



05

ABSTRACT
BOOK



MESSAGE

It is a milestone event in the college to complete the 5th undergraduate research module for final year medical students enrolled in the revised curriculum. It is a competency based MBBS program by design. It was launched during the academic year 2014 – 2015.

This SCIENTIFIC MEETING is an opportunity for medical students to present their research findings. This scientific gathering meets a structural need of future doctors, who rightly feel the incredible importance of exchanging medical knowledge acquired from varying perspectives.

This book presents the summaries of the participants' research projects. Today we present 6th year medical students (123 males & 123 females) with their research products, 46 titles in basic and clinical medical sciences.

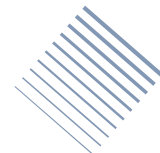
Taking part in course committee contributes to the development of important skills such as scientific writing and research opportunity provided by college of medicine at Imam Abdul Rahman bin Faisal University.

seven months ago, we started the journey of organizing the research course 614. It has been a blessing to be working together with so many people. We would like to take this opportunity to thank all medical departments at college of medicine which supported us in many ways.

All the Best

Prof. Mohammed Taha Al-Hariri

Course Coordinator of Student RESEARCH Course



Dr. Bassam Hassan Awary
Dean of College of Medicine

Prof. Mohamed Saleh Madadin
Vice Dean for academic Affairs

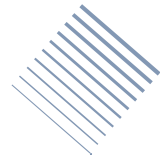
Dr. Mohammed Abdullah M. Aljumaan
Vice Dean for Clinical Affairs

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Mr. Mohammed Omer Elamin
6th year coordinator

RESEARCH PROJECT MODUL COMMITTEE

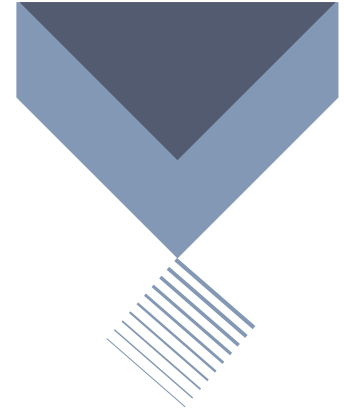




May 18



PROGRAM

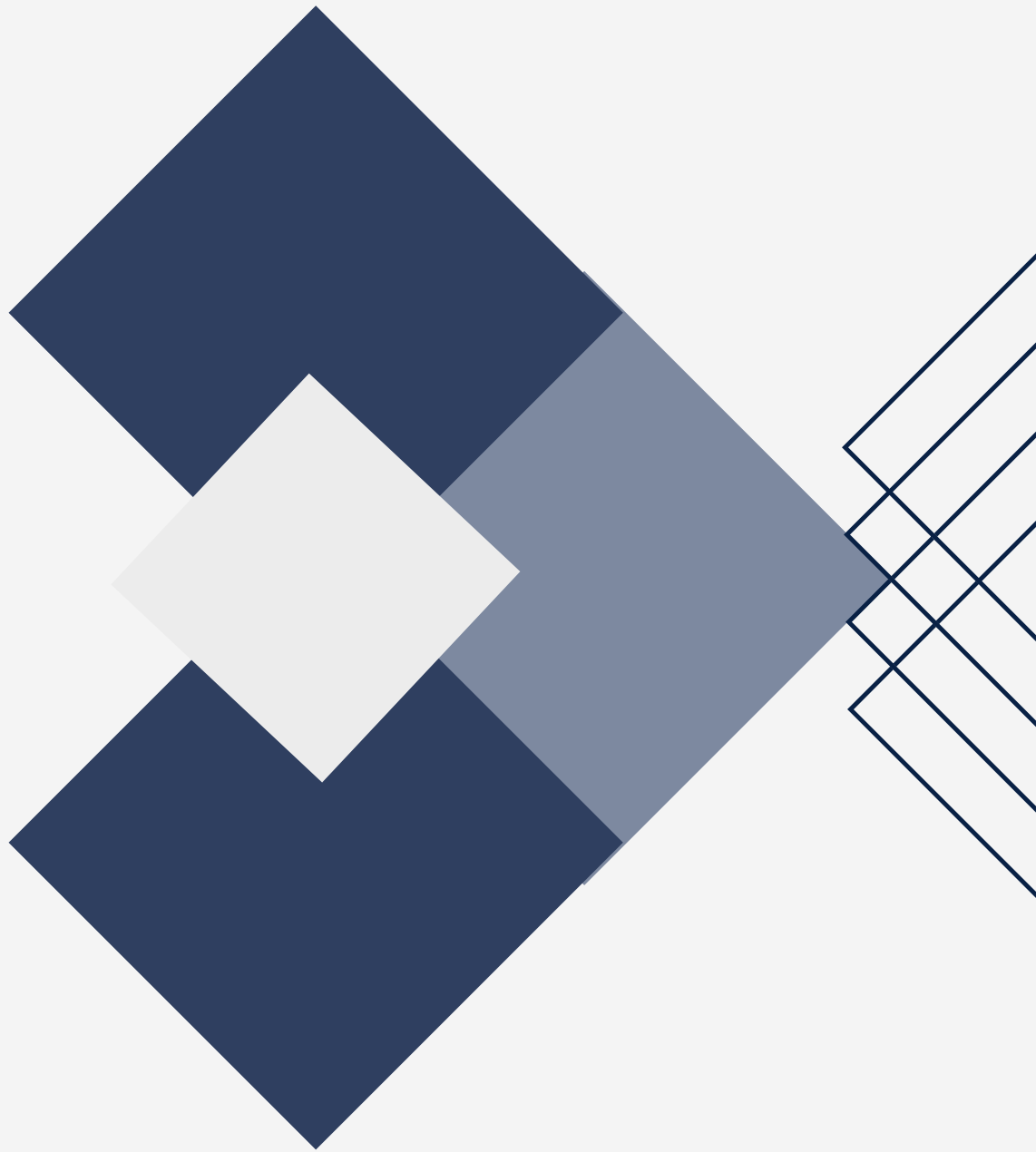


5TH MEDICAL STUDENT RESEARCH DAY

PROGRAM - MAY18, 2022



| TIME | SUBJECT |
|----------------|-------------------------------|
| 08:00 - 09:45 | Registration |
| 09:00 - 09:30 | Welcome Remarks |
| 09:30: - 10:00 | Oral presentation |
| 10:00-10:15 | Honoring outstanding students |
| 10:15 - 11:00 | Poster Presentation |
| 11:30 | Prayer / Coffee Break |



Female Groups



Group 01

Department: Radiology

Students:

Zainab AlTurifi

Shaima Bin saad

Wala Almuhanha

Fatimah Albaqshi


Buthaynah Almuhanini,

Nora Almomen

Supervisor: Dr. Afnan Almuhanha



Sonographic Assessment of Axillary Lymph Nodes Post Covid-19 Vaccine



Abstract

Background: development of axillary lymphadenopathy post COVID-19 vaccine became an area of concern. It needs to be addressed and investigated to provide updated data that could contribute to the management and imaging guidelines.

Objectives: this study aims to detect possible changes in lymph nodes after COVID-19 vaccination, decrease the rate of over-investigation and medical costs and identify possible predisposing factors that could trigger the development of lymphadenopathy.

Methods: retrospective cohort study conducted in King Fahad University Hospital, a secondary hospital in Al Khobar, KSA, on a total of 1400 vaccinated patients who underwent axillary US from December 2020 till 2nd of October 2022. All required data were collected using an excel sheet and analyzed by Statistical Package for Social Sciences.

Sonographic Assessment of Axillary Lymph Nodes Post Covid-19 Vaccine

Results: out of 1183 cases, 460 (38.9%) cases had abnormal lymph nodes post COVID-19 vaccine based on US, while LNs were normal among 723 (61.1%). The prevalence of axillary lymphadenopathy was significantly more common in females than males (39.1% of females versus 22.2% of males' cases ($P=.049$)). In addition, Lymphadenopathy were more prevalent in those who receive COVID-19 vaccine recently in less than 4 weeks compared to others who received the vaccine 4-8 weeks ago, 8-12 weeks ago and more than 12 weeks ago (100% vs 73.3% vs 34.2% vs 72%, ($P=.001$)).

Conclusion: in conclusion, a significant number of patients were found to have lymph node changes after receiving COVID-19 vaccine. The only predisposing factors identified to be associated with the lymphadenopathy development were gender (females more than males) and duration since receiving the vaccine (4 weeks).

Key words: Covid-19, Lymphadenopathy, Ultrasound, Covid-19-Vaccine,

Group 02

Department: Orthopedic

Students:

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Reem Althwanay

Razan Alshehri

Randa Alswed

Razan Alharbi

Supervisor: Dr. Ammar Alomran



Are Lead Aprons A Source of Infection?



Abstract

Background: Radiation Personal Protective Equipment (RPPE) are used to protect the person wearing them from radiation exposure in various medical settings. This equipment is usually placed on racks in front of the operation room and are not assigned to a specific person, so they can be used by anyone then returned to the same rack afterwards.

Objective: The study aims to assess the rate and extent of contamination in lead aprons. In addition, we aim to identify the effectiveness of the cleaning process in reducing the amount of microorganism growth in lead aprons.

Methods: A Cross-sectional study was conducted in King Fahad University Hospital (KFUH) in the Eastern Province of Saudi Arabia. The samples were collected from 20 out of 30 aprons in the hospital operating room over a span of 2 months. The samples were collected pre- and post-cleaning. In addition, further testing was used at the Imam Abdulrahman bin Faisal University (IAU) microbiology laboratory to identify the organisms.

Are Lead Aprons A Source of Infection?

Results: The results of the study showed that out of 120 samples taken, 62 were positive and 58 were negative. The positive samples contained Micrococcus, Coagulase-negative Staphylococci, Methicillin-sensitive Staphylococcus aureus, Pseudomonas stutzeri, yeast, Haemophilus spp, Corynebacterium diphtheriae, and Klebsiella were detected in different samples. There was a significant reduction in the level of contamination pre and post cleaning (37% vs. 25% respectively, $P=0.023$). The highest level of growth detected was inside the apron ($P<0.001$).

Conclusion: The majority of the samples that were taken from the aprons were contaminated, and the cleaning process showed a significant reduction in contamination, however, concerning organisms were still detected after the cleaning process. This indicates the need for a better cleaning protocol.

Keywords: Lead aprons, Swabs, Microorganisms, Contamination, Cleaning



Group 03

Department: Biochemistry

Students:

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Alia Almuhanha

Fatimah Alabbad

Hadeel Almomattin

Ragad Alsultan

Zahra Shaiban

Supervisor: Dr. Cyril Cyrus, Dr. Chittibabu Vatte

The Impact of COVID-19 Vaccines on the Glycemic Control and
The Development of Acute Complications in Type 1 and 2
Diabetes:
A Cross-Sectional Study in The Eastern Province of KSA

Abstract

Background: COVID-19 vaccines were developed to control the pandemic spread as they have been proven to be efficient and safe. However, the likelihood of post-vaccination worsening glycemic control and adverse events has been noted in several studies.

Objective: To determine the effect of COVID-19 Vaccines on the glycemic control and the development of hyperglycemic emergencies among type 1 and 2 diabetes patients.

Methods: A cross-sectional study was conducted on 409 participants diagnosed with type 1 and 2 diabetes, aged 18 years and above who have received at least a single dose of COVID-19 vaccines.

The Impact of COVID-19 Vaccines on the Glycemic Control and The Development of Acute Complications in Type 1 and 2 Diabetes: A Cross-Sectional Study in The Eastern Province of KSA

Results: Among the total 409 diabetes patients, the majority have reported general mild post vaccination symptoms regardless of diabetes duration and type. Severe diabetic emergencies post-vaccination has been mostly reported in long standing diabetes patient. Furthermore, it has been found that diabetes related complications and emergencies were more profound among those who have received Pfizer vaccine. Nonetheless, occurrence of adverse events could be possibly as a result of number of factors including the duration of diabetes, whether the patient had COVID-19 infection and comorbidities.

Conclusion: COVID-19 vaccinations have the potential to influence diabetic patients in regard to acute glycemic complications. However, vaccine efficiency and benefits are superior to the side effect of COVID-19 vaccine as these adverse events only affect small number of individuals. The need for post-vaccine monitoring of diabetes patients is suggested.

Keywords: Diabetes, Vaccine, COVID-19, Hyperglycemic emergencies, Diabetes complications



Group 04

Department: Microbiology

Students:

Ghadeer Almoallem

Wasayf Almogaliq

Laila Alibrahim

Fatimah ALOqayli

Shoq Alshammari.

Supervisor: Dr. Maher Alqurashi, Dr. Ayman El-Badry,
Dr. Nehal Hosin

Abstract

Background: In both industrialized and developing nations, gastrointestinal infections among children with gastrointestinal disorders are a serious issue and concern for the overall well-being, resulting in high morbidity and mortality. Yet, recent information on the burden of gut pathogens among patients with gastrointestinal disorders in the Eastern Province of Saudi Arabia focused on the pediatric age group is insufficient.

Objectives: This study aims to determine the yield of stool testing and the burden of gastrointestinal pathogens in children with gastrointestinal disorders. Furthermore, studying the association between demographic and clinical patients' characteristics and yields of stool testing.

Methods: This is an observational cross-sectional hospital-based study. The study was performed from October 2022 to May 2023 in the Eastern Province of Saudi Arabia. Stool samples were collected from all pediatric patients from birth to 18 years old who presented to the hospital and were referred to microbiology laboratories for stool analysis.

Gut-Pathogens Burden in Pediatric Patients with Gastrointestinal Disorders in Eastern Province, Saudi Arabia.

Results: Among 142 samples analyzed, *Salmonella* species. was the only detected organism in cultured stool with a prevalence of 5.6% %. *Clostridium difficile* using PCR assay and *Helicobacter pylori* using immunoassay were detected in 2.1%, and 0.7% of the children, respectively. Coinfection with more than one pathogen was detected only in stool of one child. The presence of *Salmonella* species showed a statistical significance association with age, toddlers showed the highest prevalence. One out of 8 positive *Salmonella* spp. cases had GIT comorbidity. No parasites or viruses were detected. Stool leukocytes, occult blood, and calprotectin were found to be present in 18.3%, 6.3%, and 16.2%, of the patients, respectively without statistically significant association with pathogen detection.

Conclusion: *Salmonella* species was the most prevalent organism detected. However, further studies are needed on this topic with a focus on possible predictive factors for gut pathogens, and their possible association with other gastrointestinal disorders.

Keywords: Gut pathogens; Gastrointestinal disorders; Stool analysis; Pediatric patients; Eastern Province Saudi Arabia



Group 05

Department: Anesthesia

Students:

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Batool Alshullah

Rawan Alkhalifa

Lamis Alshaqq

Ghadeer Alawami

Asaleh Ahmed.

Supervisor: Dr.Zainab Al-Zayer, Dr.Zainab Alhashim

Awareness About the Role of Anesthesiologists Among health Care Workers in The Eastern Province of Saudi Arabia.



Abstract

Background: Anesthesia still considered a modern medical discipline, and the role of anesthesiologists is an undervalued subject and relatively unknown neither by healthcare workers nor by the general population.

Objective: This study aimed to evaluate the level of awareness about the role of anesthesiologists among healthcare workers not working with this specialty in the Eastern Province of Saudi Arabia.

Methods: A total of 377 healthcare workers from various healthcare settings participated in the study.

Results: The results showed that the majority of participants correctly identified the anesthesiologist as the responsible party for different aspects of anesthesia management. However, a small percentage of participants identified other healthcare professionals as responsible for these tasks, and in some cases, participants responded that they did not know who was responsible. The study also found that job titles significantly affected the level of knowledge about anesthesia care.

Conclusion: Overall, the study highlights the need for increased awareness and education about the role of anesthesiologists among healthcare workers.

Key words: Anesthesia, Role of anesthesiologists, knowledge, Healthcare workers.



Group 06

Department: Family Medicine

Students:

Danah Almutailiq

Razan Almaghrabi

Danyah Almohsen

Rabab Alzanadi

Supervisor: Dr. Tajammal Mustafa, Dr. Assim Al-Abdulkader

Assessing the Knowledge and Barriers to Screening for Colorectal Cancer Using the Health Belief Model (HBM) Among 40 Years or Older Individuals Attending Primary Health Care Clinics in Al-Khobar, Eastern Province, Saudi Arabia.

Abstract

Background: Colorectal cancer (CRC) ranks third as most common cancer in the world and 4th common cause of deaths due to cancer. In Saudi Arabia (SA), CRC is the commonest cancer in males and third commonest cancer in females. Early screening reduces the risk of CRC and death. However, there is a lack of awareness regarding CRC screening in SA.

Objective To assess the knowledge and barriers to screening for CRC using the health belief model (HBM) among 40 years and older individuals attending primary health care clinics (PHCCs) in Al-Khobar, SA.

Methods: This study enrolled 40 year or older Saudis visiting PHCCs in Al-Khobar. Data collected using a self-administered questionnaire or directly interviewing the selected participants. Information sought included sociodemographics, past CRC screening, CRC knowledge, and HBM items. Data analysis performed using SPSS; Chi-square test and ANOVA were used to determine statistical significance.

Assessing the Knowledge and Barriers to Screening for Colorectal Cancer Using the Health Belief Model (HBM) Among 40 Years or Older Individuals Attending Primary Health Care Clinics in Al-Khobar, Eastern Province, Saudi Arabia.

Results: Total of 203 of the approached filled the questionnaire. Average age was 51.1 years and 51% were males. Only 10% reported that physician had provided information on CRC prevention or discussed/recommended screening for CRC, and 10% had undergone screening for CRC. Seventy-five percent respondents have heard CRC, 74% answered CRC is preventable. Regarding the HBM, no significant difference in the mean scores for perceived susceptibility, perceived severity, self-efficacy, and benefits of colorectal cancer (CRC) screening found by age groups. The mean score for perceived severity was higher for females compared to males. About 60% participants were extremely likely to have screening test for CRC today if recommended by the doctor.

Conclusion: Gap exists in knowledge and awareness about colorectal cancer screening among the targeted sample. Individuals with higher perceived susceptibility, severity of CRC and perceived benefit of the screening tests were more willing to undergo the test.

Key words: Colorectal cancer, Saudi, screening, primary health care, health belief model.



Group 07

Department: Emergency Medicine

Students:

Areen Alamri,

Dalal Almarri

Dalal Albaiji


Fatimah Badghaish

Rawan Alghamdi

Rehab Alghamdi

Supervisor: Dr. Nisreen Maghraby, Dr. Faisal Alkhadhra

Level of Awareness of Certified Non-critical Care Physicians in Diagnosing, Managing, and Disposing Anaphylactic Cases: a Registered Study in a Tertiary Hospital in Eastern Province, Saudi Arabia




Abstract

Background: Anaphylaxis is known as an acute severe hypersensitivity reaction, that is started rapidly after exposure to a triggering agent. It is a life threatening condition; its early recognition and rapid proper intervention are crucial to save patients' lives.

Objective: The aim of this study is to measure the ability of certified non-critical care physicians to identify, treat, and dispose anaphylaxis cases.

Methods: A nineteen-question based survey was formed by expert emergency consultants to measure physicians' knowledge regarding anaphylaxis episodes recognition, management, and disposition. The answers were collected during the period from January 2023 to March 2023, via an in-person survey with physicians from different specialties and clinical experience in a tertiary care center in the eastern province, Saudi Arabia.

Level of Awareness of Certified Non-critical Care Physicians in Diagnosing, Managing, and Disposing Anaphylactic Cases: a Registered Study in a Tertiary Hospital in Eastern Province, Saudi Arabia



Results: In this cross-sectional study, a total of 173 physicians completed the survey 81.5% were consultants and 18.5% were specialists. Only 5.2% identified all the three proposed anaphylaxis clinical scenarios, 16.8% identified two, and 51.4% identified only one scenario. Although 42.8% recognized the first line of management of anaphylaxis only 24.3% and 24.9 knew the correct epinephrine dose and route, respectively. Regarding disposition of a patient with an anaphylaxis episode, 61.9% responders chose to dispose the case to emergency department.

Conclusion: Our study identifies a gap in the knowledge of non-critical care physicians practicing in a tertiary care center regarding anaphylaxis identification and management. Increase awareness of such a life threatening condition is required, to overcome this serious issue. This is recommended to be in different forms, such as campaigns, in-situ clinical simulation sessions, memory aid posters. In addition to the readily available and easy access to EpiPens such as having them part of other lifesaving kits (Stop the Bleed and automated external defibrillator).

Keywords: Anaphylaxis, Diagnosis, Management, Disposition, Epinephrine



Group 08

Department: Emergency Medicine

Students:

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Hwara Alatooq

Salma Alkhabbaz

Alhanouf Rayyani

Fatimah Altuwailib

Manal Farhan

Supervisor: Dr. Mohammed AlShahrani, Dr. Sara Alahmadi

Effect of Intravenous Fluid Therapy in Managing Acute Painful Crisis in Sickle Cell Disease Patients

Abstract

Background: Sickle cell disease is prevalent in Saudi Arabia. It is an autosomal recessive mutation which leads to changes in red blood cells' shape that compromise its ability to carry oxygen. Affected patients suffer from severe pain episodes known as vaso-occlusive crises. Theoretically fluid can improve sickling process and it is a followed practice, however, data is scarce about its efficacy.

Objective: The aim of this observational study is to assess the effect of Intravenous fluid in managing vaso-occlusive crisis in sickle cell disease patients on pain score, length of emergency department stays and admission rate.

Methods: This is a pre-planned sub-study of the published randomized control trial "Ketamine administration for acute painful sickle cell crisis: A randomized controlled trial" (Clinicaltrials.gov, NCT03431285) that was conducted in the Emergency Department of King Fahad University Hospital in Al Khobar, Eastern Province, Saudi Arabia, 2019.

Effect of Intravenous Fluid Therapy in Managing Acute Painful Crisis in Sickle Cell Disease Patients

Results: In this analysis 139 patients were included, while both arms received equal amount and type of analgesics, 75.5% received up to 500 ml while 24.5% received more than 500 ml intravenous fluid. A total of 25.2% admitted to the hospital while 74.8% were discharged. Average length of the stay in Emergency Department was (4.6±2.1) hours. There was no significant difference on average pain score between both arms at 30, 60, 90, 120 minutes) P-values, 0.793, 0.121, 0.147, 0.942 respectively. Whereas admission rate and length of emergency department stay was higher in case of patients who received more amount of fluid (>500 ml) intravenous fluid with statistically significant (P= 0.000, 0.046) respectively.

Conclusion: Amount of fluid given to sickle cell patients presented to emergency department with vaso-occlusive crisis was not associated with any significant difference of pain score improvement while those received more fluid showed higher rate of longer emergency department stay and admission rates.

Keywords: Sickle cell disease, intravenous fluid, vaso-occlusive crises, painful crises.



Group 09

Department: Breast Surgery

Students:

Rima Aldakheel

Zainab Ali

Fatimah Alahmad

Zaynab Albaqal

Sajdah Alhantoosh

Supervisor: Dr. Maha Abdel Hadi, Dr. Mariam Alqurashi, Dr.
Hiyam Alhaddad

Psychological Response to Breast Cancer Among Women In King Fahad University Hospital, Al Khobar, Saudi Arabia.

Abstract

Background: Breast cancer is a highly prevalent medical condition among women across the globe. The diagnosis of breast cancer can be traumatic and pose many psychological responses, including fear, stress, anxiety, and depression. Such emotions can have a major effect on mental health and overall quality of life.

Objective: The study's main purpose is to assess the influence of breast cancer on female patients and evaluate the association between psychological distress and sociodemographic variables.

Methods: A cross-sectional study with 93 breast cancer patients who were attending the breast surgery outpatient clinic in King Fahad university hospital, Al Khobar, Saudi Arabia were recruited from September 1st, 2022, to 28th February 2023. Data were collected using a structured questionnaire consisted by sociodemographic information, DASS21 and Brief- IPQ scales.

Psychological Response to Breast Cancer Among Women In King Fahad University Hospital, Al Khobar, Saudi Arabia.

Results: The results of DASS- 21 subscale demonstrate that two thirds of the study sample experienced depression (64.5%). In addition, most of the study sample revealed that they experienced anxiety (91.4%). In contrast, 62% of patients reported that they had no stress compared to only 39.8% reported stress. Looking at the average score of each subscale, it shows the average score of depression is 12.74, anxiety 13.64 and stress average is 13.56. The results showed that half of the study participants had experienced low threat on the Brief- IPQ. Also, 16.1% of them had a moderate experienced threat versus 33.3% of patients had high experienced threat. These results did not vary significantly based on the sociodemographic variables.

Conclusion: Addressing the psychological aspect of breast cancer patients should be part of the treatment plan as many patients experience mental health issues. Moreover, physicians should provide the essential information about breast cancer in an appropriate way as illness perception of patients have some behavioral implications.

Keywords: Breast cancer, Mental health, Depression, Anxiety.

Group 10

Department: Pediatric Surgery

Students:

Maryam Al Hashimi

Lujain Al Turkistani

Njoud Alsunnary

Shareefa Alhemaïd

Fatimah Al Shehab

Rawan Alkhudaimi

Supervisor: Dr. Hussah Al Buainain, Dr. Hossam Elshafei



Effect Of COVID-19 Pandemic on Admission Pattern to Pediatric Surgery Division at KFHU And Subsequent Quality of Presentation in Cases: Comparative Study, Single Center Experience.

Abstract

Background: The coronavirus disease 2019 (COVID-19) pandemic has affected healthcare systems worldwide, with mandatory quarantine and isolation measures being implemented to curb the spread of the virus. These measures have potentially led to delayed or complicated presentations of non-COVID-19 cases, including pediatric surgical cases.

Objective: This study aims to evaluate pediatric surgical admission patterns, analyze the incidence of surgical diagnoses, and assess the severity of presentation during COVID-19 period compared to the pre-COVID-19 period.

Methods: This retrospective observational study was conducted at a university hospital in the eastern region of Saudi Arabia to assess the effect of the pandemic on pediatric surgery admission pattern and severity of presentation during the pre-COVID-19 period (from 1 March 2018 to 1 March 2020) and during-COVID-19 period (from 2 March 2020 to 1 March 2022).

Effect Of COVID-19 Pandemic on Admission Pattern to Pediatric Surgery Division at KFHU And Subsequent Quality of Presentation in Cases: Comparative Study, Single Center Experience.

Results: Of the 903 pediatric surgical admissions, 366 (40.5%) presented during the COVID-19 period. The admission rate per month decreased by 6.9 during COVID-19 compared to pre-COVID-19 (Mean [SD]: 21.5 [9.3] vs. 14.6 [8.2], $p=0.01$). The most common admission diagnoses were appendicitis (17.5%), inguinal hernia (15.8%). There was a 15% increase in the percentage of emergency admissions (54.4% vs. 47.3%, $p=0.037$) during COVID-19 compared to pre-COVID-19. Of note, the percentage of patients admitted with acute appendicitis increased by 35.9% (20.8% vs. 15.3%, $p=0.03$). Furthermore, the emergency admissions for patients with inguinal hernia doubled (26.6% vs. 12.7%, $p=0.035$). No significant difference in ICU admissions, hospital length of stay, and routine discharge were observed.

Conclusion: The COVID-19 pandemic correlated with significant decrease in overall admissions and an increase in emergency admissions including those for appendicitis and inguinal hernia. The increase in complicated conditions was not significant. There was no significant difference in ICU admissions and hospital length of stay. Future studies involving multiple centers are necessary to validate these findings.

Keywords: COVID-19, pediatric surgery, appendicitis, inguinal hernia, surgical severity

Group 11

Department: Pediatric

Students:

Dina Alhatlani

Lama Alfahhad

Luluwh Alhadeeb

Zaineb Alhalal

Supervisor: Dr. Mohammad Alqahtani, Dr. Abdullah Yousef



Diabetic Ketoacidosis Awareness Among Caregivers of Type 1 Diabetic Children in King Fahad University Hospital, Khobar, Saudi Arabia

Abstract:

Background: Diabetic ketoacidosis is a serious acute complication of diabetes mellitus. It is precipitated by infections, omission of insulin, and acute stress and illnesses. This life-threatening complication can be avoided by good control of diabetes and risk factors. Thus, parental awareness is of paramount importance.

Objectives: This study aims to determine the awareness level of the primary caregiver regarding the precipitating factors, signs and symptoms, and to discover the preventive methods taken to prevent the progression of the severity of diabetic ketoacidosis in type 1 diabetes children.

Methods: Interview-based cross-sectional study conducted in King Fahad hospital of university, Saudi Arabia. Total number of participants was 173 caregivers and 183 children over 3 months period.

Diabetic Ketoacidosis Awareness Among Caregivers of Type 1 Diabetic Children in King Fahad University Hospital, Khobar, Saudi Arabia

Results: This study showed that 78.6% know the definition of diabetic ketoacidosis, 90.8% know that it is dangerous, 76.9% know that it has precipitating factors. The most recognized factor is skipping insulin doses 41.6%. The most recognized manifestations were nausea and vomiting (50.3%), abdominal pain (38.2%), and change in consciousness level (37.6%). 56.6% of caregivers don't know the complications of diabetic ketoacidosis. 76.3% would go to the emergency room immediately if an episode happened. 71.7% would prevent diabetic ketoacidosis by insulin compliance.

Conclusion: Diabetes education is crucial. Better level of understanding of the disease and its complications needs to be achieved, for diabetic ketoacidosis to be avoided. Caregivers must be aware about the risk factors, manifestations, and the proper action in emergency situations.

Keywords: Diabetic ketoacidosis, Type 1 diabetes, Awareness, Children, Caregiver.



Group 12

Department: Pediatric

Students:

Razan Al Nimer

Fatimah Al Mubarak

Ramlah Bumuzah

Farah Al Sheif

Fatimah Al Nasser

Fatimah Al Mukhtar

Supervisor: Dr. Ayat Al Safar, Dr. Mutibah AlEssi

Risk of Seizure Recurrence and Development of Epilepsy in COVID-19 Patients: A Single Center Study in Saudi Arabia

Abstract

Background: The new coronavirus has caused a worldwide pandemic with multisystem effects including neurologic manifestations that are still being studied. For example, headache, myalgias, anosmia, stroke, seizures, and encephalitis.

Objective: The aim is to assess the outcome of seizure in children during the period of COVID-19 infection and during the follow-up period after hospital discharge. It includes patients with or without epilepsy to further assess the association of epilepsy development to COVID-19 after hospital discharge.

Methods: In retrospective cohort study in pediatric department of King Fahd University Hospital (KFUH) in Saudi Arabia, the exposed group (COVID-19 with seizure) will be matched with non-exposed group (seizure with non-COVID-19) that are similar in age and period of infection.

Risk of Seizure Recurrence and Development of Epilepsy in COVID-19 Patients: A Single Center Study in Saudi Arabia

Results: The result of this study found that there is no significant relationship of COVID-19 infection to seizure and epilepsy development. In addition, it excluded any association between fever with COVID-19 infection and development of seizure.

Conclusion: The results of this study were in accordance with comparable studies in Literature regarding the correlation between COVID-19 infection and seizure development as well as development of epilepsy. However, further studies with larger sample size are needed to confirm these findings.

Keywords: Seizure, Epilepsy, COVID-19



Group 13

Department: Obstetrics and Gynecology

Students:

Mariam Al Hashem

Maryam Alrufiei

Shrouq Alosaimi

Roaa Al Mowallad

Lujain Alhumaid.

Supervisor: Dr. Ayman Al-Talib, Dr. Nourah AlQahtani

Molar Pregnancy: Clinical Presentation Has It Changed Over the Last 30 Years in Saudi Arabia?

Abstract

Background: There is wide range of difference in incidence of molar pregnancy in different regions of the world. Recently, several investigators have described a trend towards a change in the clinical representation and the incidence of molar pregnancy. Historically, the classical presentation in second trimester is rarely seen due to earlier diagnosis by first trimester ultrasonography (USG) before complications appear.

Objective: The main purpose of the study was to determine the changes in clinical presentation and incidence of molar pregnancy among Saudi population throughout the past 30 years.

Methods: This was a retrospective study conducted at King Fahad Hospital of the University, 121 cases of CM diagnosed and confirmed pathologically were reviewed in the time periods from 2007-2022, 87 cases “recent group” and from 1992-2006, 34 cases “older group”. We compared the age of patients, gravidity, parity, abortion history, gestational age at diagnosis, hyperemesis gravidarum, symptoms of anaemia and haemoglobin level. In addition to the classical symptoms and signs related to CM in the “older group”. Data was entered and analyzed using Excel 2021(365) (Microsoft Corporation, Seattle, WA, USA) Data were presented as mean, frequency and percentage, distribution for categorized variables. (χ^2) Chi-square test was used, and P-value was considered statistically significant if < 0.05 .

Molar Pregnancy: Clinical Presentation Has It Changed Over the Last 30 Years in Saudi Arabia?

Results: The incidence of CM dropped from 2.1 per 1000 deliveries to 0.9 per 1000 deliveries. Vaginal bleeding was the common presentation among patients in older and recent group (91.9% vs. 67.6%, respectively). The second commonest clinical presentation was hyperemesis gravidarum, which was equally similar in both older and recent group. Theca-lutein cysts was seen more frequently in patients in the older group (27.5%) compared to (8.8%) in the recent group. Large for date uterus in the older was detected in 55 (63.20%) compared to 8 (23.5%) in the recent group. Five patients (14.7%) in the recent group were asymptomatic. None of patient in the recent group presented with anemia, while anemia was seen 46 cases (52.8%) in the old group. Pre-eclampsia was presented in 10 cases (11.4%) in the old group, and none in the recent group.

Conclusion: The improvement of technology of ultrasound and availability of transvaginal prob with doppler has enabled us to diagnose pregnancy as early as five to six weeks gestation. Many molar pregnancies are now diagnosed in the first trimester without suspension of clinical picture and without the classical snowstorm appearance. Moreover, the availability of sensitive β -hCG assay which lead that most of them are terminated as an abnormal pregnancy.

Key words: Molar pregnancy, Hydatid form mole, Changes, Clinical presentation, Incidence

Group 14

Department: psychiatry

Students:

Layla Abu Abdullah

Hawra Aldar

Manar Al-Shiban

Fatimah Alzouri

Supervisor: Dr. Ibrahim Albawardi



Self-prescription with Psychotropic Medication among Health Care Providers in Mental Health Services in Saudi Arabia

Abstract

Background: The health care providers in mental health services are more exposed to psychotropic medications than others. Therefore, Self-prescription could be more among them. Self-prescription is a concerning phenomenon because of the potential for medication misuse, drug interaction, addiction, social, physical and psychological consequences.

Objective: The aim is to estimate the prevalence, and to determine the possible factors associated with self-prescription with psychotropic medications in addition to recognize the most common self-prescribed psychotropic medications among health care providers in mental health services in Saudi Arabia.

Methods: This cross-sectional study was based on an electronic questionnaire that was sent to the targeted population through the social media. The survey assessed the past mental illness and the self-prescription of psychotropic medication. Consent was obtained and the data was analyzed using IBM-SPSS-V.20. with a statistical significance set at $p < 0.05$.

Self-prescription with Psychotropic Medication among Health Care Providers in Mental Health Services in Saudi Arabia

Results: Out of 634 responses, 588 were suited for our study, 9.5% of them were involved in self-prescription. 48.2%, 23.2% were using SSRI and benzodiazepines respectively. 37% reported getting the medication by self-prescription, while 37.5% reported getting the medication by medical representative. Half of the participants explained self-prescription as timesaving. The study also identified that self-prescription was more common in association with possible factors such as male gender, married, working in a governmental agency, and living with family.

Conclusion: Up to our knowledge there was no previous study assessing the prevalence of self-prescription with psychotropic medications targeting the same included sample as in our study. However, self-prescription among mental health care providers was twice higher than self-prescription among pharmacy students and almost half the prevalence among residents in two French studies. Our result was correlated with specific demographic data such as male gender. SSRIs and benzodiazepines were the most self-prescribed medication. Regarding psychiatric disorders, depression and anxiety were the most commonly reported ones.

Keywords: Self-prescription, Psychotropic medication, Antidepressants, Antipsychotics, Anxiolytics, Mood stabilizers, Stimulants, Mental health.

Group 15

Department: Dermatology

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Topical Corticosteroid Phobia Among General Population of Eastern Province, Saudi Arabia



Abstract

Background: Topical corticosteroids are regularly prescribed to help in the management of dermatological conditions for their anti-inflammatory properties. Although they have proven positive impact, patients still experience fear and concern regarding the treatment. Evaluating steroid phobia has been easier with the use of TOPICOP© (Topical Corticosteroid Phobia) scale.

Objective: To assess steroid phobia, identify the sources of information, and analyze the beliefs and behaviors regarding topical corticosteroids among the community of eastern province, Saudi Arabia.

Methods: A cross-sectional study was conducted between Nov 2022 – May 2023 using a self-administered online survey to assess steroid phobia, beliefs, behaviors, and sources of information regarding topical corticosteroids among the general population of the eastern province, Saudi Arabia. The target group included individuals between the ages 18-64 regardless of their dermatological conditions and topical steroids use. Non-Arabic and/or Non-English speakers were excluded from the study, along with who are unfamiliar with topical corticosteroids.

Topical Corticosteroid Phobia Among General Population of Eastern Province, Saudi Arabia



Results: Responses from 2733 participants (70% female) from the eastern province of Saudi Arabia were analyzed. The median score was 33.3% (IQR 22.2%-50.0%) Standard deviation (SD) 19.6% for Knowledge and beliefs; 33.3% (IQR 22.2%-44.4%), SD 19.1% for fears; 33.3% (IQR 11.1%-44.4%), SD 19.3% for Behaviors. The median global TOPICOP score was 33.3% (IQR 22.2%44.4%) SD 15.38%. The mean TOPICOP score was highest among those who always take information from friends and family and least among those who always take information from dermatologists. Females showed significantly higher mean scores for fears compared to males (female 52.0%, male 41.0%, $p < 0.001$).

Conclusion: Our population has a lower median global TOPICOP score compared to previous studies, with evident gender variations. Regarding the source of information, it was promising to find that dermatologists were the most trusted source of information. It is important to address topical corticosteroids phobia and correct widely spread misconceptions among the community.

Keywords: Topical corticosteroids; Steroid phobia; TOPICOP scale, Steroid concern.

Group 16

Department: Pathology

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Correlation Between Radiological Findings and Histopathological Results of Breast Diseases.



Abstract


Background: Breast cancer is substantially prevalent among women worldwide. Diagnosis and management depend on radiological and histopathological studies. Therefore, diagnostic accuracy is essential to avoid overtreatment or undertreatment. The aim of this study is to correlate between various radiological findings and histopathological results, and to test the concordance in histological grading between core biopsy and surgical excision among breast cancer cases with and without neoadjuvant therapy.

Objectives: Correlation between radiological findings and histopathological results and identifying the concordance in histological grade between core biopsy and surgical excision among breast cancer patients with and without neoadjuvant in Khobar, Saudi Arabia.

Methods: A retrospective review was conducted over 6 years period (2017-2022) on all breast core biopsies of women preceded by radiological investigation.

Results: A total of 641 cases were included. Ultrasound, mammography and MRI demonstrated diagnostic accuracies of 85%, 81.7% and 86.9%; respectively ($p = 0.001$).

Correlation Between Radiological Findings and Histopathological Results of Breast Diseases.



MRI manifested the highest sensitivity (72.2%), and the lowest was for US (61%). Concordance in tumor size with final excisions was best in MRI, while mammography demonstrated a higher tendency of overestimation (41.9%) and US showed the highest underestimation (67.7%). The association between molecular subtypes and the BIRADS classifications was not statistically significant for both US and mammography ($p = 0.176$ and 0.212 ; respectively), but significant for MRI ($p=0.04$). Luminal subtypes demonstrated a significantly higher percentage of speculation, reaching a significant level in mammography. No association was found between molecular subtypes and internal vascularity and calcification in neither US nor mammography. BIRADS 4 manifested a substantial number of benign pathologies in all the 3 modalities. Fair agreement ($k= 0.212$ & 0.379) was demonstrated between excision and the preceding core biopsy grading with and without neoadjuvant therapy, respectively.

Conclusion: MRI had the highest sensitivity, diagnostic accuracy and estimation of tumor size. Mammography demonstrated better sensitivity but US had better accuracy. Therefore, combination of different modalities is helpful. Tumor speculation is associated with luminal type, especially in mammography. The concordance rate of core biopsy grading with excision was not impacted by neoadjuvant therapy.

Keywords: Breast cancer, MRI, Mammogram, Ultrasounds, Pathology.

Group 17

Department: Ophthalmology

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Prevalence of Orbital Tumors in Eastern Province - A Multicenteric study

Abstract

Background: Orbital lesions are abnormal tissue growths in the structures surrounding the eye which can be benign or malignant. According to the site of origin, orbital lesions are classified into three types which are primary, secondary, and metastatic. The clinical presentation of these lesions varies depending on the site and the age group of the patients.

Objective: To determine the prevalence, common types, clinical features, and histopathological classifications of orbital lesions among adults and pediatrics in Saudi Arabia's Eastern province. **Methods:** A Retrospective observational study was performed on patients who were diagnosed with orbital lesions over a period of 10 years from 2012 to 2022 in the department of ophthalmology at King Fahad University Hospital (KFUH) and Dhahran Eye Specialist hospital in Eastern province (DESH), Kingdom of Saudi Arabia.

Results: A total of 93 patients were included, of which 41 (44%) were pediatrics and 52 (56%) were adults. The most common orbital lesion in pediatrics was vascular lesions, which accounted for 18 (44%) of cases followed by cystic lesions, accounting for 12 (30%) of cases.

Prevalence of Orbital Tumors in Eastern Province - A Multicenteric study

Regarding adults, the most common orbital lesion was lymphoproliferative lesions, accounting for 14 (26%) of cases followed by cystic lesions, accounting for 11 (21%) of cases. Moreover, the clinical presentation was different between adults and pediatrics. In adults, the most common presenting complaint was proptosis accounting for 25 (47%) followed by vision impairment accounting for 21 (40%). However, the most common presentation among pediatrics was eyelid swelling accounting for 23 (56%) followed by palpable orbital mass accounting for 22 (50%) of cases.

Conclusion: Various orbital lesions can affect both adults and pediatrics causing different clinical presentation. The most common orbital lesion was vascular tumors among pediatrics and lymphoproliferative lesions among adults.

Keywords: Orbital lesion, prevalence, proptosis, histopathological classification, Saudi Arabia.

Group 18

Department: Neurosurgery

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The Association Between Regular Outpatient Clinic
Follow-ups in Adult Patients with Chronic, Non-specific
Lower Back Pain and Their Quality Of Life And Disability:
A Cross-sectional Study

Abstract

Background: Chronic Nonspecific low back pain can be defined as a pain that persists for three months with no diagnosable underlying pathology. Even though no cause can be specified, literature shows multiple factors that coexist with this type of pain such as smoking, obesity and degenerative of the lumbar discs.

Objective: This study aims to assess the correlation between chronic nonspecific low back pain and regular follow-ups. Other factors will be assessed as well.

Methods: It is designed as a questionnaire based cross-sectional study containing Arabic and English versions of both Oswestry Low Back Pain Disability Questionnaire and World Health Organization Quality of Life -BREF. Demographical data, pain and job characteristics were also collected.

The Association Between Regular Outpatient Clinic
Follow-ups in Adult Patients with Chronic, Non-specific
Lower Back Pain and Their Quality Of Life And Disability:
A Cross-sectional Study

Results: concluded that 25.4% (n = 67) of chronic nonspecific low back pain affected sample visited a doctor, while only 6.1% (n = 16) had regular follow-ups. Lower disability degree was associated with both consulting a physician (P value = 0.01) and regular follow-ups (P value = 0). While both items, physician consultation and regular follow-ups showed a positive association with higher quality of life.

Conclusion: The study shed the light on important coexisting factors associated with poor quality of life and increased disability chronic nonspecific low back pain. Factors with significant association with chronic nonspecific low back pain induced disability were reported to be: gender, job title, having an office-based job, having a job requiring carrying heavy objects, marital status, doctor visits, and regular follow-ups. In the other hand, factors with significant association with quality of life in the same group were: age groups, gender, marital status, job title, income, having a job requiring carrying heavy objects and standing for a long time, working in an office job, number of days off-work due to CNLBP, and having comorbidities.

Key words: follow-up, quality of life, disability, medical consultation, Nonspecific chronic low back pain

Group 19

Department: ENT

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Abstract

Background: Thyroid masses are distinct lesions within the thyroid gland, most of these masses causes different compressive symptoms affecting the patient's quality of life. A lot of patient related factors may contribute to affecting the incidence of their symptoms, patient's diagnosis, age, gender, BMI, neck characteristics, and patient's co-morbidities. Along with disease related factors; the mass size, and site. However, there is limited local and national studies discussing this relationship.

Objective: This study is a retrospective study, conducted on a population of 195 patients withdrawn from KFHU medical system previously presented to KFHU during 2010-2021 complaining of thyroid mass.

Methods: A questionnaire regarding the factors was formulated, and patients were contacted via a phone call or phone message. Only patients having specifically a thyroid mass were included.

Results: Followed by data analysis of the questionnaire by SPSS program and statistical significance will be set to at $p < 0.05$, to correlate the various factors to the incidence of compressive symptoms. The study concluded that the presence of thyroid masses compressive symptoms was significantly higher among patients who had no chronic diseases ($p = < 0.05$). On the other hand, a non-significant relationship was found between the presence of thyroid masses compressive symptoms and patients' demographics or BMI, thyroid mass malignancy, diagnosis, location, size, or neck height or width ($p = > 0.05$).

Conclusion: Our results suggest that the incidence of thyroid masses compressive symptoms was significantly higher among patients who had no chronic diseases, and not related to the patients' demographics, BMI, thyroid mass diagnosis, location, size, or neck height and width. Upon that, patients need to be furthered investigated and counseled looking for the major contributor for their compressive symptoms.

Key words: Thyroid Masses, Compressive Symptoms, Thyroid Tumor, Thyroid Goiter



Group 20

Department: Internal Medicine

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The Prevalence of Hypertension and Cardiovascular Risk Factors in Patients with Type 2 Diabetes Mellitus at King Fahd University Hospital KFUH Al-Khobar.

Abstract

Background: Type 2 Diabetes Mellitus (T2DM) is often associated with high cardiovascular morbidity and mortality worldwide. Early detection and management of hypertension in T2DM is crucial to reduce the incidence of cardiovascular events. Additionally, monitoring and managing cardiovascular risk factors (CVRF) such as smoking, high BMI, dyslipidaemia, and lack of physical activity can prevent the risk of T2DM complications and cardiovascular events.

Objective: The aim of this study is to assess the prevalence of hypertension and other CVRF in patients with T2DM at King Fahad University Hospital (KFUH) at Al-Khobar, Saudi Arabia.

Methods: This is a retrospective cross-sectional and an observational study, data was collected by reviewing the medical records of T2DM patients from 2015-2022. The inclusion criteria were patients aged >18 years, diagnosed with T2DM, both genders, whereas the exclusion criteria were patients <18 years, diagnosed with T1DM, and pregnant women. Statistical analysis with IBM SPSS version 27.0 using Mean \pm SD for quantitative variables. Parametric one-way ANOVA test was used for comparison in groups, and $p < 0.05$ considered significant. For comparison of qualitative variables, Fischer's exact tests were performed.

The Prevalence of Hypertension and Cardiovascular Risk Factors in Patients with Type 2 Diabetes Mellitus at King Fahd University Hospital KFUH Al-Khobar.

Results: Among 437 T2DM patients, the prevalence of hypertension class 1 and class 2 were 27.40% and 44.03%, respectively. Moreover, 54.46% of T2DM patients were classified as obese, and 17.03% of the patients have dyslipidaemia. In addition, 29.74% of the patients reported being smokers, and 84% reported being physically inactive.

Conclusion: The study suggests that hypertension affects 71.43% of T2DM patients in KFUH, and that blood pressure control is essential in minimizing the risk of cardiovascular disease. Furthermore, hypertension is linked to poor fasting blood sugar control and HbA1c control. Therefore, it is beneficial to control the blood pressure in T2DM patients to decrease the cardiovascular events.

Keywords: Type 2 Diabetes mellitus, Hypertension, Cardiovascular risk factors.

Group 21

Department: physiology

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Assessment of Anosmia/ Hyposmia in Post-Covid-19 Patients: A Cross-Sectional Study in Eastern Province, Saudi Arabia.

Abstract:

Background: The majority of Coronavirus disease-2019 symptoms resolve within the first weeks of infection; however, it may persist for months. Literature has shed light on the persistence of olfactory dysfunction as a new entity to explore.

Objectives: This study aims to objectively assess the persistence of olfactory dysfunction in post-COVID-19 patients and to investigate the factors that are associated with its development in Eastern Province, Saudi Arabia.

Methods: This is a cross-sectional study that is conducted in the Department of Physiology, College of Medicine, Imam Abdulrahman bin Faisal University (IAU), Khobar, Saudi Arabia. This study includes all adults above 18 years old in the following eastern province cities: Dammam, Khobar, Dhahran, and Qatif with confirmed COVID-19 infection and had history of anosmia/ hyposmia after recovery. The study went through two steps of data collection. The first step was collecting the data subjectively through an online survey, the second step was by using the Connecticut Chemosensory Clinical Research Center (CCCRC) olfaction test as an objective assessment.

Assessment of Anosmia/ Hyposmia in Post-Covid-19 Patients: A Cross-Sectional Study in Eastern Province, Saudi Arabia.

Results: The final outcome after studying all associations showed a significant correlation between the persistence of anosmia/hyposmia and the onset of anosmia/hyposmia (P-value =0.015). Additionally, there is a significant association between the persistence of anosmia/hyposmia and the duration of anosmia/hyposmia (P-value =0.012). Furthermore, there is a significant association between the duration of anosmia/hyposmia and the duration of COVID-19 symptoms (P-value =0.010). Outstandingly, there is a significant association between the subjective claim of anosmia/hyposmia and the final score of the objective assessment (P-value =0.026).

Conclusion: This study revealed a significant association between the persistence of anosmia/hyposmia with later onset, longer duration of anosmia/hyposmia, and duration of COVID-19 symptoms. Further studies should focus on understanding the underlying pathophysiology of this olfactory dysfunction in COVID-19 patients and the management of affected patients.

Key words: COVID-19, Olfactory dysfunction, Anosmia, Hyposmia, Loss of smell.



Group 22

Department: physiology

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Prevalence and Risk Factors of Hearing Loss and Otological Symptoms Among Sickle Cell Disease Patients in Saudi Arabia



Abstract

Background: Sickle cell disease (SCD) is a genetic hematological disorder associated with various complications, including sensorineural hearing loss (SNHL). However, the prevalence of SNHL and risk factors among SCD patients remain unclear.

Objective: This study aimed to determine the prevalence of SNHL and otological manifestation in SCD patients, identify their risk factors, and compare hearing test results and otological manifestations between mild-moderate SCD patients versus severe SCD patients.

Methods: A cross-sectional study was conducted on 56 SCD patients aged 18-45 years at King Fahd University Hospital, Al Khobar, between December 2022 and March 2023. Participants underwent comprehensive audiological assessments, including tympanometry, pure tone audiometry (PTA), distortion product otoacoustic emissions (DPOAEs), and transient-evoked otoacoustic emissions (TEOAE). Furthermore, the presence and severity of otologic manifestations were assessed using the Otology Questionnaire Amsterdam (OQUA). The severity of SCD was determined based on clinical parameters.

Prevalence and Risk Factors of Hearing Loss and Otological Symptoms Among Sickle Cell Disease Patients in Saudi Arabia

Results: Eleven patients (19.64%) had hearing loss on pure tone audiometry. Pure tone average, hearing thresholds and otoacoustic emissions response did not differ significantly between mild-moderate vs severe SCD. None of the hearing loss predictors was statistically significant. The Otology Questionnaire Amsterdam (OQUA) showed statistically significant correlations with sickle cell disease severity and complaints of earache ($p = 0.002$), ear pressure sensation ($p = 0.003$), tinnitus ($p = 0.001$), hearing loss ($p = 0.012$) and dizziness ($p = 0.001$), as well as positive correlation with the Impact Domain Score ($p < 0.001$). However, no significant correlations were shown between SCD severity and complaints of ear itching ($p = 0.108$) and loss of taste ($p = 0.225$).

Conclusion: Prevalence of hearing loss among SCD patients is 19.6 %. Various otological symptoms correlate significantly with SCD severity. Including a baseline audiological assessment in their healthcare plan from an early age is highly recommended as hearing is crucial for speech development and academic progress in early ages. The bothersome symptoms of hearing loss also impact social interactions and possibly mental health in older ages. Prospective studies on a large cohort of SCD patients with SNHL are needed to help identify risk and protective factors and develop targeted interventions to improve the quality of life for individuals with sickle cell disease.

Keywords: Sickle cell disease, sensorineural, hearing loss, otological symptoms.

Group **23**

Department: Anatomy

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The Association Between Foramen Ovale and Foramen Rotundum with Trigeminal Neuralgia in Saudi Population: A Radiological Study

Abstract

Background: The trigeminal nerve splits into the ophthalmic, maxillary, and mandibular nerves. Foramen ovale (FO) and rotundum (FR) pass the latter two. Both foramens vary widely in shape, size, and spur presence. This study extensively examined those differences.

Objective: To investigate the morphological and morphometric variations of FO and FR and their relationship to trigeminal neuralgia (TN).

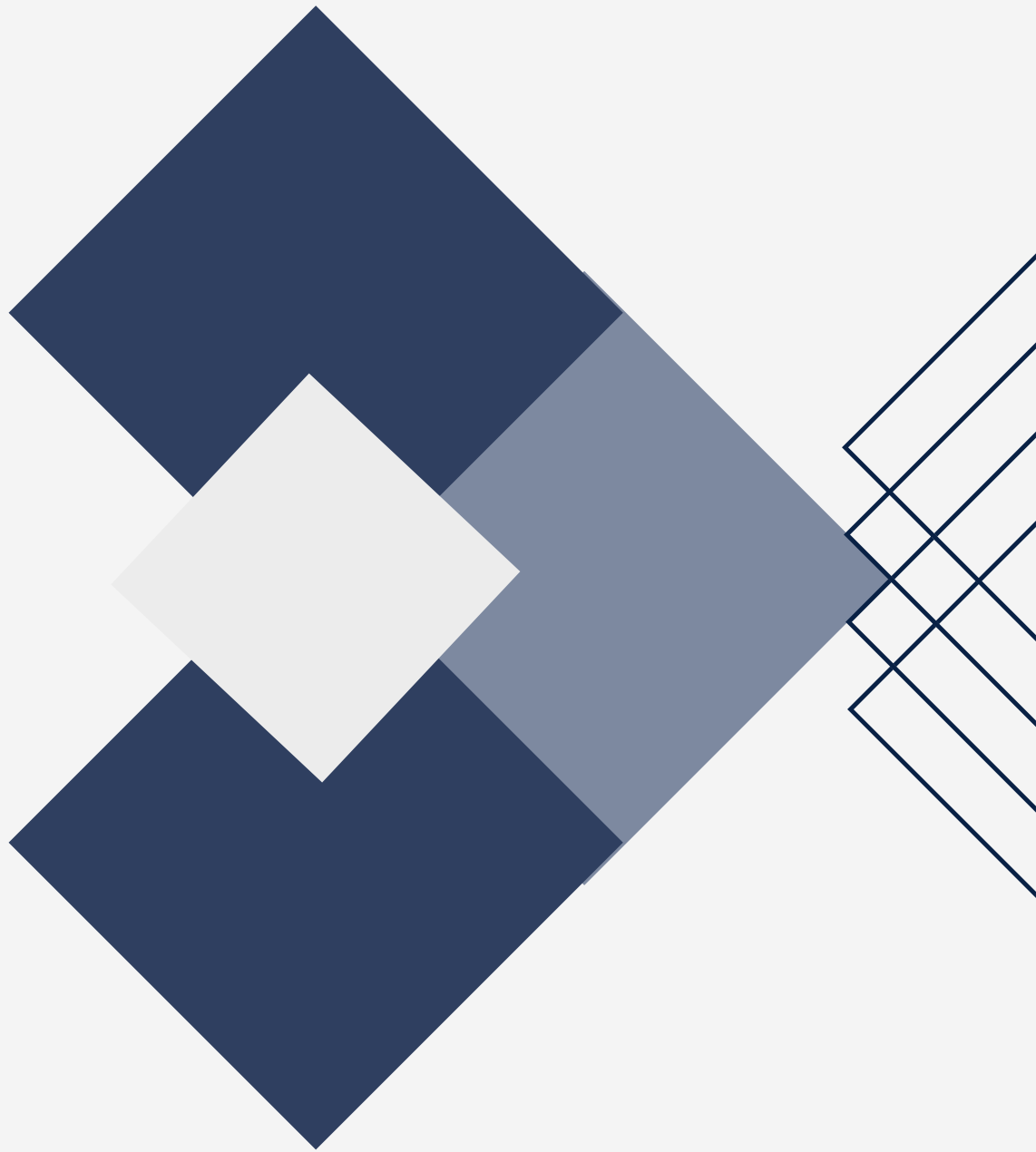
Methods: A retrospective radiological study to investigate the variations of FO and FR through measurements from head and neck CT images. Data obtained from radiology department, KFUH, Saudi Arabia. The sample size was 97, 57 with TN, and 40 control, giving a total of 388 foramina.

The Association Between Foramen Ovale and Foramen Rotundum with Trigeminal Neuralgia in Saudi Population: A Radiological Study

Results: In the TN group 50.9% had left pain, 38.6% right. 10.5% suffered bilaterally. Both groups had oval shaped FO, but females in control had more teardrop shape. FR type III predominantly in males of the TN group, while in control group had type IIb more. On the other hand, females had type IIb in both groups. Average values of right-side FO in TN group were 0.682 ± 0.116 , 0.386 ± 0.071 , 2.242 ± 0.179 and the left side 0.671 ± 0.104 , 0.395 ± 0.077 , and 2.201 ± 0.202 length, width, and distance from midline respectively. Values of FR right-side were 0.275 ± 0.293 , 0.278 ± 0.370 , 1.708 ± 0.244 and left side of 0.691 ± 0.296 , 0.381 ± 0.592 , 1.775 ± 0.277 of height, width, and distance from the midline respectively. In contrast, control group showed significant values.

Conclusion: FO wasn't significantly longer in TN group. The width was significantly higher in the TN group. However, left-sided pain patients had a narrower FO than right or bilateral pain patients, which was statistically significant. Control group distance from midline was significantly higher. FR was significantly taller and wider in TN group. Control group had a significantly greater midline distance.

Key words: Trigeminal neuralgia, foramen ovale, foramen rotundum, morphological variations, skull.



Male Groups

Group 1

Department: Radiology

Students:

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Public Awareness of DEXA-Scan in Detecting Osteoporosis a Cross-Sectional Study



Abstract

Background: Bone density disorders are a common group of disorders among the Saudi population and are widely misunderstood. Therefore, there is an increasing demand to raise awareness towards bone health and the importance of screening. Hence, the purpose of the study is to analyze the general population's comprehension regarding bone health and bone density screening via Dual Energy X-Ray Absorptiometry (DEXA) scan, which is the gold standard medical imaging modality that calculates the bone density and detects osteoporosis.

Objectives: The major purpose of the study was to investigate the knowledge of the general population among Saudi residents concerning DEXA scanning and osteoporosis. Moreover, there are major factors that influence the knowledge regarding the subject that the study aims to acknowledge such as age, gender, occupation, nationality, residential location, education level and income.

Methods: The study design that was utilized in this study was cross-sectional using an electronic questionnaire to evaluate the knowledge and awareness among the Saudi residents regarding DEXA scan and osteoporosis. 491 people participated in the survey replying to questions related to their socio-demographic background, information about DEXA scan awareness, past exposure to bone scans and knowledge regarding bone health.

Public Awareness of DEXA-Scan in Detecting Osteoporosis a Cross-Sectional Study

Results: The median knowledge score was 8 out of 20 regarding the previous knowledge in connection to DEXA scan, resulting in only 39.7% out of the 491 participants previously knowing about the imaging modality. In regard to the effect of the socio-demographic status on the knowledge of DEXA scan. Age, income, education level and occupation were greatly associated with the knowledge of DEXA scan. On the other hand, gender, nationality or residential area didn't have any significant effects on the outcome regarding the knowledge.

Conclusion: The study focuses on the increasing requirement to enhance the general population's knowledge and awareness of the importance of screening for osteoporosis via DEXA scan through education and research regarding the topic. Higher utilization of DEXA scans can be a result of having previous knowledge about osteoporosis and the complications behind it, which may eventually result in the earlier detection of the disease leading to fewer complications and lowering healthcare disbursements.

Key words: Awareness, DEXA scan, Osteoporosis, Public health.

Group **2**

Department: Orthopedic

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The Burden of Routine Orthopedic Implant Removal at King Fahd Hospital of The University



Abstract

Background: Since open reduction and internal fixation are one of the most common orthopedic operations, the question of removing or retaining an asymptomatic implant is a continuous debate. Therefore, orthopedic surgeons are seeking a consensus on the topic.

Objectives: Our goal is to measure the burden of routine implant removal on patients and the healthcare system.

Methods: A retrospective analysis study of implant removal cases was conducted on patients treated at King Fahad Hospital of the University (KFHU) between February 2016 and August 2022. The results were then statistically analyzed and tabulated.

Results: 360 implants were removed between February 2016 and August 2022. After applying the inclusion criteria, only 167 patients were enrolled in the study. 114 (68%) males and 53 (32%) females with the mean age being 25 (± 18) years.

Conclusion: Routine implant removal is a controversial topic in the clinical literature with no clear consensus. Nonetheless, the need for institutional guidelines rises with the high burden on hospital resources and patients' health.

Key words: Routine implant removal, Hardware removal, Healed fracture, Orthopedic implant, Metallic implant.



Group 3

Department: Biochemistry

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Identifying sphingolipid metabolizing enzymes involved in tamoxifen-induced breast cancer cell death



Abstract

Background: Breast cancer is the most common cancers in middle-aged and older women and the most common cancer among Saudi Arabian women. Sphingolipids especially ceramides, are significantly generated in stress-induced cell death and they function as lipid-signaling mediators in apoptosis. Tamoxifen, the drug prescribed for estrogen receptor- α positive tumors, induces apoptosis of MCF-7, breast cancer cell line, through ceramide generation.

Objective: This study aims to identify pivotal enzymes that facilitates the generation of ceramide in tamoxifen-treated MCF-7 by mRNA expression profiling technique.

Methods: MCF-7 (breast cancer cell line) was treated with tamoxifen and cytotoxicity was verified using MTT assay and the mode of cell death by western blotting. mRNA expression profiling for major enzymes involved in ceramide metabolism namely, serine palmitoyltransferase, acid sphingomyelinase, neutral sphingomyelinase, acid ceramidase, neutral ceramidase, and sphingosine kinase 1 was performed using enzyme specific mRNA primers and SYBR Green based RT-PCR method.

Identifying sphingolipid metabolizing enzymes involved in tamoxifen-induced breast cancer cell death

Results: Tamoxifen treatment induced apoptotic cell death of MCF-7 cells. Altered expression was seen in serine palmitoyl transferase and acid sphingomyelinase. The increased expression of serine palmitoyl transferase and acid sphingomyelinase indicate the generation of ceramide could be either through de-novo pathway or from sphingomyelin catabolism or from both. Time course with 20 μ M (IC₅₀) showed a four-time increased expression of acid sphingomyelinase at 6 hours, then it was reduced. Whereas, for serine palmitoyl transferase the expression was maximum at 12 hours. However, a significant association of cell death with mRNA expression was noted only with serine palmitoyl transferase.

Conclusion: These findings further luminates tamoxifen's correlation on the sphingolipid pathway, paving way for further studies to examine in detail the mechanisms to possibly find new targets for therapy against breast cancer resistance.

Key words: Breast cancer, Tamoxifen, Sphingolipids, MCF-7, Ceramide



Group 4

Department: Microbiology

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Abstract

Background: Microbial infection among dialysis patients has increased among time linked with increase in morbidity, mortality, and hospitalization rates. Detection of the prevailing pathogens and their predictors in dialysis patients is crucial to their management and prevention.

Objectives: The primary objective was to illustrate the burden of dialysis associated pathogens, also, to assess the association between pathogens and both dialysis data and patients' characteristics.

Methods: This is a retrospective hospital-based observational study in King Fahd Hospital of the University. Data was taken out of lab reports and electronic health records. This study included all adult and pediatric patients who underwent hemodialysis, peritoneal dialysis or both and had associated infection confirmed by blood culture between 1990 to 2022.

Identifying sphingolipid metabolizing enzymes involved in tamoxifen-induced breast cancer cell death



Results: A total of 485 dialysis patient their medical records were completed and were included in the study. Out of them 246 (51%) had infection. Most of patients were on hemodialysis (76.7%). The most common pathogen among hemodialysis was *Staphylococcus aureus* with 55% prevalence followed by *Pseudomonas aeruginosa* with 48% prevalence. In peritoneal dialysis the most common pathogen was *Staphylococcus aureus* with 36% prevalence followed by *Staphylococcus epidermis* with 34% prevalence. In patient undergoing both dialysis *Pseudomonas aeruginosa* was the commonest with 21% prevalence. Old age (61-80 years), male sex and HD were associated with increased the risk of infection (P value <0.05).

Conclusion: Bacteria was the most common pathogen in dialysis patients namely *Pseudomonas aeruginosa* followed by *Staphylococcus aureus*. Among studied patients' characteristics and dialysis data only old age (61-80 years), males and type of dialysis were a predictor for occurrence of infection with statistical significance. Findings of our study will help for better management and strategic planning for prevention of dialysis associated pathogens.

Key words: Pathogens, Prevalence, Hemodialysis, Peritoneal dialysis, Eastern province of Saudi Arabia



Group **5**

Department: Anesthesia

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Predictors of Intraoperative Blood Transfusion Requirement in Parturient with Abnormal Placental Implantation: A Single Tertiary Center Experience

Abstract

Background: Abnormal placental implantation disorders are associated with massive intraoperative bleeding and high demand for blood transfusion. Predicting the requirement of blood transfusion in these cases aids in preoperative planning and management of patients at risk, and this is why this study is needed.

Objective: This study was undertaken to analyze the possible predictors for intraoperative blood transfusion requirement in parturient with abnormal placental implantation.

Methods: A retrospective case-control study of 44 patients with placenta accreta and placenta previa who underwent cesarean section at King Fahad University Hospital (KFUH) in the period between June 1997 and January 2021. 17 patients received intraoperative blood transfusion. The other 27 patients did not receive blood transfusions and served as controls. Demographic data, antepartum profiles, and obstetric history were compared between the two groups to predict blood transfusion requirement.

Predictors of Intraoperative Blood Transfusion Requirement in Parturient with Abnormal Placental Implantation: A Single Tertiary Center Experience

Result: It was found that the gestational age, placenta type, anesthesia type (general or non-general), preoperative anemia (hematocrit) and hemoglobin were statistically significant ($p < 0.05$) using univariate analysis (Chi-Square). However, they were statistically insignificant in the multivariate analysis.

Conclusion: General anesthesia, placenta accreta, delivery at 35-36 weeks of gestation, and pre-operative anemia are predicting factors associated with blood transfusion during cesarean section of cases with abnormal placentation. Identifying patients at increased risk is necessary to optimize perioperative and intra-operative management.

Key words: Cesarean section, placenta previa, placenta accreta, blood transfusion, risk factors.



Group 6

Department: : Family Medicine

Students:

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Mohammed AlSharit

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Waleed Alzahrani

Faris Alanazi .

Supervisor: Abdulelah Almansour, Marwa shafey, Mohammad Holdar, Khalid AlHarkan.

The Potential Usefulness of Complete Blood Count Parameters to Guide the Evaluation and Treatment of Adult Patients with Major Depressive Disorder and Generalized Anxiety Disorder in Saudi Arabia: A Case-Control Study

Abstract:

Background: Recent studies, albeit with conflicting results, have hypothesized the usefulness of complete blood count parameters as a cheap, quick, and widely available diagnostic test to aid in the diagnosis of major depressive and generalized anxiety disorders.

Objective: To evaluate the clinical diagnostic significance and ratios of complete blood count parameters in Saudi patients diagnosed with either or both disorders.

Methods: A case-control study was conducted collaboratively between the two departments. The study included 153 drug-naive patients aged between 18 and 65 years who were diagnosed with either or both disorders and a matched control group comprised of 163 healthy individuals with no history of mental health disorders. The complete blood count parameters with their differentials (e.g., lymphocytes and monocytes) were calculated for all the patients. The data were analyzed using either an independent two-samples t-test or the Mann-Whitney U test, depending on the Shapiro-Wilk test results. Moreover, logistic regression analysis was performed using binary logistic analysis to assess the correlation between the parameters, ratios, and disorders.

The Potential Usefulness of Complete Blood Count Parameters to Guide the Evaluation and Treatment of Adult Patients with Major Depressive Disorder and Generalized Anxiety Disorder in Saudi Arabia: A Case-Control Study

Results: The cases showed a relatively higher basophil count (0.05 ± 0.09 , $P = 0.013$) and basophil percentage (0.98 ± 1.21 , $P = 0.019$) but a significantly lower lymphocyte count (2.17 ± 0.64 , $P = 0.035$), eosinophil count (0.13 ± 0.14 , $P = 0.003$), and eosinophil percentage (2.1 ± 1.82 , $P = 0.016$). In addition, the only significant parameter after the adjusted logistic regression analysis was the red cell distribution width (odds ratio = 0.63; $P < 0.001$).

Conclusion: Several parameters were significantly associated with both major depressive and generalized anxiety disorders, which suggests that their usefulness as adjunctive tools in the diagnosis and monitoring of these patients.

Keywords: Major depressive disorder, generalized anxiety disorder, complete blood count, inflammatory marker.



Group **7**

Department: : Emergency Medicine

Students:

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Baraa Amir

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Tareq Abdeen,

Abdullah Al-Howaish,

Rayan Alsheniber

Supervisor: Dr. Dunya Alfaraj, Dr. Abdullah Al-Mulhim.

Analysis of Road Traffic Injuries Presenting to the Emergency Department at King Fahad University Hospital in 2022



Abstract

Background: Road traffic accidents (RTAs) are a major global health burden. Rising incidence of RTAs and subsequent road traffic injuries (RTIs) have contributed to the disability and death of millions of people on both a national and global level.

Objectives: The main objective of this study is to investigate the number of RTA, as well as the nature of said accidents, injuries sustained, and patient demographics of victims presenting to a tertiary center in the Eastern Province of Saudi Arabia during a 12-month period.

Methods: A retrospective study was carried out in King Fahad university hospital (KFUH), Khobar, Saudi Arabia. This study included all RTA victims presented to the emergency department in King Fahad university hospital from January 1st ,2022 to December 31st, 2022. Patients' data was obtained from KFUH health information system. The organized data was then analyzed using the Statistical Package for Social Sciences (SPSS) version 28.0. Both descriptive and inferential analysis were performed with several variables analyzed using multivariate logistic regression and factorial ANOVA (MANOVA); significance was set at <0.05 .

Analysis of Road Traffic Injuries Presenting to the Emergency Department at King Fahad University Hospital in 2022

Results: 921 patients were seen in total at the hospital emergency department. 611 (66.3%) of them were males, and 310 (33.7%) were females. The most common age group encountered was the age group of 16-25 at 427 (46.4%). Most patients presented were Saudi citizens 837 (90.9%). 19 (2.1%) were surgically treated within 24 hours of RTA, and 29 (3.1%) were admitted to the surgical intensive care unit (SICU). 8 individuals passed away (0.9%). 552 (59.2%) patients were admitted in the period of 12:00pm to 12:00am. The month with the most RTAs was January (12.7%). 463 (50.3%) individuals had some form of injury with the most common type of injury being lacerations and abrasions at 228 (24.8%). The most encountered fracture was fractures of the upper limb at 73 (7.9%). RTAs involving males ($p=0.001$), non-Saudis ($p=0.014$), and the month of June and July ($p=0.002$) were associated with increased prevalence of injury. Mortality had a statistically significant relationship with different patient age groups ($p=0.014$), patient citizenship ($p=0.005$), and length of hospital stay ($p<0.001$). Additionally, the presence of spinal injuries ($p=0.005$), head and facial injuries ($p=0.49$), and loss of consciousness ($p=0.039$) were independently associated with increased risk of mortality.

Conclusion: This study highlights the nature of injuries, temporal variation, patient demographics, and patient outcomes of RTA and thus may aid in targeting specific factors that are associated with risk of injury and poor outcome.

Key words: Road Traffic Accidents – Road Traffic Injuries – Motor Vehicle Collision – Accidents - Temporal Variation



Group 8

Department: : Emergency Medicine

Students:

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Saud Alshehri,

Khalid Alkatout

Nasser Aljoaib

Supervisor: Dr. Mohammed Almulhim, Dunya Alfaraj.

Using Machine Learning Technique in Managing Emergency Triage Flow.



Abstract

Background: Triage is a critical component of emergency department care. Erroneous patient classification and mis-triaging are common in present triage systems worldwide. Therefore, several institutes worldwide have developed artificial intelligence (AI)-based algorithms that use Machine Learning (ML) systems to sort and triage patients effectively.

Objective: This study aims to propose a machine learning model to predict the triage level for ED patients and compare its performance to the standard nursing triage system.

Methods: This retrospective study collected the dataset of ED records from King Fahad University Hospital in AlKhobar, between January 1, 2020, and December 31, 2022. A sample of 998 randomly selected patients was included in the cohort. The machine learning model was trained using 10-fold cross-validation. Two experiments were conducted, the first including five triage levels and the second combining triage levels 2 and 3 and 4, and 5.

Using Machine Learning Technique in Managing Emergency Triage Flow.

Results: The machine learning model achieved an accuracy of 84% in experiment 1 and 64% in experiment 2. The mis-triage rates of the machine learning model were significantly lower than those of the standard nursing triage system.

Conclusion: The machine learning model achieved higher accuracy and lower mis-triage rates than the standard nursing triage system. Thus, the proposed machine learning model can be useful for ED triage, enabling more efficient and accurate patient management.

Keywords: Canadian Triage and Acuity Scale, Machine Learning, Emergency Department, Mis-triage Random Forest



Group 9

Department: : General surgery

Students:

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Saleh Alnafeesy

Saad Alfarhan

Mohammad Al Hamoud,

Supervisor: Dr. Hanan Alghamdi, Fahad Makhdoom.

A Comparison Between Diverse Learning Strategies in
Acquiring the Surgical Suturing Skill On Imam
Abdulrahman Bin Faisal University Clinical Years'
Medical Students Medical Students: A Prospective Cohort
Study.

Abstract

Background: Sutures are the most common medical device used to close wounds. They support tissue during healing process until it regains sufficient tensile strength. The acquisition of basic surgical skills is important for undergraduate medical students, and simulation-based surgical training has been proven effective in improving performance and confidence. However, there is a scarcity of research conducted in Saudi Arabia that investigates the best educational method for students to acquire optimum suturing skills.

Objectives: To compare simple interrupted suturing technique education methods and to correlate the acquisition of the surgical suturing skill with personal traits and interests.

Methods: A prospective cohort study was conducted on 55 IAU medical students using three different educational methods: personal instruction, interactive distant learning, and non-interactive audiovisual with handouts learning. The study assessed the impact of surgical skill predictors on the acquisition of suturing skills based on the three different methods. Data was collected through questionnaires and assessments before and after the teaching phases. The study was conducted in the simulation lab in the college of medicine at IAU Dammam, Saudi Arabia.

A Comparison Between Diverse Learning Strategies in
Acquiring the Surgical Suturing Skill On Imam
Abdulrahman Bin Faisal University Clinical Years'
Medical Students Medical Students: A Prospective Cohort
Study.

Results: Statistical analysis showed a significant difference between all three groups in post-training assessment. All groups showed improvement in post-teaching assessment, with the in-person teaching group achieving the highest mean score and highest score of a single participant, while the pre-recorded video teaching group achieved the lowest mean score and lowest score of a single participant. Inter-observer differences were eliminated by using one examiner for both baseline and post-training assessment.

Conclusion: The study compared; In-person, interactive distance, and pre-recorded teaching methods on teaching simple interrupted suturing technique. The study suggests that students benefit more from interactive in-person teaching compared to other methods, especially for practical skills such as suturing techniques. However, the study was limited by a single-center design, limited resources, and short-term learning outcomes. We recommend future researchers widen the number of participants and centers, prolong the study duration, and provide all necessary resources to participants. Eventually, we recommend educational institutes to adopt in-person teaching for practical skills.

Key words: simulation-based surgical training for medical students; suturing surgical skills predictors; surgical suturing learning methods; Simple interrupted suturing skill.



Group 10

Department: : General surgery

Students:

Sajjad Almumen

Hussain Alaseel,

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Faris Al Matar

Mohammed Alramadhan.

Supervisor: Dr.Hassan Alsaleem, Hassan Albisher.

Incidence And Risk Factors of Acute Peritonitis Secondary to Viscus Perforation

Abstract:

Background: Peritonitis is one of the most common problems that surgeons face all over the world.

Objectives: In this paper, peritonitis secondary to viscus organ perforation will be examined to determine the most common sites of perforation and its most associated comorbidities.

Methods: The data used was collected from King Fahad University Hospital (KFUH) in Khobar, Saudi Arabia. The sample was taken from 450 patients under the care of the general surgery department.

Results: It was found that the most common sites of perforation were the small intestine (56.3%), the colon (25%), and the stomach (11.2%) respectively. In addition, the comorbidities most associated with secondary peritonitis are hypertension (23%) followed by diabetes mellitus (21%).

Conclusion: The most common perforation sites were the small intestine, colon, and stomach, respectively. The most common morbidities associated with peritonitis were hypertension, diabetes mellitus, and abdominal mass, respectively. Peak incidence was observed in the 4th decade of life. Ultimately, peritonitis and dealing with its complications is a very time-sensitive issue. Any progress that assists in the early initiation of treatment would be of huge utility in achieving a favorable prognosis.

Key words: Peritonitis, Viscus perforation, Comorbidities.

Group 11

Department: : Pediatric

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Assessment of Quality of Life in Children with Eosinophilic Esophagitis: A Cross-sectional Study in Saudi Arabia

Abstract

Background: Eosinophilic esophagitis is a chronic inflammatory disease of the esophagus that can be diagnosed in pediatric age group, in which can affect the children and adolescents' quality of life. As disease is progressing, or left untreated, it may impact their physical, emotional, and social health.

Objective: Investigate the burden of eosinophilic esophagitis on quality of life in children and adolescents from 2 to 18 years in Saudi Arabia, identify factors that influence the quality of life, and describe patients' demographics.

Methods: A multicenter cross-sectional study conducted in the Eastern Province of Saudi Arabia covering 6 major hospitals, PedsQL 3.0 Eosinophilic Esophagitis Module was used to measure the quality of life of children and adolescents with pediatric eosinophilic esophagitis.

Assessment of Quality of Life in Children with Eosinophilic Esophagitis: A Cross-sectional Study in Saudi Arabia

Results: Of 69 families (36 parents and 33 children) enrolled in the study, the mean age 11.13 ± 3.85 ranging from 3-18 years and mean age-at-diagnosis 8.38 ± 3.82 , while (41.6%) of the population were in the age group of 13-18 years. Majority were males (86.1%), taking medications (72.2%), and the most reported symptoms were vomiting (50%), dysphagia (44.4%), and food impaction (36.1%). Mean total score of the parent proxy-report of the PedsQL EoE 82.94 ± 10.25 vs the mean total score of the child self-report 76.28 ± 13.38 , communication domain scored the highest mean while the symptoms II domain scored the lowest, in both reports. Factors were related to quality-of-life measures and were tested for significance; no statistical significance was shown in association of demographics and clinical characteristics and quality of life measures.

Conclusion: Measurement of quality of life in pediatric eosinophilic esophagitis patients can help identify the factors that impact it, and show domains of where interventions are needed the most.

Keywords: Eosinophilic Esophagitis, PedsQL, Quality of Life, Pediatrics, Saudi Arabia



Group 12

Department: : Pediatric

Students:

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Ammar Alfaraj

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Ali Abualrahi.

Supervisor: Dr.Hwazen Shash, Dr. Mohammed Alomari.

Parents' Awareness and Knowledge About G6PD Deficiency in The Eastern Province Saudi Arabia

Abstract

Background: Glucose-6-Phosphate Dehydrogenase Deficiency, known as G6PD deficiency, is a common hematological disease in the Eastern Province. The presence of Glucose-6-Phosphate Dehydrogenase enzyme in the erythrocyte is crucial as it aids in the protection of RBCs by preventing cellular damage. It was found that more than 400 million people in the world lack this enzyme, making it the most common enzyme deficiency worldwide.

Objective: The objective of this research is to study the knowledge of the parents about G6PD deficiency, determine false information about the disease, help physicians concentrate their health education regarding G6PD deficiency, and to suggest some solutions to lessen the gap of information between the physician and the parents.

Methods: Our method of study is a cross-sectional study using a specially prepared questionnaire for this study. This questionnaire has been conducted in the Eastern Province of Saudi Arabia. It was available in both, Arabic and English.

Parents' Awareness and Knowledge About G6PD Deficiency in The Eastern Province Saudi Arabia

Results: The number of participants included in the study reached 459 individuals. The majority of the participants were familiar with fava bean anemia (82.1%), rather than it being called G6PD deficiency anemia, which was not recognized by 73.2% of them. Female respondents proved to be more knowledgeable regarding this topic as 57.9% of them showed good knowledge, compared to 44.7% of the male subjects. Overall, around half of the research subjects (53.6%) had good knowledge about the disease, but the majority were unaware of its exact mode of inheritance (77.5%).

Conclusion: There are discrepancies in the level of awareness about several aspects among the research participants. Therefore, it is advised to spread awareness in the eastern province through brochures, medical campaigns, and by healthcare professionals in different medical organizations .

Keywords: G6PD, Anemia, Awareness, Knowledge.

Group 13

Department: :Medical Education

Students:

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Ali Alhammad

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Abdullah Aldakheel

Ghazi Alotaibi

Supervisor: Mutaman Jarrar.



Clinical Years Students Competencies in Chest X-ray Interpretation: A Theoretical Based Intervention

Abstract

Background: Chest X-ray is one of the primary imaging modalities in detecting chest abnormalities. Therefore, chest X-ray interpretation is an important skill to be learned in the early years. However, literature has shown that students have specific weaknesses in detecting some chest X-ray abnormalities. Nevertheless, no sufficient studies were found to assess the medical students' competencies in interpreting chest X-rays.

Objective: Assessing medical students' competencies and confidence levels in chest X-rays interpretation. Measuring the effectiveness of an educational intervention on reading common chest X-rays films and if clinical history affects students' decisions.

Methods: Experimental pre- and post-study design was applied. Clinical years students included in this study. This study was divided into three phases: pre-intervention with two assessments, with radiological cases with and without clinical history, intervention induction with a lecture based on a theoretical approach (based on the six-step approach by Thomas and Kern), and post-intervention assessment.

Clinical Years Students Competencies in Chest X-ray Interpretation: A Theoretical Based Intervention

Results: The study included 77 students. Mean self-reported knowledge and confidence scores were (3.08 ± 0.6) and (2.78 ± 0.7) , respectively. Mean scores for the pretest without clinical history (6.29 ± 2.38) , when compared to the pretest with clinical history scores (8.58 ± 2.65) , showed a statistically significant difference ($p < 0.001$). Post-intervention scores were statistically significant (9.40 ± 2.91) compared to both pretests without and with clinical history ($p = < 0.001, 0.034$), respectively. Students demonstrated a high accuracy in diagnosing Pneumoperitoneum without and with clinical history with scores of 88% and 97%, respectively. Confidence scores were higher when students had access to patient history.

Conclusion: Giving a lecture on chest X-rays interpretation based on the six-step approach by Thomas and Kern was found to have a significant impact on the student's knowledge. Additionally, better results and higher confidence rates were observed when a clinical history was provided with chest X-ray cases.

Keywords: Chest X-ray, Education, Medical students, Competency

Group 14

Department: Psychiatry

Students:

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Supervisor: Dr.Firas Al-Awad



Clinical Years Students Competencies in Chest X-ray Interpretation: A Theoretical Based Intervention

Abstract

Introduction: This study aims to investigate the attitudes of physicians working in primary care facilities in Saudi Arabia's Eastern Province about dementia care, as well as their confidence in their dementia care skills. The study also sought to determine whether having postgraduate qualifications or personal experience with dementia corresponds with variations in physicians' attitudes regarding dementia care or perceived confidence.

Methodology: This is a questionnaire-based cross-sectional study involving 316 general practitioners, family medicine consultants, specialists, and residents working in the Eastern Province of Saudi Arabia. The survey involves collecting data related to demographics, type and duration of practice, assessment of physicians' exposure to dementia patients, assessment of the attitude of physicians toward dementia patients using the Dementia Care Assessment Scale, assessment of the confidence of physicians and their skills in treating dementia patients by using the Confidence in Dementia Care Skill Scale.

Clinical Years Students Competencies in Chest X-ray Interpretation: A Theoretical Based Intervention

Results: The overall mean score of the Dementia Care Assessment Scale was 36.8 (SD=5.41) out of 50. Regarding the Confidence in Dementia Care Skill Scale, a mean of 51.89 (SD=10.20) is observed from a scale ranging from (15–75).

Discussion: The results indicate that participants have a positive attitude toward dementia care and a lack of confidence regarding the management skills of dementia. A weak positive correlation remained between the confidence and attitude scores.

Conclusion: In conclusion, primary care physicians in the Eastern Province of Saudi Arabia express a positive attitude toward dementia care and show a lack of confidence regarding the management skills of dementia.

Keywords: Dementia Care, Physicians, Attitudes, Confidence, Survey.

Group 15

Department: Dermatology

Students:

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Assessing the Effects of Alopecia on Quality of Life, Depression, and Self-Esteem in the Eastern Province of the Kingdom of Saudi Arabia: A Questionnaire Based Cross-Sectional Study

Abstract

Background: Alopecia can negatively impact a person's quality of life, mental health, and self-esteem. This research is crucial as it aims to examine these effects, providing insights that can lead to better management and support for individuals with alopecia.

Objectives: The objective of this study is to assess the effects of alopecia on quality of life, depression, and self-esteem in the Eastern Province of the Kingdom of Saudi Arabia.

Methods: This study is on the effects of alopecia on health-related quality of life, depression, and self-esteem in Saudis in the Eastern Province. The questionnaire includes sociodemographic data, type of alopecia, medical aid sought, and medication use. The study uses the Dermatology life quality index, Patient Health Questionnaire-9, and Single item self-esteem scale to assess the quality of life, depression, and self-esteem.

Assessing the Effects of Alopecia on Quality of Life, Depression, and Self-Esteem in the Eastern Province of the Kingdom of Saudi Arabia: A Questionnaire Based Cross-Sectional Study

Results: The questionnaire was completed by 403 individuals in total, and after applying the exclusion criteria (only Saudis, from the eastern province) 231 participants were included in this study. Of the participants, 49.4% had hereditary baldness and only 9.5% benefited from treatment. Abstract Page 52.4% of patients had higher levels of depression, and 18.2% had an effect on their life. Patients with a moderate or greater effect on their lives had a significant relationship with hereditary baldness. Younger age, being female, being married, having lower income, and having hereditary baldness were significantly associated with higher depression levels. The study found that as age increased, depression levels and self-esteem scores decreased. Depression was linked to lower quality of life, while self-esteem was linked to both lower quality of life and higher depression levels. These factors are interrelated, with age influencing their relationship.

Conclusions: The results of the study highlight the significant occurrence of depression and decreased quality of life among patients who have alopecia, particularly those with hereditary baldness. It is crucial to provide psychological assistance and counselling to enhance their mental health and overall wellness.

Keywords: Alopecia, Hair loss, Quality of Life Depression, Self-Esteem, Eastern Province, Saudi Arabia

Group 16

Department: Neurology

Students:

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Ibrahim AlQahtani

Jafar AlTammar

Mohammed AlQahtani

Rayan Abdulhaq

Supervisor: Dr. Abdullah Saleh Alamri



Assessing the Effects of Alopecia on Quality of Life, Depression, and Self-Esteem in the Eastern Province of the Kingdom of Saudi Arabia: A Questionnaire Based Cross-Sectional Study

Abstract

Background: Lumbar puncture is an important diagnostic and therapeutic tool used in certain conditions by injecting a needle in the lower back. It is done in patients irrespective of any variations of the alignment of their spine, but it is unknown whether having kyphosis, scoliosis, or both will have an effect on the length of the spinal cord.

Objective: The research is conducted to know if the end of the spinal cord is different in some populations and if certain neuroimaging measures are needed to locate the proper site of lumbar puncture before needle injection is done, to prevent any complications.

Method: A single center retrospective study using the patient's electronic medical records, conducted in King Fahad Hospital of the University, Khobar, Eastern Province of Saudi Arabia, focusing on patients diagnosed with kyphosis, scoliosis or kyphoscoliosis using spine magnetic resonance imaging, in the period from January 2010 to December 2022.

Assessing the Effects of Alopecia on Quality of Life, Depression, and Self-Esteem in the Eastern Province of the Kingdom of Saudi Arabia: A Questionnaire Based Cross-Sectional Study

Results: There was no significant statistical correlation between the variations of the spine (kyphosis, scoliosis, and kyphoscoliosis) and the ending point of the spinal cord, where L1 was the most common termination point.

Conclusion: Performing neuroimaging studies to patients with pathological vertebral curvatures prior to lumbar puncture, to avoid injecting the needle into the wrong spinal level, has no significance.

Keywords: Spinal cord, Scoliosis, Kyphosis, Lumbar puncture, MRI

Group 17

Department: Pathology

Students:

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Supervisor: Dr. Yasser Ahmed Othman



Comparative Retrospective Study of IDA Patients at KFUH vs General Population, Focusing on IBD and Diet.

Abstract

Background: Anemia, defined as a reduced hemoglobin level below the normal range for age and sex, is a challenging public health problem due to its high prevalence. Anemia is the most common complication of inflammatory bowel disease. With iron deficiency anemia and anemia of chronic disease being the most common types associated with inflammatory bowel disease.

Objective: To explore the prevalence of iron deficiency anemia in Saudi Arabia and to compare it to the prevalence of iron deficiency anemia in the patients of King Fahd University Hospital. Furthermore, to assess the relationship between inflammatory bowel disease and diet with iron deficiency anemia.

Methods: Retrospective cohort study was done in King Fahad University Hospital, Eastern province, with laboratory testing between October 2017 and October 2022. Anonymized laboratory data were obtained from the hospital database. For iron deficiency anemia the inclusion criteria were being aged 12 years and older, as well as having the diagnosis of iron deficiency anemia in the period between October 2017 and October 2022. The same criteria apply for inflammatory bowel disease with the addition of having complete blood count and iron studies at the same time of the diagnosis of inflammatory bowel disease.

Comparative Retrospective Study of IDA Patients at KFUH vs General Population, Focusing on IBD and Diet.

Results: Number of patients included is 742, 712(96%) were females and 30 (4%) were males. Peaks were noted from 34-52 years old (24%) and >53 years old for females and males respectively. A total of 58 patients were confirmed for inflammatory bowel disease diagnosis and anemia. 21 had iron deficiency anemia and 36 had Anemia of chronic disease.

Conclusion: Iron deficiency anemia is one of the important health burdens both globally and patients with Inflammatory bowel disease should be evaluated for anemia as there is a strong correlation between them.

Keywords: Iron deficiency anemia, Anemia of chronic disease, Inflammatory bowel disease.

Group 18

Department: Urology

Students:

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Al-Hussain Nidhal

Rasheed Almuhanha

Qusay Ahmed Alabdullah

Supervisor: Dr. Reem Baher aldamanhori





Group 19

Department: Internal Medicine

Students:

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Hassan Al Mirza

Hassan AlHassar

Hassan Alkhulaif

Mohammed Al Hajji,

Mohammad AlMosalami.

Supervisor: Dr.Noor Ahmed Jatoi, Dr. Ahmed Shawkyi

The Prevalence of Cerebrovascular Accidents and Transient Ischemic Attack and Cardiovascular Risk Factors in Type 2 Diabetes Mellitus Patients at King Fahad University Hospital Al Khobar.

Abstract:

Background: The importance of this study is to know the prevalence of CVA, TIA and modifiable cardiovascular risk factors, in patients with T2DM which will help us in understanding our population to improve the prevention of CVA and early detection of cardiovascular risk factors in T2DM patients that will help us to prevent further complications which will eventually help in decreasing the burden on healthcare services, and to improve the quality of life.

Objective: To assess the prevalence of CVA, TIA, and cardiovascular risk factors (smoking, hypertension, hypercholesteremia, high body mass index (BMI), and physical activity) in T2DM patients at King Fahad University Hospital (KFUH), Al-Khobar, Saudi Arabia.

Methods: This is a retrospective, cross-sectional, observational study in which stroke and TIA patients' data was noted from the hospital database system (Quadra Med) from 2015-2022. Data was analyzed by statistical software IBM SPSS version 27 or JMP. P value is set for < 0.05 , with 95% confidence interval. standard deviation and mean value of variables was analyzed, diabetic and non-diabetic groups comparison was done by using ANOVA analysis.

The Prevalence of Cerebrovascular Accidents and Transient Ischemic Attack and Cardiovascular Risk Factors in Type 2 Diabetes Mellitus Patients at King Fahad University Hospital Al Khobar.

Results: 378 patients were involved in this study. More than half of them (54.5%) were females. The majority (97.1%) of the studied patients were ≥ 40 years old. Prevalence of (CVA) was (27.2%) versus (12.4%) among non-diabetic patients. There is a statistically significant association among diabetic and non-diabetic patients with CVA. Patients who were physically active were (.202) times less likely for incidence of CVA. We found that there is increased risk of incidence of CVA in: Hypertensive patients (4.68 times), Dyslipidemia (2.124 times), Hemoglobin A1C Uncontrolled >10 (.002 times) and Duration of Diabetes >10 years (22.25 times).

Conclusion: Diabetes patients are more likely to suffer a stroke. Hypertensive patient, Dyslipidemia, uncontrolled diabetes, and longer duration of diabetes are at higher risk of occurrence of CVA. Controlling blood sugar levels and making lifestyle adjustments will help to lower the risk of stroke.

Key words: Diabetes Mellitus, Stroke, Transient Ischemic Attack, Cardiovascular Risk Factors, Hemodynamic Measurements.

Group 20

Department: Physiology

Students:

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Ayman Abdullah ALSaeed

Essa Nasr Alaseel

Mahdi Mohsen Aldarwish

Supervisor: Dr. Talay Yar



Evaluation Of Cardiovascular Autonomic Control in Chronic Electronic Cigarettes Users

Abstract

Background: Vaping has become increasingly prevalent among young adults, and the constituents of vaping fluid have been a subject of concern due to their potential harmful effects. Reports suggest that short-term effects of vaping include lung injury and cardiovascular dysfunction. However, the long-term effects of vaping on cardiovascular function remain unclear.

Aim: This research aims to investigate the long-term effects of vaping on cardiovascular system and its autonomic nervous system.

Methodology: We recruited 50 young, healthy Saudi individuals for the study: 29 nonsmokers and 21 chronic e-cigarette users who had vaped for an average of 4.85 ± 0.993 years. Among the e-cigarette users, 8 used high-powered devices and 13 used low powered devices. The two groups were matched by age and BMI. We evaluated their baseline heart rate variability using ECG, their autonomic reactivity with standard cardiovascular reflex tests, and their baroreflex sensitivity by monitoring finger arterial blood pressure, which indicates how heart rate varies with blood pressure changes.

Evaluation Of Cardiovascular Autonomic Control in Chronic Electronic Cigarettes Users

Results: The baseline measurements of heart rate, blood pressure, and heart rate variability was similar for both groups. However, vapers showed impaired baroreceptor sensitivity during deep breathing, Valsalva maneuver, and isometric handgrip exercise compared to controls. This impairment did not affect the results of the cardiovascular autonomic reflex tests that evaluated sympathetic and parasympathetic function between the two groups.

Conclusion: The study suggests that chronic e-cigarette use may have a negative effect on baroreceptor sensitivity, which is important for maintaining cardiovascular homeostasis. However, the study did not find any evidence of cardiovascular autonomic dysfunction in chronic e-cigarette users based on CART results. The findings of this study contribute to the growing body of evidence on the long-term effects of vaping on cardiovascular function and highlight the need for further research in this area.

Keywords: Vaping, Heartrate variability, CART, Baroreceptor sensitivity

Group 21

Department: Anatomy

Students:

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Morphometry of the human ear in the Eastern Province of Saudi Arabia

Abstract

Background: The ear is considered to be the most distinguishing facial feature in humans, and the structure of the ear reveals information about ethnicity, sex, and age. In forensic medicine, prosthetics, and plastic surgery, anthropometric measures are crucial. The external human ear is thought to be a highly diverse structure with various physical and individual characteristics in many people and populations.

Objective: This study aims to determine the mean values of the different morphometric measurements from the right and left ears and show the sexual dimorphism in the ear's measurements.

Methods: This prospective observational cross-sectional study was conducted on 200 Saudi volunteers in the eastern province, consisting of 98 males and 102 females in the Department of Anatomy, Institute of Medical Sciences, Imam Abdulrahman Bin Faisal University. The study participants were randomly selected from the workers and patients of King Fahad University Hospital. The various aspects of ear morphology were measured using a Vernier caliper after obtaining consent. Volunteers' t-test, Karl Pearson's coefficient of correlation, and linear regression equation were calculated.

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Results and conclusion: The mean right and left total ear height in males were 6.054 ± 0.5394 and 6.044 ± 0.5235 cm, respectively, and for females were 5.489 ± 0.4481 and 5.763 ± 4.8446 cm, respectively. The mean right and left ear width in males were 3.052 ± 0.5006 and 2.978 ± 0.5110 cm, respectively, and for females were 3.038 ± 0.6160 and 3.686 ± 2.4824 cm, respectively. The mean right and left lobule height in males were 1.695 ± 0.3253 and 1.686 ± 0.3143 cm, respectively, and for females were 1.749 ± 1.0647 and 1.884 ± 1.3232 cm, respectively. The mean right and left lobule width in males were 1.988 ± 0.3465 and 1.964 ± 0.3474 cm, respectively, and for females were 2.297 ± 0.2830 and 2.522 ± 1.9687 cm, respectively. The mean right and left tragus to helix in males were 2.922 ± 0.3715 and 2.890 ± 0.3594 cm, respectively, and in females were 2.889 ± 2.2415 and 2.860 ± 2.2830 cm, respectively. The mean right and left tragus to antihelix in males were 1.892 ± 0.3415 and 1.903 ± 0.4045 cm, respectively, and in females were 2.045 ± 1.0830 and 2.612 ± 1.2913 cm, respectively. The mean right and left nasion to ear in males were 13.160 ± 0.9715 and 13.123 ± 0.9725 cm, respectively, and for females were 12.330 ± 0.5282 and 13.419 ± 11.0488 cm, respectively.

Keywords: ear morphometry, ear height, ear reconstruction.



Group **22**

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Morphometric Study of Pituitary Gland Using MRI In Saudi Population

Abstract

Background: The pituitary gland is a small endocrine gland located in the Sella turcica. It consists of a stalk and two lobes: anterior and posterior. It plays a key role the secreting several hormones and controlling downstream endocrine glands.

Objective: To establish morphological data about normal pituitary using MRI, related to the age and gender in Saudi papulation from King Fahad Hospital of the University (KFHU).

Method: Retrospective study where the data was collected through the KFHU system. We examined T1sagittall with T2 coronal pituitary MRI. We used T1 sagittal to measure the height and length and the width was measured with T2 coronal. All the variables were used in the di chiro nelson formula which is: $\text{Volume} = \text{Hight} * \text{Length} * \text{Width} * 0.528$.

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Result: Males with flat pituitary had higher anteroposterior diameter (length) compared to females with the same shape ($P < 0.05$).

Pearson's correlation shows a mild positive relation between age and length (38.5%) that is statistically significant ($P < 0.01$). that age and volume are positive predictors of length, where height and width are negative predictors.

Conclusion: there was no overall significant difference between males and females in most of the variables measured except anteroposterior diameter (width) was longer in males than females There is paucity of literature in this topic and has versatile results.

Key words: Morphological, Pituitary, Shape



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OBSTETRICS and GYNECLOGIC PATIENTS' PERCEPTION and ATTIUDE towards BEDSIDE TEACHING in SAUDI ARABIA. A CROSS-SECTIONAL STUDY

Abstract

Background: Bedside teaching (BST) is a crucial component of medical education that entails students interacting with patients in outpatient clinics and inpatient wards under the guidance of a senior physician, with the goal of improving students' exposure and ultimately patients' outcomes. Bedside teaching relies heavily on patient cooperation, meaning patients should be willing to participate.

Objectives: The aim of this study is to assess the perception of Obstetrics and Gynecology (OB/GYN) patients toward the presence and participation of medical students in bedside teaching.

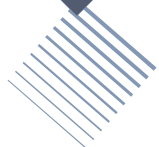
Methods: A cross-sectional survey was conducted among OB/GYN patients visiting the outpatient clinics and inpatient wards at King Fahd University Hospital in the Eastern Province of the Kingdom of Saudi Arabia from January 2023 to April 2023. A total of 507 participants were included in the study, and data were collected using a validated tool.

OBSTETRICS and GYNECOLOGIC PATIENTS' PERCEPTION and ATTITUDE towards BEDSIDE TEACHING in SAUDI ARABIA. A CROSS-SECTIONAL STUDY

Results: A highly positive patient attitude was observed towards the presence and participation of medical students during BST, with a mean score of 81.8 ± 10.4 and acceptance rates that favored females (students and junior doctors) (91.1% and 89.9%, respectively) over the male (students and junior doctors) (61.7% and 58.9%, respectively). Patients who visited outpatient clinics were also more likely to accept students' presence than those who visited hospital wards. Some factors, including age, marital status, and previous clinic visits, seemed to affect positively on accepting the presence and involvement of medical students at BST without significant difference.

Conclusion: This study provides valuable insight into patients' perceptions of BST in the OB/GYN setting. The findings demonstrated that patients had a generally good view toward medical students' engagement in their care and that gender and clinical setting (clinic, ward) may impact these perceptions. These findings have substantial implications for medical education and clinical practice, emphasizing the need for healthcare professionals to be aware of patients' preferences and rights during BST. Future research could look into the factors that influence patients' perceptions of BST and how they affect patient outcomes.

Key words: Bedside Teaching, Patients, Perception, Willingness, Cooperation



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