students' perception of using smartphone medical applications, as well as the impacts on their clinical practice during full-time virtual learning due to the COVID-19 pandemic. *Methods:* Between March and August 2020, an anonymous online survey was distributed among 338 undergraduate medical students (second to six

year) who were randomly selected from different colleges of medicine, Riyadh, Saudi Arabia. *Results:* Our findings revealed that almost all students have smartphones, and that clinical skill guide was the most prevalent reason for utilizing medical apps. Most of our participants thought these apps were useful in saving time, simple to obtain, and safe tools for patient care. *Conclusions:* Our research highlights medical students' positive sentiments toward using medical applications in their studies, particularly during full-time virtual learning. Using these medical apps might help medical students and the education system to narrow the gaps that had been emerged during the lockdown.

*Medical Science*, 2021, 25(118), 3259-3265

---

### **Effect of smartphone addiction on sleep quality among medical students at Taibah University, Medina, Saudi Arabia**

Sawsan Abdullah Algarni, Abdulaziz Saleh Aljohani

*Background:* Smartphone is a double-edged sword since its addiction has a lot of negative effects on health as it will affect sleep quality, eating behaviors, exercise, and academic performance. This study aims to find out the prevalence of smartphone addiction using a validated scale which is Smartphone Addiction Proneness Scale-short version (SAPS) and evaluate the effect of smartphone usage on sleep quality among medical students at Taibah University, Medina, Saudi Arabia during 2020. *Methodology:* An analytic cross-sectional study with a self-administrated questionnaire was conducted on medical students at Medical Collage, Taibah University. A self-administrated questionnaire was used to collect data using the PUMP scale for smartphone addiction. Sleep quality was assessed using PSQI. *Results:* Total number of participants is 312, 44.2% of the participants were males. 31.4% of the participants use smartphone for 1-5 hours, 50% (n=156) use it for 6-8 hours, 10.3% use it for 9-10 hours, and 8.3% use it for more than 10 hours. Using PUMP scale; 46.6% of the participants were smartphone addicts) while 53.4% weren't smartphone addicts). Using the PSQI; we found poor sleep quality in 41.7% of smartphone users and good sleep quality in 58.3%. *Conclusion:* Smartphone addiction is readily growing along with the increased need for its usage, this addiction is particularly harmful as it affects many aspects in one's life especially negatively affecting sleeping quality both in a direct way and in an indirect way.

*Medical Science*, 2021, 25(118), 3266-3278

---

### **Prevalence of depression among adult obese patients attending primary health care clinics in MOH, Medina, Saudi Arabia**

Yasser Dhaher Alharbi, Mansour Almuzaini

*Background:* Obesity and depression are two common conditions that adversely affect both health and the economy at the individual and social levels. Both depression and obesity lead to poor quality of life and emotional well-being, especially in social relationships. The study was carried out to investigate the prevalence of depression in obese adult patients attending MOH's primary health care clinic in Medina, Saudi Arabia in 2020. *Methodology:* A non-experimental cross-sectional analysis study of adult obese patients treated at the Ministry of Health's primary health care clinic in Almadina Almunawara, Saudi Arabia. Use a multi-part self-reported survey consisting of four main parts. It is structured based on the purpose of the research. The data were collected manually and double-entered into SPSS for analysis using appropriate statistical tests. *Results:* Of all study participants; n= 23.1% aged between 18- 35, 37.6% aged between 36- 55, 39.3% aged 56 or more. Almost two thirds (63.6%) of participants were males, 2.3% were overweight, 66.5% were Obese I, 22% obese II, and 7.5% were obese III. 34.7% of the participants think of their weight as normal and 61.8% think they are overweight. Based on PHQ; 9.2% had mild depression, 13.9% moderate, 16.2% had moderately severe, and 4.6% had severe depression. There was no significant association between severities of depression with neither any variable. *Conclusion:* Obesity leads to psychological pressure, which in turn leads to depression. People with obesity III are more likely to suffer from reactive depression, suggesting that these people will be included in future studies.

*Medical Science*, 2021, 25(118), 3279-3287

---

### **Emergency surgery for obstructing or perforated colon cancer; rate of re-intervention and prognostic factors: A single center study**

Ayyob A Alqarni, Sawsan A Alharthi, Loujain A Alyousef, Rana K Alramyan, Raghad I Alshaalan, Lujain A Alassaf

*Aim:* Emergency complications of colon cancer including obstruction and perforation can be seen in up to one third of patients as an initial presentation. The aim of this study is to determine the rate of re-intervention, incidence of complications, and prognostic factors of emergency surgery in obstructing and perforated colon cancer. *Methods:* Data of patients with colorectal cancer managed in our hospital during a 5-year period were retrospectively analyzed. Only patients presented to the emergency department (ED) for a complicated colorectal cancer with obstruction or perforation and underwent a surgical intervention were included. *Results:* A total of 176 colon cancer patients with a mean age of 64.24 were included. Obstructing colon cancer was the most commonly presented complication (70%), followed by perforated colon cancer (17.5%). Around 42% were diagnosed prior to ED visit and 58% were diagnosed first in the ED at the time of complication. Fifty-two (30.6%) patients underwent a surgical re-intervention. In the univariate analysis, hospitalization duration and undergoing a surgical re-intervention were the most significant factors associated with post-operative complications (p=0.002). Additionally, patients who underwent laparotomy had almost 3 times higher risk for experiencing post-operative complications compared to those who underwent a laparoscopic approach, OR= 2.801, p=.018; (CI 95% 1.195-6.568). The mortality incidence is 13.5%. *Conclusion:* Rate of re-intervention appears to be high and associated with increased mortality among patients with complicated colon cancer. Further studies are needed to determine the appropriate timing and indication for undergoing a surgical intervention after initial surgical management for complicated colon cancer.



**Knowledge and attitude regarding prosthodontic rehabilitation and factors affecting the patients visiting among Saudi Arabian population: A cross-sectional study**

Inderjit Gowdar, Mohammed Alqhtani, Faisal Alhijab, Mohammed Almutairi, Abdullah Alhwsawi, Abdulaziz Alhumaidan, Khames Alzahrani, Abdulrahman Alhaddad

*Background:* Oral diseases will have an impact on one's health and quality of life. One of the reasons individuals' visit the dentist is because they are completely or partially edentulous. Mastication, communication, facial support, and esthetics are all affected when teeth are lost. Aside from these issues, tooth loss causes patients to experience psychological stress and inhibits social contact. The purpose of this study was to assess awareness and attitude about replacing missing teeth among adult population in a university hospital at Saudi Arabia. *Materials and Methods:* A cross-sectional study survey of 625 participants was conducted in Saudi Arabia from January 2020 to October 2021 by using an online questionnaire. The survey was distributed using social media and Google forms. Patients' personal information, such as age, sex, and education, are included in the questionnaire, as well as information on their awareness and knowledge of missing teeth and desired treatment alternatives. The findings were calculated using descriptive statistics. *Results:* A total of 80.5% of study subjects have stated that they were aware about replacement of missing tooth. 55.4% of participants think missing tooth replacement is necessary for functional aspect. 57.9% knows about removable partial denture, 68.2% know about fixed partial denture and 80.8% know about implants. *Conclusion:* The increase in awareness about the various treatment options can be due to the changes in the socioeconomic background and literacy rate among the population. This can be utilized to implement modern technologies for the success of patient's satisfaction.

Medical Science, 2021, 25(118), 3303-3309

---

**Factors influencing on SCD patient's family and caregivers in Al-Qunfudah governorate, Saudi Arabia**

Fawaz Mohammed Alzubaidi, Salah Bakry, Adnan M Alhazmi, Naif Abdullah Almarahabi, Hamzah Zain Sulaiman Alsayed, Mohammed R Alhayli, Mohamed AM Iesa, Mohamed A Elhefny

*Background:* Sickle cell disease (SCD) is a common hereditary haematological disorder affecting millions worldwide. The current study aimed to improve the quality of life in SCA patients by Periodic psychological assessment and early detection of psychological effects, optimizing the patient's and family's adaptation to the illness. *Methodology:* This study was a survey-based cross-sectional study conducted in Al-Qunfudah governorate, Saudi Arabia. Sickle Cell Disease Burden Interview (SCDBI) vailed questionnaire was used in interviewing the participants. *Results:* A total of 107 participants participated in the study. The vast majority of the samples have SCA alone 50.47%, with one child with SCA 46.73%. *Conclusion:* Early discovery of the psychological effect of SCD is the fundamental goal to achieve to optimize the patient's and family's adaptation to the illness.

Medical Science, 2021, 25(118), 3310-3316

---

CASE REPORT

---

**Post-traumatic bilateral temporomandibular joint ankylosis secondary to condylar fracture: A case report**

Dhiran Talatule, Ayesha Sayyad, Ramhari Sathawane, Romita Gaikwad, Pranali Thakre, Simranjeet Singh, Vidyarjan Sukhdeve

Temporomandibular joint ankylosis (TMJA) is due to union of the condyle with the glenoid fossa as it results to a long-standing, persistent, difficulty in mouth opening. It affects facial growth leading to facial deformity. It is also related to poor oral hygiene, dyspnea, mastication and deglutition which in turn affect the quality of life of the patients. In this article, we present a case report on post-traumatic bilateral temporomandibular joint ankylosis secondary to condylar fracture.

Medical Science, 2021, 25(118), 3317-3321

---

**A case report of herpes zoster in a cutaneous leishmaniasis patient**

Azzam I Alkhalifah, Rayan Alhumaid, Azzam S Alkhalifah, Reem I Alkhalifah

Saudi Arabia is an endemic area of cutaneous leishmaniasis with *L. major* and *L. tropica* being the causative species. A 47-year-old patient presented to the clinic with large plaque of cutaneous leishmaniasis and sporotrichoid nodules. After 20 days of treatment with intravenous meglumine antimoniate, his leishmania improved but he developed large plaques of herpes zoster on the same limb of the leishmania lesion. Herpes zoster has been reported to be induced by systemic treatment with pentavalent antimonials in leishmania patients. In our patient, herpes zoster plaques were localized but involved multiple dermatomes in the same area of the leishmania lesion.

Medical Science, 2021, 25(118), 3322-3325

---

ANALYSIS

---

**Assessment of knowledge and practice in management of tooth avulsion among dental clinicians: A cross-sectional study**

Mohammed Mustafa

*Aim:* Tooth avulsion (TA) is a common presentation of dental trauma and if treated on time saves money and psychological stress to the patient. Dental clinicians are expected to have sufficient knowledge to solace the patient and the parents/guardian as well as manage the avulsed tooth. Hence, this study was aim to assess the dental clinicians' knowledge and practice in the management of tooth avulsion. *Materials and Methods:* This questionnaire based cross-sectional study was conducted among the dental clinicians of Mumbai city of India, through online "Google Forms". The participants were selected through convenience sampling; a pre-tested and validated questionnaire was prepared. SPSS version22 was used for analysing data. The "Chi-square test" was applied to compare the responses, "Descriptive analysis" and "logistic regression analysis" was used while keeping the level of significance at <0.05. *Results:* It was observed that among 434 participants, there was a significant difference between genders and years of experience ( $p < 0.001$ ). There was a significant variation in the knowledge levels as assessed from various responses when the "Chi-square test" was applied. On "logistic regression analysis", no significant difference was seen for gender and age, while the odds ratio for the number of years of experience was significant for the variables ( $p < .00001$ ). *Conclusions:* The level of knowledge and practice in the management of tooth avulsions was moderate among dental clinicians. The success of endodontically treated avulsed teeth depends on various factors as stated in this study.

*Medical Science, 2021, 25(118), 3326-3335*

---

### **Time-dependent expression patterns of inflammatory markers in rat model of lipopolysaccharide-induced acute systemic inflammation**

Eman Mohammad Albataineh, Saad Abdulrahman Hussain, Sinan Subhi Farhan, Heba M Abd El Kareem, Samir Saad Mahgoub

*Objectives:* The study aimed to assess the relationship between various inflammatory markers in an induced systemic inflammation by lipopolysaccharide (LPS) after 6 and 24-hr intervals, and to compare their sensitivity and specificity. *Materials and methods:* Two hundred and seventy rats were allocated into two groups; 150 rats (control group) and 120 rats (test group). The control group was injected i.p with saline, while the test group was injected with 100 µg/kg of LPS i.p. A sample of blood was collected from each rat at 6 and 24 hrs intervals to evaluate hsCRP, TNF-α, IL-6, and IL-10. Rats were sacrificed to get their livers for estimating myeloperoxidase, COX-2, caspase-3, and ALT. *Results:* A significant difference in the levels of the studied mediators after 6 and 24 hrs was revealed in the test group versus the control group. The correlation analysis showed positive values at both time intervals. ROC analysis demonstrated that the AUC was the highest for TNF-α and hsCRP after 6 and 24 hours, respectively. hsCRP was the only marker that showed an increase in AUC after 24 hrs compared with 6 hours. *Conclusion:* The levels of the inflammatory biomarkers were increased in LPS-induced acute systemic inflammation up to 24 hrs; also, there was an increase in the sensitivity and specificity for the assessment of acute systemic inflammation.

*Medical Science, 2021, 25(118), 3336-3344*

---

### **Factors affecting patients' behaviors toward prosthodontic treatment needs in Saudi Arabia**

Abdulrahman Jafar Alhaddad, Nabeel Munshi, Waad Mohammed Ali, Alhanouf Ali Aldoiej, Ayah Ali Alnemari, Faisal Hassan Alhazmi, Turki Salah Alkhallagi, Khames Turki Alzahrani, Osama Ahmed Qutub

*Background:* There are many factors could have an effect on patient's behavior and treatment decision to complete their essential prosthodontic treatment needs, numerous studies have been conducted globally to determine the main reason behind neglecting prosthodontic treatment, but not enough information was found among patients in Saudi Arabia. The main aim of this study is to identify the main factors that could influence patient's decision and attitude toward completing their prosthodontic treatments. *Methods:* This cross-sectional study included 1200 adult participants. This study conducted between January 2021 and October 2021. Data was collected using an online self-administered questionnaire targeting all citizens and residents in Saudi Arabia. Data was collected and enter on the "Microsoft Office excel software" program (2016) for windows then analyzed using (Statistical Package of Social Science Software (SPSS) program, version 20. *Results:* There were 1,200 participants in the study, with 40.8% of men and 59.2% of women. Between the ages of 20 and 30, 54.3% of the population is between the ages of 20 and 30. Other than wisdom teeth, 61.8% of all subjects had tooth/molar teeth removed. 61.3% of the individuals have had root canal therapy in the past. *Conclusion:* There was a strong relationship between age, residency, educational level, and occupation and entire intention to complete the prosthetic therapy. Financial or economic condition appears to be the primary predictor that may have an impact on individuals' intentions and behaviors about their need for prosthodontic therapy.

*Medical Science, 2021, 25(118), 3345-3355*

---

### **Prevalence of sharp injuries among residents of surgical specialties in Saudi Arabia**

Abdulaziz M Alajalin, Nawaf N Almutairi, Shuruq O Alshammari, Sadin W Alhazmi, Fahad S Alkhalaf, Abeer A Alhazmi

*Introduction:* Surgical residents are at risk to get infected with hepatitis C virus, hepatitis B virus and human immunodeficiency viruses, due to sharp injuries. Our aim is to assess the level of awareness, and the risk factors also illustrate the causes regarding the risk of Sharp injuries among surgical resident specialty Saudi Arabia. *Methodology:* This is a cross-sectional, study conducted in all Saudi Arabia regions. A total of 314 residents at any surgical field included in this study; in which the participated self-administered questionnaire that addressed if the participant had experienced any sharp-related injuries in the last year and assessed the level of awareness of residents. *Results:* Half of the participated residents have had a sharp injury during the past year. 66.9% of residents had been injured for 1-3 times in the last year, and 63.1% were aware of the policies toward the sharp injuries.

Self-induced injuries were observed the most (74.5%). High risk injuries were reported among 24.2% of residents. 8 types of were recorded when sharp injured occurred, Suturing was the highest rate (80.9%), followed by "Loading" a needle (57.3%). *Conclusions:* The findings of the study indicate that majority of the sample experienced a sharp injury 1-3 times in the previous year, with the vast majority being self-inflicted, and the most frequent incidence of injury being a rush during a procedure. It is critical to act and raise knowledge about the risk factors for sharp injuries, as well as urge reporting of such incidents.

*Medical Science*, 2021, 25(118), 3356-3364

---

#### **Assessment of knowledge and awareness regarding systemic lupus erythematosus among the population in Taif, Saudi Arabia**

Jamal Abdullah Albishri, Moayyad Fateh Alotbi, Rami Faleh Algethami, Amani Hassan Alrumaym, Abdulelah Moshferf Albaradi

*Objectives:* Our study aimed to assess the awareness and knowledge of systemic lupus erythematosus (SLE) in Taif, Saudi Arabia among the Taif city population. *Subjects and methods:* A cross-sectional study was started in July 2021 in Taif city on a representative sample of 450 participants. The data collection tool was an online questionnaire, which consisted of sociodemographic data and questions regarding knowledge and awareness of systemic lupus. *Results:* We were able to collect data from 450 participants in response to our questionnaire. Regarding knowledge about SLE, 81.1% of the participants reported that they had heard about SLE mainly from a friend or their colleagues and the Internet. Furthermore, we found that skin was the main organ known by participants to be affected by SLE (43.1%) followed by joints (29.3%), and 52.9 % of participants could identify rash as a symptom of SLE, followed by joint pain (37.3%) and alopecia (17.6%). In general, 5.6% of the participants were able to answer more than 60% of questions correctly, and those of a young age, who were male, and who were more educated had previous knowledge about SLE or diagnoses of SLE and thus showed a higher level of awareness. *Conclusion:* This study revealed that knowledge about SLE among participants was insufficient, especially among the less educated, and there are many misconceptions about basic information regarding this serious disease, which requires public health education.

*Medical Science*, 2021, 25(118), 3365-3372

---

#### **Pneumonia admissions to the ICU: Prevalence of comorbidities and outcome**

Asma K Almalki, Rinad Z Almuteeri, Rahaf H Althalabi, Hanin A Sahli, Fatimah A Hayash, Rahaf H Alrayiqi, Ahmad R Abuzinadah, Ahmed K Bamaga, Faris Alhejaili

*Background:* Intensive care unit (ICU) patients with pneumonia have significant mortality and morbidity. *Objectives:* To identify different types and outcomes of pneumonia cases admitted to ICU in our center and the prevalence of comorbidities in death and survival cases. *Methods:* We enrolled a total of 94 ICU patients presented with pneumonia during January 2015 to March 2020. We described the prevalence of types of pneumonia and associated comorbidities (diabetes (DM), hypertension (HTN), congestive heart failure (CHF), bronchial asthma (BA), and chronic obstructive airway diseases (COPD)) among cases. We also reported the outcome in terms of death rate and length of stay in ICU. *Results:* This study included 94 participants with an average age of 58.3 ( $\pm 18.6$ ) and 43.6% were female. The prevalence of DM, HTN, CHF, BA and COPD were (51.1%, 55.3%, 25.5%, 4.3%, 8.5%) respectively. Pneumonia types were community-acquired pneumonia (CAP) in 62.8%, atypical pneumonia in 15.9%, aspiration pneumonia in 15.9%, and hospital-acquired pneumonia in 3.2%. The crude death rate was 35.1%. Death cases were associated with decompensated heart failure in 18.8%, other coexistent infection in 6.1%, and bedridden cases in 9.1%. HTN, DM, CHF, COPD and BA were similarly distributed between death and survival cases. *Conclusion:* The crude mortality rates of pneumonia patients in the ICU remain high. CAP was the most common type. The prevalence of measured comorbidities was similar between death and survival cases. The strength of care provided to ICU pneumonia cases should not be negatively influenced by the presence of these measured comorbidities alone.

*Medical Science*, 2021, 25(118), 3373-3381

---

#### **Awareness and attitude regarding diabetic retinopathy among physicians in Riyadh, Saudi Arabia**

Fahad M. Almotairy, Mohammed S. Almutairi, Abdulrahman S. Bamhair, Ghassan A. Bagazi, Omar K. Alolayan, Tamim A. Alsuyayh, Ahmed Z. Alkhars, Reem R. Alhuthail

*Background:* Diabetic Retinopathy (DR) is the leading cause of working age population blindness in western society, and it has a prevalence of 36.8% in Saudi Arabia based on a recent study. The aim of this study is to identify the awareness and attitude among physicians who work in different specialties regarding Diabetic Retinopathy in Riyadh, Saudi Arabia. *Methods:* A cross-sectional study utilizing an online-based questionnaire targeted 370 non-ophthalmologist physicians of different specialties in Riyadh city, Saudi Arabia. The questionnaire is composed of three sections, first section covers demographic data of the participants, the second section assesses knowledge about diabetic retinopathy, and the last section is about attitude and practice of the participated physicians regarding diabetic retinopathy. *Results:* Total of 371 participants was included in this study. 124 (33.4%) had low level of knowledge, 176 (47.4%) had moderate knowledge level, and 71 (19.1%) had a high knowledge level. Age, gender, speciality, and years of experience had a significant relationship with knowledge toward diabetic retinopathy. *Conclusion:* Knowledge of DR should be improved in physicians regardless of their specialties. A knowledge level regarding DR is varying among specialties. The study determines that level and highlights the specific level for each specialty.

*Medical Science*, 2021, 25(118), 3382-3391

---

## **Public knowledge, attitudes and practice toward bystander cardiopulmonary resuscitation in Saudi Arabia, a cross-sectional study**

Sami Alamri, Meaad Khan, Mada Jarad, Ahmed Almalki, Talal Alotaibi, Alhassan Ahmed, Muath Alraddadi, Ziad Albalwi, Omniah Altemani, Sarah Alswayed

The “out-of-hospital cardiac arrest” is a term used to describe the event of heart activity cessation that occurs in a setting that is outside of a healthcare center. The bystander cardiopulmonary resuscitation and the induction of the life-saving sequence are mandatory to increase the chance of survival for a victim of cardiac arrest. However, the general public is still in lag in their knowledge in cardiopulmonary resuscitation and hesitates to offer help due to the low number of certified basic life support candidates. Moreover, witnessing a live management of a cardiac arrest event could be a potential influential motive for an individual to attempt acquiring the basic life support skills.

*Medical Science*, 2021, 25(118), 3392-3399

---

## **A descriptive survey investigating awareness of computer vision syndrome among general population in eastern region, Saudi Arabia**

Hussain A Al Ghadeer, Abdulaziz A Al Taisan, Fatema A Almajed, Zainab A Alaithan, Huda M Alethan, Shahad A Alabdrabulrida, Abdullah F Al Muaibid, Hussain R Al Shaban, Yousef A Alhamaid, Mohammed A Alkuwayti

*Background:* Computer vision syndrome (CVS) is a group of vision-related manifestation as result of spending contentious hours on screen. The digitalization is becoming an integral part of our life in which making the eyes, musculoskeletal health related problems increased many folds. This study aims in determining the prevalence of CVS, the contributing risk factors of the syndrome and commonly presenting symptoms as well as assessing the awareness and proper practice of computer use. *Methodology:* A descriptive cross-sectional based study conducted among 1345 participants from eastern region, Saudi Arabia during the period of August to October 2021. The questionnaire collected data is socio-demographic data with CVS symptoms and associated risk factors. Knowledge, attitude and practices toward CVS in participants are also collected. Considering chi-square significant if  $P < 0.05$ . *Results:* A total of 1345 included in the study with a mean age of  $27.3 \pm 14.9$  years old, 66.2% of whom were female and 53.9% were male. The average usages of electronic devices were 1-5 hours reported by 41.9% and 6-10 hours among 39.1%. Exact of 460 (34.2%) participants know about CVS and 52.8% of them applying the 20 / 20 / 20 rule. The frequent complained experience was eye strain followed by headache. *Conclusion:* CVS is common among Eastern province of Saudi Arabia; significant risk factors need to be addressed to reduce the symptom as well as more awareness about CVS is needed. So, it is essential to establish the preventive measures to reduce this syndrome.

*Medical Science*, 2021, 25(118), 3400-3408

---

## **Evaluation of parent's knowledge and awareness towards early orthodontic treatment for their children among Saudi Arabia**

Osama A Basri, Ealyh S Alghamdi, Asmahan Al Amoudi, Lina A Filimban, Hassan A Bin Darwish, Fatemah A Alsaman, Khames Alzahrani

*Background:* According to McNamara, early orthodontic treatment is a therapeutic method used on the deciduous or mixed dentition for the purpose of preventing, intercepting, or repairing any orthodontic disorders. The main purpose of this research was to assess the parents' awareness and knowledge among the early orthodontic treatment for children. *Methodology:* From January 2020 to October 2021, an observational cross-sectional questionnaire survey was performed in Saudi Arabia. Saudi parents from different parts of Saudi Arabia composed the study's sample. As a research tool, structured self-administered questionnaires in English and Arabic were used. Data was gathered and entered into the "Microsoft Office excel software" (2016) for Windows program, which was then analyzed using the Statistical Package of Social Science Software program. *Results:* The study participants included 1344 respondents most of them female 75.8% and only 12.4% male, more than half were between the ages of 25 and 44, 69.3 percent earned a bachelor's degree. 36.9 percent had a monthly salary of more than 10,000 SR. The mean score for the awareness was  $(4.30 \pm 1.26)$ /High level). The mean score for the knowledge was  $(6.25 \pm 1.91)$ /High level). There was a significantly moderate and positive correlation between Pro awareness and knowledge ( $r=0.495$ ,  $p < 0.05$ ), which means when people got a high knowledge also got a high awareness. *Conclusion:* Parents had a modest level of awareness and knowledge regarding their children's early orthodontic treatment. Increased socioeconomic and educational status has a substantial influence on parents' awareness and knowledge.

*Medical Science*, 2021, 25(118), 3409-3416

---

## **CASE REPORT**

### **Protein S deficiency presenting with portal vein thrombosis in a non-cirrhotic pregnant woman: Case report and review of literature**

Ahmed Alshammari

A 27-year-old primigravid patient presented with severe abdominal pain during the 10<sup>th</sup> week of gestation. Blood test results, including those of lipase and liver enzymes, were unremarkable. However, doppler ultrasonography of the abdomen revealed left

portal vein thrombosis. Therapeutic enoxaparin was initiated, resolving the pain. At week 25 of gestation, the patient went into labor and delivered, vaginally, a single, live male infant. The newborn died within one week. Postpartum, she underwent further investigation to identify the cause of portal vein thrombosis. A thrombophilia workup revealed low protein S activity. This case highlights the importance of performing a thrombophilia workup in women with portal vein thrombosis during pregnancy.

*Medical Science*, 2021, 25(118), 3417-3420

---

## ANALYSIS

### **Adverse effects of Pfizer-BioNTech vaccine among adolescents aged 12-18 in Saudi Arabia**

Osama Abdul Rahman Marglani, Mohammed Bakr Qashqari, Meshal Talal Alnashri, Hassan Abdulmohsen Alharbi, Mohammed Ibrahim Namenkani, Nora Talal Alnashri, Mohammed Saad Alamri, Khames Torki Alzahrani

*Background:* Since its discovery in China in 2019, the Coronavirus illness (COVID-19) has posed a worldwide threat. The severe acute respiratory syndrome coronavirus 2 is to blame (SARS-CoV-2). SARS-CoV-2 is a highly contagious and transmissible virus that endangers human life and health. Several COVID-19 vaccinations have been linked to serious side effects. To examine the adverse effects of the Pfizer-BioNTech vaccine among adolescents aged 12-18 in Saudi Arabia. *Methods:* Between August 2020 and September 2021, we conducted a cross-sectional online survey among Saudi Arabian adolescents aged 12 to 18. An online questionnaire was employed to collect data. The social sciences statistical program was used to analyze the data (SPSS, version 27.0). *Results:* The research analyzed 1,599 responses from the online questionnaires. The study participants comprised 45.3% males and 54.7% females. The most common symptoms that were associated with the first dose among the study participants included pain (39.9%), swelling (17.5%), redness (14.1%), warmth (13.8%), fever (16.3%), chills (9.2%), muscle pain (18.5%), joint pain (9.6%), headache (19.0%), and dizziness (10.7%). Comparison to find associations with symptoms were done with gender and previous diagnosis of COVID-19, the results revealed several significant associations with various symptoms reported by the participants ( $P$ -value<0.05). *Conclusion:* The adverse effects of the Pfizer-BioNTech vaccine observed among adolescents in Saudi Arabia included swelling, redness, warmth, fever, chills, muscle pain, joint pain, headache, and dizziness. This study recommends a follow-up on patients with negative side effects to determine the severity of the symptoms and hospitalization rate.

*Medical Science*, 2021, 25(118), 3421-3430

---

### **Smartphone ocular check application accuracy in comparison to traditional test for Saudi school children**

Farah Maqsood, Eman A Alzawadi

*Purpose:* Visual acuity screening in children during and after the Covid-19 pandemic by recommending parents a free and easy Ocular Check Application. *Methods:* Visual acuity (VA) test were conducted for 86 eyes of 43 subjects between the age of 5 to 13 years, using both gold standard chart and Ocular Check application. The participants had gone through ocular screening to avoid amblyopia, strabismus or any ocular pathology. Many tests for screening were done like external eye exam, cover and uncover, light reflex, and ocular alignment examinations. *Results:* The median VA logMAR of all eyes tested using Standard and Ocular Check application were 0.0 LogMar. Intraclass Correlation Coefficient (ICC) showed a strong positive correlation between the two charts (ICC=0.857;  $P$ <0.001) in total number of eyes. In addition, a strong positive correlation was also found between the two charts for each eye (OD: ICC=0.845;  $P$ <0.001, OS: ICC=0.87;  $P$ <0.001). *Conclusion:* VA measurements with Ocular Check application corresponded well to the standard chart, suggesting potential utility of alternative portable VA tests for in-office or remote vision monitoring, particularly during the curfew time in pandemic situation of Covid 19.

*Medical Science*, 2021, 25(118), 3431-3436

---

### **Awareness and perception of medical students of al-baha University regarding eye health**

Ali Hendi Alghamdi, Aimun AE Ahmed, Amjad Yahya Ahmed Alzahrani, Mohammed Abdullah Ibrahim Alghamdi, Modi Fahd Nasser Al Qahtani, Osama Hassan Saleh Alghamdi, Manal Khalaf Ambarak Alzahrani, Osama Abdullah Hassan Alzahrani, Majed Abdulaziz Ibn Ahmed Alghamdi, Linda Saad Abdullah Thafid, Mahadi Bashir

*Introduction:* The study aimed to assess the awareness and perception of Al Baha medical students towards; High altitude, Medications, Contact lenses, pregnancy, and Ultraviolet effects on eye health. *Methods:* The study was cross-sectional student-based involving both male and female medical students who fit the inclusion criteria. The online six-domain questionnaire was used in gathering the required data. Then the validity and reliability were checked, descriptive statistics and logistic regression were used to determine the association between the required exposures and the outcomes in a form of Odd's ratios the significance level was tested at  $p$ -value  $\leq$  0.05. *Results:* A-173 students through 7-medical academic years were enrolled in the study. More than half (55%) were males at the 6th-year academic level (30.6%) and two-third (39.3%) scored a very good Grade Point Average (GPA). Low level of awareness was observed among the males students at early and late academic levels regardless of their GPA scores towards High altitude (OR= -0.463, CI= -1.577- 0.562) and pregnancy (OR= -0.152, CI= -0.488- 0.184) effects on eye health, whilst high awareness level was attained towards the medications (OR= -0.301, CI= -1.287- 0.685) contact lens (OR= -16.029, CI= -39.095- 7.038) and Ultraviolet (OR= -51.895, CI= -147.689- 43.899) effects among female over male students. *Conclusion:* To conclude, the participants showed different awareness levels out of our expectations with respect to the effect of high altitude and pregnancy and high levels regarding medications, contact lens, and Ultraviolet effect on eye health.

### **Premenstrual syndrome among female students at King Abdulaziz University: Prevalence, coping behaviors and health related quality of life, cross sectional study**

Hind Abdulrahim Al Sulami, Ibtisam Aziz Almuntashiri, Sondus Ghazi Almalki, Afnan Saad Alzubaidi, Amjad Abdullah Alzahrani, Ola Essam Halawani, Rajaa Al-Raddadi

*Introduction:* Premenstrual syndrome (PMS) is a cause of conflict in women's lives, in the social relationship and the daily living activity. The prevalence of PMS worldwide is 47.8% which varies from one country to another. *Objectives:* To estimate the prevalence of PMS among female University students and to assess the effect of PMS on their health-related quality of life (QOL) and to identify their coping behaviors against PMS. *Methods:* This is Cross-section analytical study applied on KAU female students, Jeddah Saudi Arabia during the year of 2020. *Results:* A total of 602 students were approached. PMS was seen in 50.6% of our sample, among which 24.1% had 'Borderline to mild PMS symptoms, 12.5% had 'Mild to moderate PMS' symptoms, 8.5% had 'Moderate to Severe PMS' symptoms, 4.3%, and 1.2% had 'Severe PMS' and the 'Disabling PMS' symptoms respectively according to the ACOG criteria. Regarding the quality of life, our results revealed that the PMS group had significantly lower scores than the non-PMS group for physical and mental health-related quality of life. The most common methods used as copying behavior are hot water bottle and hot bath. *Conclusion:* The results of our study unveiled a relatively high prevalence of PMS syndrome and a significant negative effect of PMS on the QOL.

Medical Science, 2021, 25(118), 3446-3454

---

### **Comparative study between uniportal and triportal VATS in the management of primary spontaneous pneumothorax**

Ehab F Salim, Gaser A Ali

*Background:* Nowadays, video-assisted thoracoscopic surgery (VATS) is the management of choice for primary spontaneous pneumothorax (PSP). This prospective study was designed to address the efficacy and the possible advantages of using uniportal VATS when compared with triportal VATS in management of PSP. *Method:* A total of 80 VATS procedures were randomly done for PSP. 40 procedures were performed with uniportal VATS compared to 40 procedures performed with triportal VATS in the management of PSP. Patients were followed-up for 12 months postoperatively. *Results:* Both uniportal and triportal VATS have the same efficacy in managing PSP. There is no difference between both techniques regarding postoperative bleeding and air-leak ( $p=1.0$ ). Uniportal VATS has a shorter operative time ( $66.32\pm 3.46$  vs  $72.95\pm 6.08$  minutes,  $p<0.001$ ). Adding another port wasn't needed in uniportal VATS, while it was needed in 6 (15%) patients in triportal VATS group ( $p=0.026$ ). Uniportal VATS has a statistically significant difference regarding postoperative pain duration ( $3.80\pm 1.04$  vs  $4.32\pm 0.47$  days,  $p=0.005$ ), early postoperative pain scale by visual analogue pain scale ( $1.77\pm 1.02$  vs  $2.37\pm 1.25$ ,  $p=0.022$ ), chest tube duration ( $4.85\pm 0.57$  vs  $5.07\pm 0.26$  days,  $p=0.029$ ), postoperative paresthesia ( $0.05\pm 0.22$  vs  $0.90\pm 0.74$ ,  $p<0.001$ ), postoperative hospital stay ( $5.45\pm 0.50$  vs  $5.87\pm 0.75$  days,  $p=0.004$ ), and better cosmesis ( $2.35\pm 0.62$  vs  $1.92\pm 0.65$  on scale 1-3,  $p=0.004$ ). *Conclusions:* Uniportal VATS is a safe and a feasible approach in management of PSP. Uniportal VATS is a good alternative to triportal VATS due to its efficacy in decreasing postoperative pain, paresthesia, total duration of hospital stay and in providing better cosmesis.

Medical Science, 2021, 25(118), 3455-3462

---

## **CASE REPORT**

---

### **Huge Antrochoanal polyp with unusual presentation**

Fatimah Saleh Alkhalifah, Omimah A Abdullah, Khalid A Alyahya, Abdulwahab Abdullatif Alyahya

Antrochoanal polyps (ACPs) are an infrequent type of nasal polyp that account for about 3-5% of all type of nasal polyps. In our case, we report a 70-year-old female with an unusually huge antrochoanal polyp that presents with severe epistaxis episodes, which were managed by complete excision via endoscopic sinus surgery.

Medical Science, 2021, 25(118), 3463-3469

---

## **ANALYSIS**

---

### **Visual outcomes and patient's satisfaction after LVC surgery: Cross sectional study among patients who experienced LVC procedure for myopia**

Abdlrahman Alamri, Sara Almeahmadi, Ahmed Abulfaraj, Sarah Alarfaj, Abdalaziz Ibrahim Saadi, Muath Alotaibi, Alwaleed Alshehri, Khames T Alzahrani

*Background:* Despite a percentage of failure due to the recurrence of myopia after surgery, which produces diminished gratification for the patient and surgeon, laser vision correction (LVC) surgery is the most frequent therapy for myopia with great results. To evaluate patient satisfaction with LVC surgery results, this provides an opportunity to investigate in our region. This study aims to measure the visual outcomes of LVC procedures on myopic patients, mainly effectiveness and patient satisfaction after the surgery. *Methodology:* From January 2020 to September 2021, a cross-sectional study was conducted in Saudi Arabia. A total of 884 male and female patients of all ages, who are residents of Saudi Arabia, had previous myopic Laser Vision Correction (LVC). Online Google

surveys were used to collect demographic data, age, gender and patient location. SPSS 26 was used for data entry and analysis. *Results:* There have been a total of 884 participants, 61.8% aged between 20 - 30 years old. 43.1% were males, and 57.9% were females. 37.6% had the surgery 1 - 4 years ago, 35.5% had it less than a year ago, and 26.9% more than five years. 68.6% were completely satisfied, 26.5% were satisfied, 1.8% was not completely satisfied, 2.5% were not satisfied, and 0.7% was very unsatisfied. *Conclusion:* The study shows a high level of satisfaction compared to international figures. Dry eye is the most common complication after surgery. Satisfaction with surgery results was significantly associated with gender, age, and place of residence in the Kingdom.

*Medical Science, 2021, 25(118), 3470-3478*

---

### **Prevalence of irritable bowel syndrome and its associated risk factors among medical students in Riyadh, Saudi Arabia: A cross sectional study**

Samar S Zarnoog, Abdullah N Al Omrani, Arwa A Alrumaih, Hind A Alabdullatif, Firas K Almarri, Rahaf I Alshareef, Hissah A Alkharan, Naif H Alsanad, Faisal K Alyahya, Raziq Anwer, Arezki Azzi

*Background and Objectives:* Irritable bowel syndrome is associated with psychological disorders, including stress, anxiety, and depression which were reported to be high among medical students. This study investigates the prevalence of IBS and associated risk factors among medical students in Riyadh, Saudi Arabia. *Methodology:* A cross-sectional online survey study collected responses from medical students in Riyadh using a 24-items questionnaire to evaluate the prevalence of IBS and its associated risk factors among medical students. All statistical analyses were done using (IBM) SPSS version 19. *Results:* A total of 389 participants filled study questionnaire; female gender was significantly higher than males in the diagnosed IBS participants ( $p = 0.028$ ). There was a notable difference between the number of participants with a physician IBS diagnosis and risk categories ( $p < 0.001$ ). No significant correlation was observed in risk subgroups with sleeping duration ( $r = 0.095$ ,  $p = 0.06$ ) and coffee consumption ( $r = 0.063$ ,  $p = 0.214$ ). A significant difference was noted in the risk subgroups regarding having episodes of anxiety, stress, or depression ( $p < 0.001$ ). Counting on self-reporting IBS diagnosis by a physician, prevalence is 12.6%, 95% CI (9.5 to 15.9). *Conclusions:* In Riyadh, Saudi Arabia, our study found that medical students dealing with anxiety and depression were at high risks of developing IBS. Thus, anti-stress measurements and early screening are highly needed. Moreover, implementation of proper awareness and preventive measures could positively impact with behavioral therapy on the quality of life of the students and to lessen disease burden.

*Medical Science, 2021, 25(118), 3479-3488*

---

### **The prevalence and factors associated with musculoskeletal pain among medical students at Ibn Sina National College, Jeddah, Saudi Arabia**

Intessar Sultan, Rania Mohammed Algouzi, Mozoan Abdullah Alasmari, Ruya Adel Abdullah

*Background:* Musculoskeletal pain (MSP), especially low back pain (LBP); ranked one of the main leading causes of disability particularly among those with significant physical and psychological efforts. *Objectives:* The study aimed to describe the pattern of MSP among medical students and its underlying factors. *Methods:* A cross-sectional survey was conducted online at our institution from April through June 2021. The survey included the demographic and clinical data, lifestyles, psychological conditions and the validated Oswestry low back pain questionnaire to assess the disability index. *Results:* Among 354 students, 51.1% had MSP mainly LBP (82.3%); and of minimal disability (72.9%). Students with MSP showed significantly higher BMI ( $p=0.000$ ), duration of computer use ( $p=0.009$ ), both depressive ( $p<0.001$ ) and psychosomatic ( $p=0.013$ ) symptoms, with lower smoking ( $p=0.047$ ), and exercise duration ( $p=0.001$ ). Moderate disability was reported in 27.1% with functional limitations in lifting, pain severity, and sitting. Only few students with MSP (21%) sought medical consultation. Significant predictors to disability index were age (OR: -0.22, 95% CI -2.21- -0.371,  $P=0.006$ ), duration of computer use (OR: -0.15, 95% CI: -3.58- -0.06,  $P=0.043$ ), medical consultation (OR: 0.29, 95% CI: 1.03-12.09,  $p=0.020$ ), radiological (OR: -0.32, 95% CI: -16.24- -2.99,  $p=0.005$ ), and laboratory investigation, (OR: 0.20, 95% CI: 0.96-10.40,  $p=0.019$ ). *Conclusion:* Our study provides an alarming finding of a high prevalence of MSP mainly LBP among medical students of both genders while, the pain significantly affects their daily activities and psychological condition.

*Medical Science, 2021, 25(118), 3489-3496*

---

### **Laboratory Markers in Egyptian Children with covid-19**

Hanan Hanna, Hossam Hosny

*Background:* As Coronavirus disease 2019 (COVID-19) is a global pandemic infectious disease, medical staff all over the world are still struggling with the management of the disease. Biochemical and hematological changes can be considered as prognostic markers. *Methods:* A total of 65 Egyptian children positive covid-19 were enrolled, between 5-12 years. *Results:* White blood cell count was significantly low (mean=  $4968 \pm 742.6$ ,  $p \leq 0.001$ ). Lymphocytopenia was significantly low (mean=  $1529.9 \pm 493.9$ ,  $p \leq 0.001$ ). N/L showed statistically significantly high (mean=  $2.45 \pm 0.72$ ,  $p \leq 0.001$ ), platelets showed statistically significantly low (mean=  $196.7 \pm 82.58$ ,  $p \leq 0.001$ ) both correlated to severity. Plat/Lymph showed a statistically significant difference between groups. CRP increased than normal (mean=  $12.14 \pm 3.3$ ,  $p \leq 0.001$ ), and was negatively correlated with Lymphocyte %. D-dimer slightly increased than normal and showed statistical difference between groups. *Conclusion:* This study declares that pediatric COVID-19 showed various

prognostics as CRP, thrombocytopenia, lymphopenia, neutrophil-to lymphocyte ratio, platelet-to lymphocyte ratio. As they are easily accessible, the majority of labs not expensive and showed a very good correlation with prognosis.

*Medical Science*, 2021, 25(118), 3497-3504

---

### **Knowledge and attitude of medical physicians and dental practitioners towards halitosis in Saudi Arabia**

Tariq Wahass, Hazim Alharkan, Ali Alshamari, Nader Alamri, Anmar Alarnous, Ahmad Assari

*Background:* Halitosis is a prevalent condition and causes a lot of embarrassment and psychological distress to individuals. The bad smell mainly arises because of protein degradation by gram-negative anaerobic bacteria which produce volatile Sulphur compounds. The objective of this study was to evaluate the knowledge and attitude of dental practitioners and medical physicians towards halitosis in terms of causes, assessments, and management in Saudi Arabia. *Methodology:* Dentists and Medical physicians of different specializations from Saudi Arabia were invited to participate in this study. A self-administered questionnaire was designed with twenty items related to demographical and halitosis etiology, diagnosis, and therapy. The questionnaire was distributed through Online Platforms and in-person. *Results:* Totally, 191 (50.7%) Dentists and 186 (49.3%) Medical Physicians making it to 377 healthcare professionals participated in this study. Nearly two-thirds of the participants were of Male Gender and the majority of these participants were practicing in the Central Region of Saudi Arabia (80.6%). About 80% and 60% of Dentists and Medical Physicians respectively reported that they don't have any diagnostic protocol for Halitosis. In addition, both Dentists (30%) and Medical physicians (50%) reported that they didn't have adequate teaching/training regarding Halitosis during under graduation. *Conclusion:* We observed inadequate knowledge about Halitosis among both professionals i.e. Dentists and Medical Physicians. However, Medical Physicians had far less knowledge in certain areas. Both professionals require more training on this subject and also better inter-professional coordination and communication.

*Medical Science*, 2021, 25(118), 3505-3514

---

### **The relationship between pregnancy rhinitis and parity, preconception atopy and maternal age, a study from Al Ahsa, Saudi Arabia**

Khalid Alyahya, Fatimah Alkhalifah, Zainab Alshaqaaq, Lamis Al Jamaan, Zainab Al Shakhs, Abdullah Alarfaj

*Introduction:* Allergic rhinitis has a high prevalence with significant morbidity and loss of patients' productivity. Its cardinal symptoms include nasal congestion, rhinorrhea, sneezing, and itching. *Aim:* Study the relationship between parity, preconception atopy, maternal age and pregnancy rhinitis in Al-Ahsa, SA. *Materials and methods:* This study was across-sectional study conducted among women who experienced pregnancy rhinitis in Al Ahsa, SA from July 2021 to October 2021. Participants completed a self-directed questionnaire that include; socio-demographic characteristics, characteristics of women before and during pregnancy and Nasal Obstruction Symptom Evaluation. All women who are pregnant or have been pregnant were included in this study. Data analyzed using SPSS version 26 (SPSS, Armonk, NY:IBM Corp.). *Results:* 316 women were able to recruit with 34.2% being 19 – 25 years. The prevalence of pregnancy rhinitis was 39%. 38.6%, 14.2%, 20.6% and 3.8% compromising of mild, moderate and severe. The most common symptom of pregnancy rhinitis was sneezing (40.2%). Risk factors were atopy/skin allergy or eczema, being 18 – 25 years at first pregnancy, family history of allergic rhinitis (AR) and nasal problems during pregnancy. *Conclusion:* More than one-third of this study population had experienced pregnancy rhinitis. Among all of the assessed factors we found that pregnancy rhinitis is influenced by preconception atopy, maternal age at first pregnancy, family history, and nasal symptoms during pregnancy. However, parity was not.

*Medical Science*, 2021, 25(118), 3515-3521

---

### **The relationship of anxiety symptoms on self-care management among diabetic patients in Al-Ahsa, Saudi Arabia**

Ashjan Albarak, Ayman Albarrak, Fathia Omer Mohamed

*Aim:* the purpose of the study to investigate the relationship between anxiety and self-care management in patients with DM 2 in Al-Ahsa, Saudi Arabia, and to explore a difference between anxiety and self-care management in patients with DM 2 according to gender and to assess a relationship between anxiety and self-care management in patients with DM 2 according to HbA1c and the difference between anxiety and self-care management in patients with DM 2 according to age groups. *Methods:* The study will follow cross-sectional study design. The sample selected using convenience sample technique and will follow all ethical consideration. The tool for data collection will be 7-item Generalized Anxiety Disorder measurement (GAD-7) and Diabetes Self-Management Questionnaire (DSMQ). Data will be analyzed through (SPSS 22) software. *Results:* There is no significant correlation between GAD-7 and DSMQ in which the P-value is 0.17 and is not less than 0.05 so the null hypothesis is accepted. Additionally, the correlation between GAD-7 and HbA1c is non-significant, and P-value is 0.104. T-test was applied to assess the mean difference of GAD-7 among gender. The P-value is 0.78 so there is no significant difference in mean of GAD-7. *Conclusion:* This study found detections of anxiety symptoms that will help to improve in patient's well-being and for the long-term might affect in less diabetes complications and reduced mortality rate.

*Medical Science*, 2021, 25(118), 3522-3529



## CASE REPORT

---

### **Hyaline fibromatosis: Two case reports and literature review**

Abdulatif Abuhaimed, Meshal Almuniif, Mashaal Alswaidan, Sarah Aldosari, Abdulmalik Alsahhaf

Hyaline fibromatosis (HF) is a rare genetic disease, with two types that have an early onset. The disease is distinguished by hyaline deposition at different areas in the body, osteolytic bony lesions, and gingival hypertrophy. There are two variants of the disease, juvenile and infantile HF. In this report, we present two cases of HF that were seen in National Guard Hospital within Riyadh – Kingdom of Saudi Arabia.

*Medical Science*, 2021, 25(118), 3530-3534

## RESEARCH

---

### **Auditory rehabilitation on congenital deafness pediatric patients after cochlear implantation**

Nguyen Thanh Vu, Le Tran Quang Minh, Nguyen Thanh Vinh, Tran Phan Chung Thuy

*Purpose:* This study aimed to determine the effect of auditory rehabilitation in children after 1 year of cochlear implantation and related factors. *Method:* Retrospective and prospective descriptive study was conducted at the Ho Chi Minh City Ear-Nose-Throat Hospital from January 2018 to April 2020. Determine the effect of auditory rehabilitation in children according to the CAP scale at 3, 6, 9 and 12 months after implant activation. *Result:* Thirty-nine children with congenital deafness who received cochlear implants were included in this study. At 1 year after CI, all children reached the CAP score at 5 points or more and 87.18% of cases had CAP score from 6 to 7 points. The mean CAP scores at 12 months after CI were  $6.18 \pm 0.64$  points. This study found out the effects of number of CI, time of learning auditory rehabilitation and family cooperation on CI outcome. Children with bilateral CI were more successful in auditory performance than children with unilateral CI (mean CAP scores:  $6.38 \pm 0.62$  vs  $6.04 \pm 0.64$ ). In the group of children with cooperative parents, children who studied at class for “5 hours per week or more” had better auditory rehabilitation than those who studied for fewer hours (mean CAP scores:  $6.25 \pm 0.64$  vs  $6.20 \pm 0.68$ ). *Conclusion:* CAP score of pediatric patients tend to increase significantly one year after the operation, almost reach the normal score.

*Medical Science*, 2021, 25(118), 3535-3540

### **Antioxidant activity derived from *Punica granatum L.* peels extract in micetotoxicity induced by a mixture of *Nerium oleander* extract, acetaminophen and gentamicin**

Naeem F Qusty, Ahmad A Alghamdi, Ayman Al-Hazmi, Baraa J Bandah, Mohammed H Mukhtar, Mai Alhadrami, Ibrahim F Halawani, Abdulraheem A Almalki, Hamza M Assaggaf, Abdullah F Aldairi

Reactive oxygen species (ROS) are formed through the body's metabolism. Uncontrolled production of ROS occurs during oxidative stress-induced in various diseases, such as diabetes mellitus. Polyphenolic compounds are widely recognized to possess a wide range of biological properties including anti-inflammatory and anti-thrombotic properties including. This study was aimed to evaluate the antioxidant activity of the *Punica granatum L.* peels extract in mice toxicity induced by a mixture of *Nerium oleander* extracts, acetaminophen and gentamicin. *Methods:* 40 mice were classified into four groups: Group 1 (control group), Group 2 (*Punica granatum L.* cortex control group), Group 3 (toxin control group), Group 4 (toxin and *Punica granatum L.* cortex extract). Weights of the mice showed significant differences between all groups ( $p < 0.05$ ). The serum HDL-C level was higher in Group 2 than control group ( $p < 0.05$ ). Biochemical markers were significantly decreased in Group 4 compared with toxins group ( $p < 0.01$ ). In cardiac tissue, GSH-Px, GSH, and catalase levels increased in Group 4 compared with its level in the toxins group ( $p < 0.01$ ,  $p < 0.05$ , and  $p < 0.05$ ). In hepatic and kidney tissues, catalase and GSH-Px levels had been higher in Group 4 compared with toxins group ( $p < 0.01$  and  $p < 0.05$ ). *Conclusion:* *Punica granatum L.* peels induced hypolipidemic effect. This effect might be anticipated to the potential antioxidant effect against cholesterol oxidation. There is a protective effect of the extract on liver histology against mixture of toxins. Also, the extract protects the heart from necrosis and massive haemorrhage.

*Medical Science*, 2021, 25(118), 3541-3550

## CASE REPORT

---

### **Fibrolipomatous hamartoma emerging from the median nerve associated with macrodystrophia lipomatosa**

Feras Altumaihi, Razan Altumaihi, Raied Oufi, Hattan Aljaaly, Basim Awan

Fibrolipomatous hamartoma with macrodystrophia lipomatosa is a rare congenital condition characterised by a benign enlargement of the peripheral nerves and surrounding fibro-adipose tissues. A 7-year-old child was referred to our plastic surgery clinic with complaints of a massively enlarged right middle finger, a moderately enlarged index finger and a puffy hand. He had palpable, nontender enlargements of the fibro-adipose tissues ( $13 \times 6 \times 4$  cm and  $8 \times 4 \times 2$  cm) extending to the palm and the wrist. They were slowly growing and had been noticed since birth. The diagnosis was based on magnetic resonance imaging. Functional and cosmetic considerations are important in such cases, and multiple debulking surgeries are often required.

*Medical Science*, 2021, 25(118), 3551-3556

---

## **The hidden truth about the development of myelodysplastic syndrome following immunosuppressant therapy for systemic sclerosis**

Abishek Chakkravarthi M, Azeem I, Aswin Manikandan, Natarajan Suresh

Many rheumatic conditions, including Systemic sclerosis, increase the risk of cancer. Solid tumours are most often found in the lungs, oesophagus, or breast. A higher risk of haematological cancers also associated with some DMARD therapeutic drug for systemic sclerosis. Myelodysplastic syndrome develops as a result of DMARD therapy used to treat systemic sclerosis, especially the drug azathioprine and cyclophosphamide, which has been linked to increase risk of developing myelodysplastic syndrome as compared to mycophenolate mofetil and methotrexate, according to reports. Another research found that a low dose of methotrexate can cause myelodysplastic syndrome in people with rheumatoid arthritis. There has been a rare reported case of myelodysplastic syndrome (MDS) secondary to Systemic sclerosis in some literature. Our goal is to raise concern about the growing prevalence of Myelodysplastic Syndrome in patients with Systemic Sclerosis that have been treated with azathioprine, cyclophosphamide and methotrexate, as was the scenario in our case.

*Medical Science*, 2021, 25(118), 3557-3561