Oman Medical Specialty Board Research Forum 2023/2024: Abstracts

December 6, 2023

ANESTHESIA

Comparison of Single Shot Epidural Morphine versus Continuous Fentanyl with Bupivacaine Infusion after Abdominal Gynecological Surgeries: A Randomized Double-Blinded Controlled Trial

Raidah Attaullah Al Balushi[1]*, Fatma Sulaiman Al Hinai[2*] and Bader Mahmood Al Hasani[2]

[1]Anesthesia Residency Training Program, Oman Medical Speciality Board, Muscat, Oman

[2]Anesthesia Department, Armed Forces Hospital, Muscat, Oman

*Corresponding author: Raidah.b19@resident.omsb.org; fatmaalhinai9630@hotmail.com

ABSTRACT

Objectives: This study aimed to compare the efficacy and safety of single-shot morphine versus continuous fentanyl as adjuvants to bupivacaine epidural infusion using combined spinal epidural after elective abdominal gynecological surgeries. ***Methods***: After ethical approval and informed written consent were obtained, this prospective, comparative, randomized, double-blinded controlled trial was conducted in the Armed Forces Hospital from 30 September 2022 to 5 November 2023. A total of 80 participants were randomly divided into two groups (40 in each group): intervention or group A (epidural single shot morphine of 2 mg and infusion of plain bupivacaine 0.0625%) and the standard protocol or group B (2 mL normal saline (placebo) bolus then infusion of bupivacaine 0.0625% + fentanyl 3.33 mcg/mL). All patients received an epidural of 4-8 mL/hour for 48 hours after surgery, and similar post-operative regular and rescue analgesia were prescribed. A repeated measure of analysis of variance was applied to examine the main effect of time on the outcome. A p-value of < 0.05 was considered statistically significant. A two-way mixed analysis of variance was used to examine the differences between group A and group B. The pain score, cardiorespiratory parameters, and adverse effects were compared between the two groups. All the analysis was carried out in IBM SPSS Statistics version 28.0. ***Results:*** The demographic data and type and duration of the surgeries were similar in both groups. There were no statistically significant differences in pain scores at 0, 6, 12, 18, 12, and 48 hours and cardiorespiratory parameters. In view of the side effects, group B has a higher incidence of drowsiness compared to group A with $p = 0.014$ and no significant differences in the incidence of nausea, itchiness, and dizziness. ***Conclusions:*** We conclude that a single shot of morphine as an adjuvant in plain local anesthetic epidural infusion is equally effective to continuous fentanyl with local anesthetic without any side effects. In addition, the preparation of group A infusion is more convenient and cheaper than the preparation of group B.

Quality of Post-Operative Pain Management for Elective Cesarean Section in Sultanate of Oman: Prospective Multicenter Cross-Sectional Study

Sarah S. Moosa[1]*, Fatma S. Al Hinai[2]* and Bader M. Al Hasani[2]

[1]Anesthesia Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Anesthesia Department, Armed Forces Hospital, Muscat, Oman

*Corresponding author: fatmaalhinai9630@hotmail.com; sarah.shabeer@gmail.com; sarah.sh@resident.omsb.org

ABSTRACT

Objectives: This study aimed to evaluate the quality of postoperative pain management following cesarean section using the validated Revised American Pain Society Patient Outcome Questionnaire (APS-POQ-R) at multiple secondary and tertiary care centers in Oman. ***Methods***: After obtaining ethical approval from the Ministry of Health and Armed Forces Hospital, a cross-sectional study was conducted in 10 hospitals throughout Oman within three months, from July to September 2022. Hospital selection covered all regions of Oman. The selection of the hospitals was also based on the turnover of cesarean sections in each hospital. The written consent and the (APS-POQ-R) questionnaire were distributed to each participant 24 hours post elective cesarean section. Descriptive statistics were applied to summarize the data. Continuous variables were presented as mean, median, and standard deviation, whereas categorical variables were presented as frequency and percentage. Analysis was carried out in IBM SPSS Statistics version 29.0. ***Results:*** Data from 389 patients was analyzed. Results showed that 343 (96%) patients reported moderate to severe pain in the first 24 hours after surgery. The mean worst and least pain experienced were 7.19±1.93 and 4.64±2.38, respectively. Pain was severely affecting mobilization in bed in 55.9% of the participants. In

addition, 46.3% showed that pain was severely affecting out-of-bed activities. Participants accounting for 62.9% reported moderate to severe anxiety related to their pain. Despite having participants experiencing severe pain 60% of the time within the first 24 hours postoperatively, 274 (77 %) were satisfied with the management received. ***Conclusions:*** Inadequate pain control post-cesarean section has negative consequences in several aspects for both the mother and the baby. Undermanaged pain post-cesarean section affects mothers' sleep, activities, and emotions. Results suggest that pain post-cesarean section is inadequately managed and requires further adjustment and improvement.

BIOCHEMISTRY

Accuracy of Monitoring Liver Function Tests in Patients Receiving Statin at Primary Care

Fatema Al Farsi[1]*, Fahad Zadjali[2] and Manal Al Kindi[3]

[1]*Biochemistry Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Director, Ministry of Health, Muscat, Oman*

[3]*Biochemistry and Lipidology Department, Royal Hospital, Muscat, Oman*

**Corresponding author: r2214@resident.omsb.org*

ABSTRACT

Objectives: To assess the diagnostic accuracy and implication of liver function test (LFT) for liver injury in patients starting statin therapy. We also investigate the clinical and economic implications of ordering LFT in primary care settings. ***Methods***: This is a retrospective cohort study. Inclusion criteria were patients aged above 18 years, attending the primary care centers in Muscat, North Al Batinah, and Al Dhakhalyiah region, and starting statin from 2014-2018. We excluded patients with existing liver disease. All subjects were followed up for one and a half years of development of liver injury after initiation of statin. ***Results:*** LFT was ordered in almost 50% of patients on statin. A total of 6215 patients from primary care centers in three regions had a baseline LFT requested. The average age was 54 years. At baseline, only 5% had LFT derangement, with two or more values from alanine transaminase, aspartate aminotransferase, and bilirubin exceeding the upper limit of normal. Of these, 0.4% may have false negative results when followed up for one and a half years. LFT results were false positives in 95% of the patients. Liver injury affects 5% of patients per 1000, with 0.4% of cases potentially being missed. Most (99.5%) of the patients did not experience any problems or injury from taking a statin, supporting the drug's safety and infrequent side effects. On the other hand, 95% of patients per 1000 have false positive results that lead to anxiety and unnecessary cascade testing and referrals. ***Conclusions:*** Routine LFT measuring in patients taking a statin is unnecessary, and it may cause anxiety and unnecessary cascade testing and referrals. By adhering to worldwide guidelines for measuring statin-related hepatotoxicity, Oman might avoid wasting around 40.8 million OMR on unnecessary tests.

Accuracy of Calculated Low-density Lipoprotein Cholesterol: Toward Unifying Best Laboratory Practice in Oman

Raqiya Hamood Saleh Al Dhuhli[1]*, Nafila Al Riyami[2] and Fahad Al Zadjali[3]

[1]*Biochemeistry Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Biochemistry, Sultan Qaboos, University Hospital, Muscat, Oman*

[3]*Center of Studies and Research, Ministry of Health, Muscat, Oman*

**Corresponding author: r2213@resident.omsb.org*

ABSTRACT

Objectives: We aimed to analyze the accuracy of 12 formulas that estimate low-density lipoprotein cholesterol (LDL-C) compared to a direct LDL-C assay. The performance of these formulas was assessed at different triglyceride (TG) and LDL levels. ***Methods***: A set of 300 samples collected at Sultan Qaboos University Hospital were included in the study. Permission from the local hospital ethical committee was obtained. The study samples were divided into three subgroups according to their TG level: group 1 (TG < 1.7 mmol/L), group 2 (TG = 1.7-3.2 mmol/L), and group 3 (TG = 3.2-4.5 mmol/L). Samples were analyzed for LDL-C level using a direct homogenous assay and compared to a calculated LDL-C level using 12 formulas: Friedewald, DeLong, Hata, Hattori, Puavillai, Anandaraja, Ahmadi, Chen, Vujovic, de Cordova, Martin, and Sampson. Correlation analysis and Bland-Altman analysis were performed to present the results. ***Results:*** All the equations except Ahmadi showed a good correlation with the direct LDL-C assay. DeLong showed the highest correlation with an R-correlation score of 0.9672 and a *p*-value of < 0.0001. In terms of the performance of the formulas at different TG levels compared to direct LDL, the best-correlated formulas (order from highest) were DeLong, Puavilla, Vujovic, and Friedewald. These formulas showed almost similar performance to direct LDL at different TG levels. Estimated LDL-C values by Puavillai formulae showed the least difference compared to the directly measured LDL-C with a bias of 0.00529. ***Conclusions:*** This is the first study in Oman that compared the 12 different LDL-C formulas to a direct LDLC- assay. Friedwald formula showed a good correlation with the direct LDL-C assay, but Delong showed the highest correlation. In terms of the least bias, the Puavillai formula is the best.

DERMATOLOGY

Microneedling along Topical 5-Fu in the Treatment of Stable Resistant Vitiligo

Ahmed Al Hinai[1*] and Ahmed Al Waily[2]

[1]Dermatology, Resident, Oman Medical Speciality Board OMSB,
[2]Dermatology, Senior Consultant, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: r2010@resident.omsb.org

ABSTRACT

Objectives: This study aims to assess the safety and efficacy of microneedling along with the application of topical 5-fluorouracil in the treatment of stable localized vitiligo. ***Methods***: This study is a non-randomized, quasi-experimental design with the inclusion of 28 patients having localized stable vitiligo based on convenient sampling methods with certain inclusion criteria. Microneedling with the application of topical 5-FU will be performed once every two weeks for six months. The Epi-data software was used for data collection, analysis, and interpretation. Excellent results in terms of 50-75% repigmentation of the initial vitiligo macule/patch were expected within six months based on a previous recent study conducted within a similar scope. No major ethical concerns are associated with this study. Funding was required to cover the expense of the instrument (i.e. derma roller) and medication (topical 5-FU cream/solution) used. ***Results:*** At the end of four weeks, Grade I re-pigmentation was noted in approximately 46% of the patients, Grade II re-pigmentation was seen in 46%, and 8% showed Grade IV re-pigmentation. There was a statistically significant difference in the proportion of re-pigmentation grade between week 2 and week 4 (McNemar-Bowker test, $p = 0.046$). ***Conclusions:*** We can say that microneedling with topical application of the 5-FU solution is a simple, cost-effective, and safe modality without the need for extensive surgical instruments and minimal side effects. It can be used as an alternative or additive method before, or in combination with other approved methods for stable vitiligo.

The Agreement between Dermoscopic and Histopathologic Diagnosis of Different Dermatological Diseases

Belkees Al Marjabi[1*], Ahmed Al Waily[2], Asim Qureshi[3], Marwa Al Riyami[3], Asem Shalaby[3] and Anna Maria[2]

[1]Dermatology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman
[2]Dermatology Department, Sultan Qaboos University Hospital, Muscat, Oman
[3]Pathology Department, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: R2012@resident.omsb.org

ABSTRACT

Objectives: We aimed to assess the degree of agreement between dermoscopic and histopathological diagnosis of different dermatoses. ***Methods:*** This is a prospective cross-sectional reliability study. Inclusion criteria were patients attending the dermatology clinic in Sultan Qaboos University Hospital; patients with different ranges of dermatological diseases including inflammatory, infectious, neoplastic, and connective tissue disease; and patients with mild, moderate, and severe forms of the same disease. Skin lesions were assessed using an Illuco IDS-1100 Dermatoscope, and then a skin punch biopsy was taken from the same lesion for histopathological examination. ***Results:*** One hundred twenty-nine cases were included in the study. The overall agreement was 68.2%. The vasculitis and vascular disorders group showed the highest percentage of agreement (92.9%), while the hair disorders group showed the lowest percentage of agreement (33.3%). ***Conclusions:*** Overall, this study showed a good agreement between dermoscopic and histopathological diagnosis. Dermoscopy provides an excellent communication bridge between clinician and pathologist as most dermatoscopic structures have direct histopathologic correlates. Gaining knowledge about dermoscopy will improve clinician's diagnostic accuracy and will reduce the number of performed biopsies.

Study of the Knowledge, Attitudes, and Practices Toward Sun Exposure Among General Population Attending Non-skin Clinics in Muscat

Jawaher Al Ghafri[1*], Thuriaya Al Rumhi[1*] and Ahmed Al Wailey[2]

[1]Dermatology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman
[2]Dermatology Department, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: r2009@resident.omsb.org; r2011@resident.omsb.org

ABSTRACT

Objectives: This study aims to encourage awareness about sun exposure among the community. This can be achieved by conducting educational campaigns. As well as helping the decision-makers to involve this topic in the curricula of schools and universities, it helps physicians with patients' health. ***Methods***: A cross-sectional, observational, descriptive, and prospective study was conducted with a self-administered hard-copy questionnaire. The participants were the general population recruited from primary healthcare centers in the six wilayats of Muscat governorate. The questions were derived from previous literature and underwent scientific validation steps. A collection sheet was generated in the Epidata system to facilitate data analysis. Data was analyzed using the IBM

SPSS program. The multivariate analysis, the chi-square test, and the *p*-value were used to find the association between different demographics and awareness toward sun exposure. ***Results:*** The study enrolled 804 participants, of whom 322 (40.0%) were male and 482 (60.0%) were female. Among the participants, 428 (53.2%) were using sunscreen. The cumulative knowledge score was calculated from eight questions (asking about the harmful effects of the sun, sun protection factor, broad-spectrum, availability of sun-protective clothes, etc.). It was found that 41.4% of the population had poor knowledge. By using univariate and multivariate analysis, it was found that the factors associated with sunscreen use were female gender, educated population secondary schools and above, and having good knowledge score. Among the users, only 16.6% applied sunscreen in all exposed areas, and 54.2% applied on sunny and cloudy days. Fortunately, most of the participants used other sun protective methods like avoiding peak hours and wearing protective clothes and sunglasses, and they were more prevalent than using sunscreen. ***Conclusions:*** In this study, we discovered multiple instances of incorrect sunscreen application. Raising awareness about the proper use of sun protection methods within our community is highly needed.

EMERGENCY MEDICINE

Prevalence of Anabolic Androgenic Steroids use among GYM Members in Muscat

Zaid Al Khabouri[1*], Mohammed Al Wardi[2], Khalifa Al Quraini[1], Firas Al Majrafi[3], Ammar Al Gheithy[4], Mohammed Alharthi[3], Reem Al Affani[3], Yasser Al Khabori[5], Sachin Jose[6] And Suad Al Abri[7]

[1]*Emergency Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Otolaryngology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[3]*College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman*

[4]*Directorate General of Health Services, Ministry of Health, Muscat, Oman*

[5]*General Foundation Program, Oman Medical Specialty Board, Muscat, Oman*

[6]*Research and Studies Section, Oman Medical Specialty Board, Muscat, Oman*

[7]*Emergency Medicine Department, Sultan Qaboos University Hospital, Muscat, Oman*

**Corresponding author: zaid.k19@resident.omsb.org*

ABSTRACT

Objectives: This study aimed to estimate the prevalence of anabolic androgenic steroids (AAS) use among non-professional gym members in Muscat and to explore the attitudes, knowledge, and practice associated with it and other performance-enhancing drugs (PEDs) including supplements and potential substances of abuse. ***Methods***: Cross-sectional, questionnaire-based study distributed randomly to gyms in Muscat and electronically through social media channels. We included all gym members and excluded professional athletes. Ethical approval was granted by the College of Medicine and Health Sciences at Sultan Qaboos University. ***Results:*** The estimated prevalence of AAS use among gym members in Muscat is 17.3% (95% CI: 13.3-21.9). Gym members in Muscat had a good general understanding of AAS effects and adverse health effects. Among AAS users, 74.5% admitted using it while acknowledging the associated harm. Doping on AAS was associated with more frequent and prolonged use of gym facilities and peer influence of knowing other users and being offered to use. The most commonly identified source of AAS was coaches. Access to AAS was perceived as easy by gym members in Muscat. There was no association between AAS use and other substances of abuse. ***Conclusions:*** The prevalence of AAS use among gym members in Muscat is considered high and falls in a similar range as the reported prevalence in neighboring Gulf Cooperation Council countries. Further research is needed to explore the possibilities and prevalence of unintended doping. Our findings encourage more actions to regulate AAS use and avoid misuse.

Comparison of Efficacy of Metoclopramide, Promethazine, and Prochlorperazine in the Treatment of Peripheral Vertigo: A triple-blind Randomized Controlled Trial

Asma Al Buraiki[1*] and Suad Al Bulushi[2]

[1]*Emergency Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Emergency Department, Al Nahdha Hospital, Muscat, Oman*

[*]*Corresponding author: asma.b19@resident.omsb.org*

ABSTRACT

Objectives: Acute vertigo is a common presentation in the emergency department (ED). This study aimed to compare the therapeutic efficacy of metoclopramide, promethazine, and prochlorperazine administered via intramuscular (IM) route in patients presenting with signs and symptoms suggestive of acute peripheral vertigo to the ED. The primary outcome was to determine the most effective medication for treating vertigo in this patient population, with the secondary outcome assessing the need for rescue medication. ***Methods***: A triple-blind, multicenter, randomized controlled trial was conducted. Adult patients aged 18–60 years with peripheral vertigo, self-assessed with a visual analogue scale (VAS) rating ≥ 5.0 were included. Participants were randomized to receive a single dose of metoclopramide, promethazine, or prochlorperazine via IM route. The primary endpoint was a reduction in VAS score at 60 minutes. Efficacy was defined as a VAS score ≤ 3 at 60 minutes with the least side effects and reduced need for rescue medication or maneuver. Data were analyzed using SPSS.

Results: Fifty-four patients were allocated to receive metoclopramide, prochlorperazine, or promethazine via IM route, with 18 participants in each group showing similar characteristics. The mean VAS scores at 60 minutes post-treatment were 2.72 (95% CI: 1.23–4.22) for metoclopramide, 1.28 (95% CI: 0.11–2.44) for promethazine, and 2.83 (95% CI: 1.18–4.49) for prochlorperazine in the supine position. No statistically significant differences were found between the groups for VAS scores in supine, sitting, and standing positions. The need for rescue medication did not significantly differ between the three groups. Adverse effects due to the drugs were not observed. There was no statistically significant association between disposition and the type of medicine group. ***Conclusions:*** The study found no statistically significant difference in efficacy between IM metoclopramide, promethazine, and prochlorperazine regarding the outcome. Clinically, VAS score differences were found to be lower in the prochlorperazine group. The metoclopramide group required more rescue medication, while the promethazine group required the least. Caution was advised with metoclopramide, as more rescue medication was needed. All three medications were safe. The choice of medication didn't impact patient disposition. Future research should explore larger samples and long-term outcomes. Updating guidelines to reflect medication equivalence and emphasize individualized choices are recommended.

Prevalence of Career Indecision and Factors Influencing it Among Senior Medical Students and Medical Interns in Oman

Ali A. Al-Ajmi[1] Fatma S. Al Kharusi[2]* and Aisha Al Khamisi[3]

[1]*Emergency Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Internship program, College of Medicine and Health Sciences, Sultan Qaboos University, Oman*

[3]*Emergency Department, Sultan Qaboos University Hospital, Muscat, Oman*

**Corresponding author: R2018@resident.omsb.org*

ABSTRACT

Objectives: Career indecision (CI) is a broad term that refers to the uncertainty and difficulty of decision-making for the future career among junior professionals. This study aims to estimate the CI prevalence among senior medical students and medical interns in Oman. Secondly, it assesses the association of socio-demographic factors influencing it. Finally, to examine the association between participation in career development activities and CI among them during the academic year 2022-2023. ***Methods***: A cross-sectional study was conducted using an anonymous self-administered questionnaire in the English language. We used a 21-item Career Factors Inventory to determine the CI score. CI scores were further classified as low-level CI (score: 27-71) and high-level CI (score: 72-105). ***Results:*** The total number of participants was 161. The minimum sample size calculated was 153 participants for a 95% confidence interval. Unpaired *t*-test and ANOVA test were used to determine association. The results showed a high-level CI prevalence of 63.4% (95% CI: 55.4-70.8) among the participants. Participants with one of their parents in healthcare professions and those who did not participate in career development activities have high CI scores with $p = 0.002$ and $p = 0.022$, respectively. Moreover, participants younger than 25 years of age in comparison to older participants had a higher need for self-knowledge scores ($p = 0.018$). ***Conclusions:*** Study participants showed a high prevalence of high-level CI among senior medical students and medical interns in Oman. Further studies are recommended to investigate the causality of high CI levels among junior professionals in Oman and the contributing factors. Curricular and extra-curricular career development activities and counseling may improve CI and reduce its burden.

ENT

Prevalence of Asymptomatic Superior Semicircular Canal Dehiscence on High-Resolution CT in Omani Population

Osama Sulaiman Ali Al-Shaaili[1]* and Mohamed Badreldine[2]

[1]*ENT Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*ENT Department, Sultan Qaboos University Hospital, Muscat, Oman*

**Corresponding author: r2116@resident.omsb.org*

ABSTRACT

Objectives: The purpose of this study was to use high-resolution computer tomography (CT) scans to determine the rate of radiologic superior semicircular canal dehiscence in the asymptomatic Omani population. ***Methods***: We enrolled retrospectively all patients without symptoms of superior semicircular canal dehiscence who had CT of the temporal bones attending the Sultan Qaboos University Hospital for the past five years between 2017 and 2022. Dedicated consultant neuroradiologists evaluated the superior semicircular canals bilaterally, and defined them as dehiscent or non-dehiscent subjectively. ***Results:*** Nineteen out of 286 patients were positive for superior semicircular canal dehiscence making the prevalence of 6.6% (95% CI = 4.1- 10.1). The mean size of the defect was 1.3 mm and the most common indication of imaging among the positive was mass for evaluation. ***Conclusions:*** Six percent of asymptomatic patients had radiologic evidence of superior semicircular canal dehiscence on high-resolution CT. This is similar

to previous reports and is markedly higher than the postmortem rate of asymptomatic superior semicircular canal dehiscence. Therefore, we recommend that asymptomatic patients with CT evidence of superior semicircular canal dehiscence should be interpreted carefully and undergo audiological evaluation as radiological evidence might over-diagnose superior semicircular canal dehiscence.

Outcomes of Biologics in Patients with Refractory Chronic Rhinosinusitis with Nasal Polyposis in the Omani Population

Sakina Iqbal Mohamed Al Lawati[1]* and Janan Al Abduwani[2]

[1]ENT Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Depratment of Otolaryngology - Head and Neck Surgery, Al Nahdha Hospital, Muscat, Oman

*Corresponding author: r2022@resident.omsb.org

ABSTRACT

Objectives: Biologics are the newest and most advanced treatment used for chronic rhinosinusitis with nasal polyps (CRSwNP). There have been ongoing trials; however, this would be the first trial looking at the outcomes on Omani Patients. This study aimed to assess the outcomes of novel biologics and to assess the outcomes between mepolizumab and dupilumab biologics in the Omani Population. ***Methods***: This is a retrospective cohort study. Data from patients with CRSwNP treated with monoclonal antibodies in 2022 were analyzed retrospectively. Improvement in the sino-nasal outcome teast (SNOT) scores, nasal polyp grades, and anosmia were evaluated. ***Results:*** A total of 21 patients were included in this study. Pre-treatment anosmia rate was 95%. Of them, 70% had symptoms either resolved or were improving. Patients with grade III Polyps pre-treatment were 53% and were decreased to 9%. The mean SNOT score was 71, which went down to 21. ***Conclusions:*** Biologics are an effective treatment for CRSwNP patients, with mean SNOT scores reduced by 40 points. Almost half of the patients had no polyps by the end of the sixth session, and dupilumab had a 100% success rate. The difference in the mean SNOT score between mepolizumab and dupilumab was not statistically significant (= 0.921). Dupilumab had 100% of their participants' anosmia reversed. This pilot study gives promising outcomes. We suggest a larger sample size be involved in future studies.

Factors Associated with Revision Sinus Surgery in Patients with Chronic Rhinosinusitis in Oman

Asma Said Saif Al Habsi[1]* and Ibtisam Al Sulaimi[2]

[1]ENT Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

*Corresponding author: asma.h19@resident.omsb.org

ABSTRACT

Objectives: This study aimed to assess the factors and phenotypes of CRS associated with revision surgery in patients undergoing ESS. ***Methods***: This is a retrospective, multi-centered study including 396 patients who underwent ESS between 2017 and 2022, it includes patients from two of the main hospitals in Oman, Nizwa Hospital and Al Nahdha Hospital. Epi-data was used for data collection. Data was gathered from the Al-Shifa system. Patients were divided into two groups; those who underwent primary ESS (primary group) and those who underwent revision ESS (revision group). Logistic regression models were used for analysis. ***Results:*** Of 1131 cases, 396 were included in the study [males = 240 (60.6%) and females = 156 (39.4%)]. The participants were aged 12-76 years, with a mean age of 36.6 ± 13.0 years. A minimum follow-up of 12 months to a maximum of 67 months, with a mean of 19.0 ± 16.0 months. ***Conclusions:*** Revision ESS rate is 20.5% with a mean follow-up of 19 months. Age, exposure to bakhoor, and LMS were found to be independent factors associated with higher revision rates. In the revision surgery group, incomplete surgical dissection of the fronto-ethmoidal cells was 56%. We recommend further studies be conducted with longer follow-up periods and address more factors to achieve a better insight into revision ESS factors.

FAMILY MEDICINE

Quality of Life Among Postgraduate Medical Residents in Oman: A Cross-sectional Survey

Noor AL Wahaibi[1*], Rahma AL Kindi[2] and Mustafa AL Hinai[2]

[1]Family Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Department of Family Medicine, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: noor.w19@resident.omsb.org

ABSTRACT

Objectives: Quality of life (QoL) is a multidimensional construct referring to an individual's perception of the state of their life. This study aimed to assess the QoL of postgraduate medical residents enrolled in various programs at the Oman Medical Specialty Board (OMSB) in Muscat, Oman. ***Methods***: This cross-sectional study was conducted between January and June 2022. All postgraduate residents enrolled in any of the 19 OMSB training programs during the study period were targeted. An online English version of the validated 36-Item Short Form Health Survey was used to assess self-reported QoL. ***Results:*** A total of 425 OMSB residents participated in the study (response rate = 72.9%), of which the majority were female (n = 289; 68.0%), married (n = 259; 60.9%), and enrolled in medical specialties (n = 295; 69.4%). The

mean age was 29.6±2.2 years. Overall, female residents reported statistically significantly poorer QoL compared to male residents in all subscales ($p = 0.001$). Moreover, married residents reported lower bodily pain scores compared to unmarried residents ($p = 0.005$), although the latter reported higher physical functioning, general health, and mental health scores. Residents enrolled in laboratory specialties reported higher scores compared to those in medical and surgical specialties with regard to various QoL dimensions, including physical health, role functioning, energy/fatigue, emotional well-being, bodily pain, and general health ($p = 0.001$). ***Conclusions:*** Postgraduate medical residents in Oman reported statistically significant variations in QoL based on specialization, gender, and marital status. These findings underscore the need for additional interventions to tackle health inequalities and improve the QoL of this population.

Knowledge, Attitude, and Practice of General Practitioners towards Premarital Screening in the Muscat Governorate

Amna Al Mandhari[1]* Amani Al-Abri[1], Fathiya Al Shuraiqi[2] and Abdulhakeem Al Rawahi[3]

[1]*Graduate, Family Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Senior Specialist Family Medicine, North Al Mawaleh Health Center, Directorate General of Muscat Region Ministry of Health, Sultanate of Oman.*

[3]*Former Head of Research, Oman Medical Specialty Board, Muscat, Oman*

**Corresponding author: amna.m19@resident.omsb.org*

ABSTRACT

Objectives: This study aimed to assess the knowledge, attitude, and practice of general practitioners (GPs) toward premarital screening in Muscat Governorate. Moreover, we aimed to determine the factors that affect the level of knowledge, attitude, and practice among the same sample. ***Methods***: This is a cross-sectional survey based on a validated questionnaire, which was developed and validated by investigators. The target population included all general practitioners in all primary health centers in the Muscat Governorate between 2021 and 2022. Questionnaires were distributed as hard and soft copies. The data was entered using epi-data entry software and analyzed using IBM SPSS Statistics 28.0 software. ***Results:*** One hundred ninety-one GPs completed the questionnaire. The mean knowledge score was 66.0%, with over half of the GPs having good knowledge. The mean attitude score was 87.3%, with almost all the GPs having a good attitude. However, the practice domain seemed lagging. Although GPs were knowledgeable about premarital screening tests, only 15.2% regularly provided counseling to clients who were confirmed to have genetic blood disorders. Almost half (46.3%) of the GPs had never participated in any public awareness activities related to premarital screening programs, and 84.8% had never participated in clinical audits or research related to premarital screening in their health institutions. ***Conclusions:*** The study found that GPs in Oman have a positive attitude and good knowledge about premarital screening. However, poor practice was observed. Regular training with well-defined policies and guidelines can improve the service regarding premarital screening in Oman.

Adherence to Levothyroxine Treatment Among Patients with Hypothyroidism in Oman: A National Cross-sectional Survey

Rahma Al Riyami[1], Sharazad Al Balushi[1*], Rahma Al Kindi[2] and Maryam Al Kiyumi[2]

[1]*Family Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Family Medicine and Public Health, Sultan Qaboos University Hospital, Muscat, Oman*

**Corresponding author: shahrazad.b19@resident.omsb.org*

ABSTRACT

Objectives: Hormone replacement therapy with levothyroxine is considered the treatment of choice for hypothyroidism; however, non-adherence is a major contributor to poor treatment outcomes. This study aimed to evaluate the levels of drug adherence (DA) to levothyroxine therapy among Omani adults with hypothyroidism and to explore the related sociodemographic and clinical factors. ***Methods***: A national, multi-center, cross-sectional survey was carried out from August to December 2021 at 18 primary healthcare centers across all governorates of Oman. A total of 415 Omani adults were recruited. Data were collected using a pre-tested, Arabic-language questionnaire completed by trained researchers during face-to-face interviews with the participants. The level of DA was determined using the 8-item Morisky Medication Adherence Scale (MMAS-8). ***Results:*** A total of 400 Omani adults participated in the study (response rate = 96.4%). The mean age was 41.9±12.4 years old (range = 18–78) and 90.3% were female. According to their MMAS-8 scores, 157 (39.2%), 139 (34.8%), and 104 (26.0%) participants demonstrated low, medium, and high DA, respectively. No significant correlations were observed between the level of DA and any sociodemographic or clinical characteristics including age, gender, education, duration of treatment, and family history of thyroid disease ($p > 0.050$). ***Conclusions:*** Only a quarter of Omani patients with hypothyroidism reported high levels of adherence to levothyroxine treatment, likely as a result of a lack of awareness of the disease and the importance of maintaining an euthyroid state. Further studies using

more objective measures of DA are recommended to determine correlates of non-compliance to levothyroxine therapy among Omani patients.

GENERAL DENTISTRY

Risk Factors Associated with Cleft Lip and Palate Among Children in Oman

Fatma Al Harthy[1]*, Al Muntasir Al Hianai[2] and Taimoor Al Balushi[3]

[1]General Dentistry Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Dental and Maxillofacial Surgery Department, Sultan Qaboos University Hospital, Muscat, Oman

[3]Department of Plastics Surgery, Khoula Hospital, Muscat, Oman

*Corresponding author: r2150@resident.omsb.org

ABSTRACT

Objectives: To identify the possible risk factors associated with cleft lip and palate (CLP) among children in Oman. In addition, we aimed to investigate the prevalence of different types of risk factors of CLP. ***Methods***: A retrospective case-control study was conducted at the Department of Plastic Surgery in Khoula Hospital, Oman. Cases were defined as children born with CLP and controls were defined as children born without CLP. A variety of maternal and child factors, including the gender of children, presence of systemic diseases in the mother, medications during pregnancy, family history of CLP, folic acid consumption, maternal smoking, consanguineous marriage, and premature delivery, were collected through interviews and medical records. All included risk factors were presented descriptively with further bivariate and multivariate analyses to assess their influence on CLP. A p-value < 0.050 was considered significant. ***Results:*** A total of 250 children were included in the study, 125 cases and 125 controls. The results showed that the highest number of CLP cases was belonged to the CLP group (44.0%), followed by the cleft palate-only group (31.2%) and the cleft lip-only group (24.8%). The mean maternal age was 30.77 years. Family history (odds ratio (OR) = 25.929; 95% CI: 7.07-95.067; p < 0.001), folic acid consumption (OR = 0.212; 95% CI: 0.099-0.454; p < 0.001), consanguineous marriage (OR = 6.04; 95% CI: 3.036-12; p <0.001), and premature delivery (OR = 8.57; 95% CI: 2.32-31.65; p = 0.001) were significantly associated with the presence of CLP. ***Conclusions:*** Our study provides evidence that family history of CLP, mothers not taking folic acid during pregnancy, consanguineously married, and premature delivery are risk factors for CLP in Oman. These findings have important implications for developing appropriate preventive measures for CLP in Oman.

Effect of Submucosal Injection of Dexamethasone on Postoperative Edema Along with Pain and Trismus Following Surgical Removal of Impacted Mandibular Third Molar: A Randomized Control Trial

Laila RairOmar[1]*, Nishanth Shetty[2] and Vidhya Shetty[2]

[1]General Dentistry Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Armed Forces Hospital, Muscat, Oman

*Corresponding author: r2149@resident.omsb.org

ABSTRACT

Objectives: To investigate the effect of submucosal injection of 4 mg dexamethasone on swelling after surgical removal of the impacted mandibular third molar. In addition, we aimed to assess the effectiveness of submucosal 4 mg dexamethasone on pain and trismus following surgical extraction of impacted mandibular third molars. ***Methods***: A randomized, double-blinded clinical trial study was conducted on recruiting participants referred to the clinic of oral and maxillofacial surgery at the Armed Forces Hospital for the surgical removal of the impacted mandibular third molar. The study's nature and purpose were explained to the participants before signing the consent form. Participants with similar anatomical positions, difficulty following Pell-Gregory classification and Pederson scoring, aged between 20-40, and asymptomatic impacted mandibular third molar (according to the National Institute for Health and Care Excellence guidelines) were included in the study. In addition, the study excluded participants with long-term steroid therapy, smokers/alcoholics, compromised patients (diabetes and organ transplant), and pregnancy/lactating. A questionnaire was distributed addressing the medical history of each participant. The calculation of sample size was based on the expected primary outcome obtained from previous studies. The estimated sample size required (with a power of 80%) was 120 participants (60 experimental and 60 controls) in order to yield statistically significant results with a 95% CI and a cut-off p-value of < 0.050. ***Results:*** A total of 120 individuals (60 steroid group and 60 placebo group) were included in the study. There was a significant reduction in swelling on day two with more improvement in the experimental steroid group compared to the control placebo group on day two postoperatively with a p-value of 0.002. There was a significant reduction in pain in the steroid group compared to the placebo group regarding the number of tablets used postoperatively with p-values of 0.000 from day 1 to day 6 and 0.005 on day seven and a visual analog scale with a p-value of 0.000 from day one to day five and a p-value of (0.001-0.008) in days six and seven, respectively. On the other hand, there was no significant difference between the steroid and placebo groups in mouth opening postoperatively with a p-value of 0.855 in

the baseline, 0.253 on day two, and 0.636 on day seven. ***Conclusions:*** The analysis of this study showed that the administration of 4 mg dexamethasone injection was effective in the reduction of postoperative swelling and pain. However, there was no significant improvement in mouth opening between the two groups. It can thus be safely used preoperatively as a single dose through the intraoral submucosal route.

Assessment of Periodontitis as a Predictive Sign of Occurrence of Type-II Diabetes Mellitus: A Prospective Cohort Study

Ayoub Ibrahim Al Kharusi[1]* and Latfiya Al Harti[2]

[1]*Genetral Dentistry Residency Training Program, Oman Medical Specialty, Muscat, Oman*

[2]*Periodontics Consultant, Military Dental Centre, Armed Forces Hospital, Muscat, Oman*

**Corresponding author: r2148@resident.omsb.org*

ABSTRACT

Objectives: This study aimed to affirm that periodontitis is a possible early sign of diabetes mellitus (DM), and to determine the incidence of undiagnosed pre-DM and DM in patients with stage III or IV periodontitis. ***Methods:*** This is a case-control, prospective, and cohort study. Patients with stage III/IV periodontitis with no previous history of DM were included. The exclusion criteria were age < 30 years, with a history of DM, current pregnancy, anemia, thalassemia, kidney disease, or chronic liver disease. Controls were those with no periodontal clinical attachment loss. Information about known risk factors of DM was collected from all participants. Controls were matched cases in terms of age and sex. Once all clinical periodontal parameters were collected all self-reported data was obtained, and blood samples were collected and analyzed for HPLC HbA1c. There were 200 participants recruited (100 periodontitis: 100 non-periodontitis) with a 1:1 ratio. ***Results:*** In total, 101 individuals with abnormal HbA_{1C} (≥ 5.7) were identified: 11 (11%) and 4 (4%) were potentially DM, and 41 (41%) and 45 (45%) were potentially pre-DM in cases and controls, respectively. Cases and controls were matched for age and sex and no statistical difference was found between them in terms of sociodemographic and distribution of known DM risk factors. ***Conclusions:*** Analysis of the study data indicates the clinical significance of periodontitis for it to be considered as a potential sign of DM. In addition, the data suggest that oral health professionals have the opportunity to identify pre-DM and DM in dental patients and refer them to their physicians for further assessment and management.

HEMATOLOGY

Demographic and Clinical Characteristics of BCR/ABL Negative Myeloproliferative Neoplasms Patients in Oman

Zahra Al-Ghammari[1]* and Khaled AL-Hashmi[2]

[1]*R[3] Hematopathology Residency Training Program, Oman Medical Specialty Board, Muscat. Oman*

[2]*Hematology Department, Armed Forced Hospital, Muscat, Oman*

**Corresponding author: r2159@resident.omsb.org*

ABSTRACT

Objectives: The primary aim of this study was to describe the clinical and molecular characteristics of patients with classical BCR-ABL1-negative myeloproliferative neoplasms in Oman. The secondary objective was to describe demographic characteristics, clinical presentations, complications, and molecular mutations at diagnosis and to determine the genetic profile of JAK2V617F, CALR exon 9, and *MPL* genes among Omani patients and correlate these mutations with clinical and hematologic parameters in myeloproliferative neoplasm (MPN). ***Methods***: This was a retrospective observational cohort study conducted in the Department of Hematology-Oncology at Royal Hospital from January 2015 to August 2020. ***Results:*** A total of 128 patients were assessed, 50 with polycythemia vera (PV), 62 with essential thrombocythemia (ET), and 11 with primary myelofibrosis (PMF). The mean age was 56 years (range = 14-95 years) with male predominance (56%). Of the overall MPN cohort, 56% presented with symptoms including vascular events (22%). The mutational status analysis revealed that 98 (76.5%) harbored the JAK2V617F mutation, 27 (21.1%) CALR mutation, one (0.8%) had MPL, one (0.8%) had both JAK2V617F and CALR, and one (0.8%) patient was negative. Among the PV patients, 49 (98%) were positive for the JAK2V617F mutation, and one (2%) presented with CALR mutation. Fifteen patients presented with thrombosis, including 11 patients with arterial thrombosis and others with venous thrombosis. For ET, there were more arterial thrombosis events seen in those with JAK2 V617F mutation compared to CALR mutation (18.2% vs. 4.8%). The JAK2V617F mutation is associated with higher presenting hemoglobin, hematocrit, and white cell count, while the CALR mutation is associated with lower hemoglobin and hematocrit but higher platelets. The bleeding rate was only 4.5%. Disease progression was noted in three patients: two patients progressed to MF from ET and PV, and one patient developed secondary acute myeloid leukemia post-myelofibrosis. ***Conclusions:*** The clinical and frequency of somatic mutations in our cohort, stratified according to the respective disease, was consistent with the literature despite some limitations. Further multi-center prospective studies with long-term follow-up should be designed to determine the link between the *JAK2* gene and thrombosis in MPNs, disease progression, and overall survival.

Differentiating Thrombotic Thrombocytopenic Purpura from Other Thrombotic Microangiopathies at Royal Hospital: A Retrospective Study

Maryam Al Saidi[1*] and Muntadhar Al Moosawi[2]

[1]Hematopathology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Hematology Department, Royal Hospital, Muscat, Oman

*Corresponding author: r2158@resident.omsb.org

ABSTRACT

Objectives: In this study, we sought to identify the factors differentiating thrombotic thrombocytopenic purpura (TTP) from non-TTP thrombotic microangiopathies (TMAs). ***Methods***: We conducted a retrospective cohort study and reviewed the 10 years of data of the patients from the Royal Hospital tested for ADAMTS13 activity. We assessed clinical and laboratory parameters to identify discriminators of TTP and assigned PLASMIC TTP prediction scores. ***Results:*** One hundred thirty-four patients were tested for ADAMTS13 from 2013 to 2023. Sixty-four patients were included in the study (33 TTP and 31 non-TTP TMA). Of the TTP group, 26 patients had confirmed immune TTP (iTTP) diagnosis based on ADAMTS13 testing and were included in the comparison analysis. There was no difference in age or hemoglobin levels between the two groups. However, platelet count and creatinine levels were significantly lower in the TTP group. Most (92%) of the TTP patients had high PLASMIC scores. Twenty-two patients in the non-TTP TMA group received plasma exchange (PLEX) with a median of five PLEX sessions per patient. These are considered potentially preventable PELX sessions. ***Conclusions:*** ADAMTS13 provided a confirmatory diagnosis of TTP. A cost analysis will be conducted to determine whether a local ADAMTS13 assay will be cost-effective.

HISTOPATHOLOGY

Pediatric Glioma

Azaa Salim Hilal Al-Zakwani[1*] and Zahra Al Hajri[2]

[1]Anatomical Pathology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Department of Pathology, Khoula Hospital, Muscat, Oman

*Corresponding author: R2052@resident.omsb.org

ABSTRACT

Objectives: This study aims to reclassify the pediatric-type diffuse glioma cases reported at Khoula Hospital based on the new World Health Organization classification (2022) of central nervous system tumors. *Methods:* This is a retrospective and prospective cohort study conducted from January 2013 to January 2023. It included all the pediatric-type gliomas presented to Khoula Hospital from January 2013 to December 2023. Paraffin blocks and hematoxylin and eosin slides were obtained and reviewed. Specimens were sent for molecular analysis using the BRAF immunohistochemistry and pediatric glioma mutations panel by using next-generation sequencing. ***Results:*** A total of 101 cases of glioma with an average age of nine years were included in the study, 50% of which were pilocytic astrocytomas carrying BRAF mutation proven molecularly. Of the cases, there were ependymomas (21%) and high-grade gliomas (8%). Variable molecular mutations such as H3 K27ME mutation, IDH wild type and H3 wild type mutation, NTRK1, PDGFR, and P53 were noticed. Few cases of oligodendroglioma were identified. ***Conclusions:*** Half of the cases were pilocytic astrocytoma, commonly seen at the brain posterior fossa, proven molecularly to harbor BRAF mutation. High-grade gliomas were associated with H3 K27ME mutation, IDH wild type and H3 wild type mutation, NTRK1, PDGFR, and P53 mutations. Pilocytic astrocytoma cases have a better prognosis and better response to treatment compared to high-grade gliomas.

The Frequency and Impact of Missed Histopathology Reports

Sara Al Harthi[1*] and Radiya Al Ajmi[2]

[1]Histopathology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Department of Histopathology, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: r2053@resident.omsb.org

ABSTRACT

Objectives: We aimed to investigate the occurrence of missed histopathology reports within a single center over six months. The primary goal is to assess the consequences of these missed reports on patient outcomes, the effects on the quality of healthcare services, and the impact on healthcare costs. Secondary objectives include the frequency of discharging patients with pending pathology results and no follow-up appointments, and how missing these follow-up appointments. ***Methods***: The study was conducted at a single center, focusing on all specimens sent from the hospital only. Several considerations were taken into account, including the time between discharge and follow-up appointments, differentiating between the inpatient and outpatient cases, and considering the specimens sent shortly before the patient passes. To ensure randomization, the study's timeframe encompassed all specimens processed in the laboratory during the first week of each month from January to June 2022. The estimated minimum sample size was 582, with a 95% confidence interval and a 3% margin of error. Data collection was facilitated through the data information systems at the center. ***Results:*** Out of 586 specimens, 475 (81%) reports were viewed, while 111 (19%) were

missed. Five (4.5%) patients returned to the Emergency Department with recurring initial complaints, and their reports were again unreviewed. The specific findings included severe inflammation requiring treatment (n = 3), gastric biopsies with intestinal metaplasia (n = 2), colonic biopsies showing low-grade dysplasia (n = 3), cases of Barrett's esophagus (n = 2), and instances of symptomatic *H. pylori* infection (n = 2). There were also three repeated colonoscopies for diagnosis and disease monitoring without reviewing the reports of the last biopsy. Of 586 patients, 506 had scheduled follow-up appointments, and 462 (91%) attended. Among these attended appointments, 436 (86%) reports were viewed, while 26 (5%) reports were not reviewed. Forty-four (9%) patients failed to show up. Among these, 20 (45%) appointments were viewed, and 24 (55%) were unreviewed. We also found that 13 out of 35 placenta specimens received were scheduled for a follow-up, and only 11 results were viewed. ***Conclusions:*** Although the study did not uncover any serious adverse effects, it highlighted critical issues such as delayed diagnosis, the importance of early detection for effective treatment, increased costs associated with repeated samples, and unnecessary histopathological examinations. Medicolegal issues can also arise; for instance, in cases of incomplete or improper surgical resection.

INTERNAL MEDICINE

Delirium, Prevalence, Risk Factors and its Association with Short and Long-Term Health Outcomes in Medically Hospitalized Elderly Patients: A Prospective Study

Rajaa Saleh Al Farsi[1] , Abdullah M. Al Alawi[2]*, Aisha Ramadhan Al Huraizi[2], Taif Al-Saadi[3], Noof Al-Hamadani[3], Khalfan Al Zeedy[2] and Juhaina Salim Al-Maqbali[4,5]

[1]*Internal Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Medicine, Sultan Qaboos University Hospital, Muscat, Oman*

[3]*School of Medicine, Royal College of Surgeons in Ireland, Dublin, Ireland*

[4]*Department of Pharmacy, Sultan Qaboos University Hospital, Muscat, Oman*

[5]*Department of Pharmacology and Clinical Pharmacy, College of Medicine and Health Science, Sultan Qaboos University, Muscat, Oman*

* *Correspondence: dr.abdullahalalawi@gmail.com*

ABSTRACT

Objectives: This study aimed to determine the prevalence, recognition, risk factors, and course of delirium among elderly patients admitted to Sultan Qaboos University Hospital (SQUH) and assess its impact on short and long-term health outcomes. ***Methods***: A prospective cohort study included elderly patients aged 65 years old admitted to the medical wards at SQUH. Delirium was screened by a trained research assistant using the 3-minute Diagnostic Confusion Assessment Method (3D-CAM). Also, medical records were reviewed for associated factors. ***Results:*** The prevalence of delirium among hospitalized elderly patients at SQUH was 55.4% (95% CI: 49.9-60.7). Among the patients with delirium, 33.2% were not recognized by the treating team. Hypoactive delirium was the most common type. Logistic regression analysis revealed several independent risk factors for delirium, including pre-existing cognitive impairment (odds ratio (OR) = 4.0), poor functional status (OR = 1.9), medication use known to precipitate delirium (OR = 2.3), polypharmacy (OR = 5.7), urinary catheterization (OR = 2.2), dehydration (OR = 3.1), and electrolyte imbalances (OR = 2.0). Additionally, 56.9% of patients with delirium continued to have delirium upon discharge from the hospital. Delirium had a significant impact on short and long-term health outcomes. Patients with delirium had longer hospital stays than those without delirium (seven days vs. five days; $p < 0.01$). Delirium was associated with a higher frequency of high dependency unit or intensive care unit admission ($p < 0.01$) and an increased incidence of hospital-acquired complications, including infections ($p = 0.03$), pressure injuries ($p = 0.01$), and upper gastrointestinal bleeding ($p < 0.01$). Inpatient all-cause mortality was higher in patients with delirium than those without delirium (16.3% vs. 1.5%; $p < 0.01$). Furthermore, patients with delirium had higher rates of 90-day all-cause mortality (25.4% vs. 8.4%; $p < 0.01$) and one-year all-cause mortality (35.9% vs. 16%; $p < 0.01$), with delirium exhibiting shorter survival periods at 90 days and one year (hazard ratio (HR) = 3.41, 95% CI: 1.75-6.66; $p < 0.01$ and HR = 2.64, 95% CI: 1.59-4.37; $p < 0.01$, respectively). ***Conclusions:*** Delirium is common among elderly patients hospitalized in general medical wards and is associated with serious short-term and long-term clinical consequences. Early recognition, prevention, targeted interventions addressing reversible risk factors, and developing geriatric wards are crucial. Further research is necessary to explore effective management strategies for delirium in general medical wards and to optimize patient care.

Anthracycline-induced Cardiomyopathy in Oman

Hussain Al Lawati[1*], Khalid Al Bimani[2] and Mohamed Najeeb Al Rawahi[3]

[1]*Internal Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Oncology Department, Sultan Qaboos Comprehensive Cancer Care and Research Centre, Muscat, Oman*

[3]*Cardiology department, Sultan Qaboos University Hospital, Muscat, Oman*

[*]*Corresponding author: r2054@resident.omsb.org*

ABSTRACT

Objectives: One of the known adverse effects of anthracyclines is anthracycline-induced cardiomyopathy. Studies done worldwide showed that the prevalence of chemotherapy-induced cardiomyopathy is around 9%. However, no studies about this disease prevalence, risk factors, and cumulative dose were done in Oman. The study aimed to investigate the prevalence of anthracycline-induced cardiomyopathy among breast cancer patients at Sultan Qaboos University Hospital (SQUH) in Oman. ***Methods***: This retrospective study included all breast cancer patients who were exposed to anthracycline-based chemotherapy and received treatment exclusively at SQUH after being diagnosed between September 2008 and December 2020. Patients with partial treatment, coexisting heart failure, and who did not receive anthracycline as part of the chemotherapy regimen were excluded from the study. Chemotherapy-induced cardiomyopathy was defined as a drop of left ventricular ejection fraction > 10% from the patient's baseline during or after receiving anthracycline-based chemotherapy. ***Results:*** Out of 385 patients, 39 (10.1%) patients developed cardiomyopathy after exposure to anthracyclines. The mean cumulative dose of doxorubicin among these patients was 239 mg/m^2 (epirubicin was converted to doxorubicin equivalent dose). Univariate analysis showed that the risk of anthracycline-induced cardiomyopathy was influenced by cardiovascular risk factors: hypertension (13.0%), diabetes (17.9%), dyslipidemia (19.5%), and previous cardiovascular medications use (36.4%). Concurrent trastuzumab use was significantly correlated with an increased risk of developing cardiomyopathy (p < 0.001). However, multivariate analysis did not show any significant association. ***Conclusions:*** Given these findings, further studies are recommended to investigate the prevention and management of anthracycline-induced cardiomyopathy.

Clinical Characteristics, Etiology, and Prognostic Scores in Patients with Decompensated Liver Cirrhosis: A Retrospective Study from the Middle East and North Africa

Hour Al Kaabi[1]*, Abdullah Al Alawi[1,2], Zubaida Al Falahi[1,2], Zakariya Al-Naamani[2] and Said Al Busafi[1,2,3]

[1]*Internal Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Medicine, Sultan Qaboos University Hospital, Muscat, Oman*

[3]*College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman*

**Corresponding author: r2061@resident.omsb.org*

ABSTRACT

Objectives: Liver cirrhosis is a significant global health burden, imposing challenges on patients, healthcare systems, and financing. While several studies have explored the clinical aspects of liver cirrhosis, there remains limited research from the Middle East and North Africa (MENA) region on this topic. In this study, we aimed to investigate the patients' characteristics, the etiology of liver cirrhosis, and the accuracy of prognostic scores in predicting short-term and long-term mortality. ***Methods***: A retrospective study was conducted at Sultan Qaboos University Hospital in Oman, including adult patients admitted between January 2015 and December 2021 with acute decompensation of liver cirrhosis. Demographic, clinical, and biochemical data were collected from the electronic health records and prognostic scores including Child-Turcotte-Pugh (CTP), Model for End-stage Liver Disease (MELD), and Chronic Liver Failure Consortium (CLIF-C) were calculated. The primary outcomes assessed were 28- and 90-day mortality rates. ***Results:*** A total of 173 patients were included in the study, with a mean age of 58.0±13.8 years, and 71.7% were males. The most common comorbidities were hypertension (44.5%), diabetes mellitus (43.4%), and heart failure (20.8%). Alcohol (29.5%), hepatitis C virus (27.8%), and hepatitis B virus (26.7%) were the leading causes of liver cirrhosis. During the median follow-up of 20.8 months, the one-year readmission rate was 42.2%, and 22.5% of patients developed hepatocellular carcinoma. The overall mortality rate during the follow-up period was approximately 40.0%, with 28- and 90-day mortality rates at 20.8% and 25.4%, respectively. The prognostic scores (CTP, MELD-Na, and CLIF-C) demonstrated significant predictive ability for mortality at 28 and 90 days. ***Conclusions:*** This study provides crucial insights into the characteristics and etiology of liver cirrhosis in the MENA region. The prognostic scores (CTP, MELD-Na, and CLIF-C) showed utility in predicting short-term and long-term mortality, aiding in risk stratification and patient management. Further research and clinical attention in this region is warranted to address the high burden of liver cirrhosis and its associated complications.

MICROBIOLOGY

Evaluation of Clinical Characteristics of Q Fever Patients in Oman and the Diagnostic Usefulness of The Current Serological Testing Methods

Surkhab Khan Mohammad Suleman Sarfaraz[1]* and Hilal Al Sidairi[2]

[1]*Microbiology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Microbiology and Infectious Disease Department, Royal Hospital, Muscat, Oman*

**Corresponding author: r2079@resident.omsb.org*

ABSTRACT

Objectives: This study aimed to profile the epidemiology and clinical manifestations of Q fever in patients with febrile illnesses and to analyze the diagnostic methods for Q fever and their clinical correlation. ***Methods***: A retrospective descriptive study was conducted at the Royal Hospital in Muscat, Oman, between 1 January 2017 and 31 December 2021. Medical records of patients diagnosed with Q fever were reviewed. Data collected included demographic information, epidemiological data, clinical findings, laboratory test results, treatment regimens, and outcomes. Serologic testing for Q fever was performed using enzyme-linked immunosorbent assay (ELISA), polymerase chain reaction (PCR), and indirect immunofluorescence antibody (IFA) methods. Statistical analysis was conducted using SPSS. ***Results:*** A total of 243 febrile patients were tested for Q fever. Among them, 20 (8.2%) patients received a Q fever diagnosis. PCR analysis detected *C. burnetii* DNA in three cases, while 12 patients tested positive through IFA. The majority (91%) were tested using ELISA, with 44 positive. Notably, ELISA demonstrated limitations in terms of sensitivity, specificity, and potential for false results. The median age of the patients was 25, and 70% were female. Among the patients, 35% had no underlying diseases, while 25% were immunocompromised. Epidemiologically, 65% of patients had contact with animals, and 75% lived in rural areas. The median time from illness onset to seeking medical care was 30 days, leading to delayed diagnosis and treatment initiation. Clinical manifestations included fever (70%), myalgia (35%), cough (60%), and pneumonia (55%). Endocarditis was a frequent clinical manifestation in patients with chronic Q fever. ***Conclusions:*** This study highlighted the challenges in diagnosing Q fever, particularly in non-endemic regions like Oman. Clinical manifestations exhibited considerable variability, with pneumonia emerging as the predominant clinical presentation. The study also observed instances of chronic Q fever, notably endocarditis, emphasizing the critical need for proactive screening and diligent follow-up. For patients with negative ELISA results, alternative diagnoses included culture-negative infective endocarditis, malignancy, Brucella infection, viral diseases, and autoimmune conditions with the majority of patients diagnosed as having unexplained fever. While ELISA served as the predominant diagnostic tool, it is crucial to acknowledge its limitations, which encompass reduced specificity, sensitivity, and a propensity for cross-reactivity, potentially resulting in both false-negative and false-positive outcomes. This underscores the pressing need to enhance awareness within the medical community regarding the judicious utilization of ELISA in the diagnostic process. Employing supplemental serological assessments such as PCR and IFA is essential for confirming Q fever diagnoses, especially in patients with underlying risk factors. This study unequivocally underscores the significance of adopting a comprehensive diagnostic approach, with IFA emerging as the preferred method for Q fever diagnosis. Furthermore, it underscores the pressing need for robust epidemiological surveillance efforts within Oman and the broader Gulf region to gain deeper insights into the prevalence and impact of Q fever in this geographic area.

The Rate of Bacterial/Fungal Co-infections and Secondary Infections in Hospitalized COVID-19-infected patients at a Tertiary Care Hospital in Oman

Fatiya Al-Salmi[1]* and Turkiya Al-Siyabi[2]

[1]*Medical Microbiology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Medical Microbiology, Sultan Qaboos University Hospital, Muscat, Oman*

**Corresponding author: r2078@resident.omsb.org*

ABSTRACT

Objectives: This study aimed to estimate the rate of co-infections and secondary infections among adult patients infected with COVID-19. Furthermore, to describe the clinical characteristics and the risk factors for patients with/without co-infections and secondary infections and to understand the pathogens associated with these infections. ***Methods***: This study was a single-center, retrospective observational study. We included all laboratory-confirmed COVID-19-infected adult patients admitted at Sultan Qaboos University Hospital from March 2020 to December 2022. Demographic, clinical, and microbiological data were collected retrospectively from the hospital information system (Track-care and lab-track). ***Results:*** A total of 373 adult patients with COVID-19 infection were included. One hundred thirteen episodes of infections were found in 92 patients with a total prevalence of 24.7 (95% CI: 20.37-29.36). Community-acquired infections were 2.1%, whereas hospital-acquired infections accounted for 22.8%. The majority of patients had at least one comorbidity, visited the intensive care unit, and received steroids as part of treatment for COVID-19 pneumonia. Overall, 92% were bacterial infections and 8% fungal. *Pseudomonas aeruginosa* and *Klebsiella spp.* were the most common organisms isolated for healthcare-associated infections. The fungal infections identified were hospital-acquired, and candidemia was the most common infection caused by different species. The overall mortality rate was 60% in hospitalized patients with superinfections. ***Conclusions:*** To better understand the rate of co-infections, diagnostic algorithms are needed for early detection and management. Further studies are suggested to understand the contributing factors to co-infections and superinfections in the Omani population.

In Vitro Susceptibility Testing of Fosfomycin against Gram-negative Bacteria Using Agar Dilution, Gradient Diffusion, Disc Diffusion, and Phoenix™

Afaf Mohammed Ali Al Farsi[1]* and Badriya Al Adawi[2]

[1]Microbiology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Department of Microbiology and Immunology, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: r2080@resident.omsb.org

ABSTRACT

Objectives: This study aimed to find an alternative susceptibility testing method for fosfomycin that can replace agar dilution. The three chosen methods were Phoenix™, gradient diffusion, and disc diffusion. The susceptibility rate to fosfomycin was assessed to predict usefulness in empirical therapy. ***Methods***: This is an experimental study. One hundred and thirteen clinical isolates of *E. coli*, *Klebsiella pneumoniae,* and *Pseudomonas aeruginosa* were collected. Each isolate was tested for susceptibility using gradient diffusion, disc diffusion, and Phoenix™. The isolates were also tested using agar dilution, which is the reference method. The results obtained by each method were compared to agar dilution. Concordance with the agar dilution was assessed using four performance metrics: essential agreement, categorical agreement, major error rate (false resistant), and very major error rate (false susceptible). Passing criteria were based on Clinical Laboratory Standards Institute (CLSI) recommendations. ***Results:*** Out of 113 isolates, 65% were found to be susceptible to fosfomycin when tested with agar dilution. When compared to agar dilution, Phoenix™ showed 92.9% essential agreement, 89.0% categorical agreement, 2.7% major error rate, and 25.6% very major error rate. On the other hand, gradient diffusion showed 63.7% essential agreement, 87.6% categorical agreement, 6.7% major error rate, and 23.0% very major error rate. Finally, disc diffusion showed 92.9% categorical agreement, 7.0% major error rate, and 15.0% very major error rate. ***Conclusions:*** The fosfomycin susceptibility rate amongst our isolates was 65%. None of the three evaluated methods can completely replace agar dilution because none of them passed all acceptable criteria. Phoenix and disc diffusion showed an acceptable major error rate (< 3%), which means that a 'resistant' result produced by these two methods is probably true and requires no further testing. However, agar dilution remains to be the only method that can reliably assign a 'susceptible' result for fosfomycin.

OBSTETRICS AND GYNECOLOGY

Placental Histopathology Findings in Pregnant Women Infected with COVID-19 at a Tertiary Healthcare Centre in Oman

Aisha Al Balushi[1]*, Vaidyanathan Gowri[2] and Marwa Al Riyami[3]

[1]Obstetrics and Gynecology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Obstetrics and Gynecology Department, Sultan Qaboos University Hospital, Muscat, Oman

[3]Department of Pathology, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: aaisha.k18@resident.omsb.org

ABSTRACT

Objectives: The aim of this study is to look at the histological changes in the placenta of women infected with COVID-19 irrespective of the gestation and duration of the illness to delivery. ***Methods***: This was a descriptive prospective study conducted over 13 months (from June 2020 to July 2021), targeting women who tested positive for COVID-19 and delivered at Sultan Qaboos University Hospital. Also, those who miscarried and had evacuation done under general anesthesia were included, as they tested positive for COVID-19, and the products were sent for histology. Placental examination including gross and microscopic examinations was performed as per the Amsterdam criteria. Formalin was used for fixation and hematoxylin stains. The data was retrieved from the hospital's electronic patient records. ***Results:*** A total of 64 patients were included. The median age of infection was 34 weeks of gestation and at delivery was 38 weeks. The gestational age at infection included patients with normal/abnormal placenta histopathology with a p-value of 0.364. The placenta histopathology reported normal in 34 (53.1%) patients and abnormal in 30 (46.9%)patients. The abnormality in placenta histopathology included nine (30.0%) patients with COVID-19 and 21 (70.0%) patients with COVID-19 and other comorbidities. The maternal vascular malperfusion reported a total of 26 abnormalities of histopathology (including villous agglutination, infarct, and intervillous thrombus). The fetal vascular malformation reported 17 abnormalities of histopathology (chorangiosis, villitis, and acute funisitis). However, none of these histopathology findings were specific to COVID-19 patients. The neonatal outcome was good Apgar scores. ***Conclusions:*** In our limited study, non-specific histomorphology changes were suggestive of maternal-fetal vascular malperfusion in the placenta of women infected with COVID-19 irrespective of the gestational age of infection. Further studies, including more sensitive techniques like immunohistochemistry for viral infection, are warranted.

Exploring the Frequency of Antiphospholipid Antibodies, Antinuclear Antibodies, and Thrombophilia in Omani Females with Recurrent Pregnancy Loss

Laila Al Wadhahi[1]*, Rahma Al Ghabshi[2], Malar Thanikasalam[2] and Asayel Al Mahrouqi[1]

[1]Obstetrics and Gynecology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Obstetrics and Gynecology Department, Khoula Hospital, Muscat, Oman

*Corresponding author: laila.w19@resident.omsb.org

ABSTRACT:

Objectives: To explore the frequency of antiphospholipid antibodies (APLA), antinuclear antibodies (ANA), and thrombophilia in women attending the recurrent pregnancy loss (RPL) clinic. Also, to find the associated morbidities and pregnancy outcomes in patients detected with APLA, ANA, and thrombophilia. ***Methods***: This is a retrospective cohort study conducted in women who attended the RPL clinic at the Royal Hospital from 2018 to 2021. Patients' data were collected from the Al-Shifa Electronic System and were reviewed. ***Results:*** A total of 450 women were included in the study. Most age groups were between 30 and 34 (29.8%). The majority of the patients were non-consanguineous. Most of the recurrent pregnancy loss happened in the 1st trimester (69.6%). Most of the chromosomal investigations for couples were normal (49.6%). APLA (2%), ANA (6%), and thrombophilia (5.1%) were lower than reported worldwide prevalence. Protein S deficiency is the most common in patients with thrombophilia, and most positive cases were in 1st trimester. Most of the cases with positive APLA, ANA, and thrombophilia received aspirin and heparin. Around 18% lost follow-up or were not pregnant. Patients with positive APLA, ANA, and thrombophilia received treatment. Among them, 7 had positive APLA (with miscarriage = 3, term = 2, and preterm = 2; with intrauterine growth restriction = 1 and no preeclampsia), 19 had ANA (with miscarriage = 7, term = 7, preterm = 2, small for gestational age= 1, and preeclampsia = 2), and 10 had thrombophilia (miscarriage = 2, term = 7, and preterm = 1; with intrauterine growth restriction = 2 and preeclampsia = 1). ***Conclusions:*** The percentage of patients with positive APLA, ANA, and thrombophilia in this study was lower than the reported world prevalence. Patients with positive APLA and ANA and who received aspirin and Low molecular weight heparin have better outcomes in terms of preterm, pre-eclampsia, and pregnancy-induced hypertension. There is some missing data regarding ANA and thrombophilia. Recurrent pregnancy loss is a stressful situation, so there was no control group to compare with the above findings. Our research was conducted in one center and one region, hence a multi-center study is suggested.

Maternal and Fetal Outcome in Pregnant Women with Mechanical Valve at a Tertiary Center in Oman

Ahlam AL-Hanashi[1] and Shamsa AL-Hinai[2]

[1]Obstetrics and Gynecology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Obstetrics and Gynecology Department, Royal Hospital, Muscat, Oman

*Corresponding author: Ahlam.h19@resident.omsb.org

ABSTRACT

Objectives: To assess the risk of pregnancy outcome, maternal and fetal among women with mechanical heart valves. ***Methods***: A retrospective cohort study was conducted among all women with mechanical heart valves who were followed up and delivered at the Royal Hospital over 10 years period (from January 2010 to December 200). The data was collected from Al-Shifa Electronic Health Record System. SPSS statistical program was used for data analysis. ***Results:*** A total of 301 patients were included. Sixty-one patients (20.3%) were Primigravida whereas 79.7% were women with multiple pregnancies. Bioprosthetic valves were found in 199 (66.1%) patients and 248 (82.4%) patients were with single valve replacement. Rheumatic heart disease was the common reason for valve replacement in 59.5% of the cases. Since the majority of patients were with bioprosthetic valves, 65.8% were not on anticoagulation therapy. Regarding maternal outcome: the mortality rate was 2.0%, whereas other complications including valve thrombosis and pregnancy-induced hypertension were (3.0%). Miscarriage was found in 21.3% of the cases and was seen more with patients who were on warfarin. The rate of cesarean section was 23.0% compared to spontaneous vaginal delivery of 77.0%. Termination was indicated in five patients (1.7%) with variable reasons for terminations including maternal and fetal indications. For the fetal outcome: 193 (64.1%) were term, 15 (5.0%) were preterm, out of which 43 (14.3%) infants required neonatal intensive care unit admission. Perinatal mortality was 1.3%. Fifty-three (17.6%) were low birth weight newborns and three cases (1.0%) were with fetal anomalies. ***Conclusions:*** Women with heart valves experienced a higher risk of adverse outcomes than expected in the general obstetric population. Women with bioprosthetics have fewer adverse outcomes. Multidisciplinary pre-pregnancy counseling is important. Further study with a control group and a patient who is following the same anticoagulation protocol will help to improve the study.

OMFS

Analysis of Complications and Outcome of Orbital Fracture Repair in Oman

Saleh Al Ghailani[1*], Abdulaziz Bakathir[2], Ahmed Al Hashmi[3], Ahmed Al Ajmi[4] and Tiamour Al Baloshi[5]

[1]Oral and Maxillofacial Surgery Residency Training Program, Oman Medical Speciality Board, Muscat, Oman

[2]Dental and Maxillofacial Surgery Department, Sultan Qaboos University Hospital, Muscat, Oman

[3]Dental and Maxillofacial Surgery Department, Al-Nahda Hospital, Muscat, Oman

[4]Dental and Maxillofacial Surgery Department, Sohar Hospital, Muscat, Oman

[5]Plastic and Reconstructive Surgery Department, Khoula Hospital, Muscat, Oman

*Corresponding author: r2087@resident.omsb.org

ABSTRACT

Objectives: This multi-center retrospective study was conducted to investigate and analyze the complications and the results of post-orbital fracture repair in Oman. ***Methods***: This study included all patients with orbital floor and/or medial wall fractures who underwent orbital reconstruction at four tertiary hospitals in Oman between January 2014 and December 2021. Data included were the patient's demographic, fracture etiology, surgical approach, reconstruction material, complications, and outcome of repair. ***Results:*** A total of 41 patients were included in the study. Motor vehicle accidents (MVC) (53.7%) were the most common cause of orbital fractures. Twenty-five patients had isolated orbital fractures, 12 were associated with the zygomaticomaxillary complex, and four patients with naso-orbital ethmoidal. The transconjunctival approach was the commonest surgical approach (36.6%) followed by the infra-orbital approach (24.4%). Titanium mesh was the main implant used (63.0%). Ten patients had post-operative complications giving an overall complication rate of 24.4%. The two most commonly reported complications were enophthalmos (17.1%) and residual diplopia (13%). Analysis of 24 postoperative computed tomography showed that the ideal position of implant material in the anterior, middle, and posterior zones was achieved in 87.5%, 45%, and 13% of the cases, respectively. ***Conclusions:*** The findings showed that most of the encountered cases of orbital fracture were due to MVC and the complication rate of orbital reconstruction was low and comparable to published literature.

Pediatric Temporomandibular Joint Ankylosis in Oman: Pattern, Causes, and Surgical Management

Shahara Al Washahi[1*], Ahmed Al Hashmi[2], Abdulaziz Bakathir[3], and Said Al Rashdi[4]

[1]Oral & Maxillofacial Surgery Residency Program, Oman Medical Specialty Board, Muscat, Oman

[2]Department of Dental, Oral and Maxillofacial Surgery, Al Nahdha Hospital, Muscat, Oman

[3]Departments of Dental and Maxillofacial Surgery, Sultan Qaboos University Hospital, Muscat, Oman.

[4] Department of Dental, Oral and Maxillofacial Surgery, Al Nahdha Hospital, Muscat, Oman

*Corresponding author: r2088@resident.omsb.org

ABSTRACT

Objectives: This study aims to describe the clinical manifestations, treatment modalities, and outcomes of temporomandibular joint (TMJ) ankylosis in Omani pediatric patients. ***Methods***: This is a retrospective study of all pediatric patients diagnosed with TMJ ankylosis who underwent surgical treatment between January 2000 and December 2020 at Al-Nahdha Hospital and Sultan Qaboos University Hospital in Oman. ***Results:*** Fourteen patients were included in this study during the period. The results showed that males are more affected by TMJ ankylosis than females (8:6). The most common etiology of TMJ ankylosis was trauma (n = 9, 64.3%) followed by septic arthritis (n = 4, 28.6%), and unknown etiology (n = 1, 7.1%). Left ankylosis (n = 10, 71.4%) was more common than the right side (n = 4, 28.6%). Apnea was found to be present in 50% of patients with TMJ ankylosis. All patients were managed surgically. TMJ ankylosis release, gap arthroplasty and interposition by temporalis fascia in six patients. Gap arthroplasty and disc repositioning in four patients with no re-ankylosis in all patients. In four patients, gap arthroplasty and costochondral graft have been used. Mandibular distraction osteogenesis has been done on two patients who also have obstructive sleep apnea and retrognathia (triad cases) before releasing ankylosis. ***Conclusions:*** The most common aetiological factors of TMJ ankylosis in the Omani pediatric population are trauma and septic arthritis. A variety of treatment modalities have been provided according to individual case requirements. Triad cases benefit from mandibular distraction osteogenesis prior to the release of ankylosis. None of the treated 14 cases had subsequent re-ankylosis.

Complications of Orthognathic Surgery in Oman: A Retrospective Analysis over 14 Years (2008-2021)

Ahmed Shawqi Al Qattan[1*] and Ahmed Al Hashmi[2]

[1]Oral and Maxillofacial Surgery Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Department of Dental, Oral and Maxillofacial Surgery, Al Nahdha Hospital, Muscat, Oman

*Corresponding author: r20134@resident.omsb.org

ABSTRACT

Objectives: This study aims to identify the most prevalent orthognathic surgery complications in Oman in patients treated over 14 years. ***Methods:*** A retrospective analysis of medical records of patients who underwent

orthognathic surgery between 2008 to 2021 was conducted. An evaluation was performed for variables including complication occurrence (intraoperative or postoperative), age at surgery, gender, diagnosis, type of surgery performed, procedure followed, and hospitalization duration. Based on the Clavien-Dindo classification, the recorded complications were evaluated, graded, and analyzed. ***Results:*** A total of 907 patients' records were collected. Age ranges from 16-58 years with a mean age of 25.32 ± 6.34 years. Incidences of orthognathic complications recorded include nerve injury (12.3%), relapse (8.5%), hardware failure (8%), temporomandibular disorder (5.8%), bad split (5.3%), wound dehiscence (4.3%), dental injury (1.8%), intraoperative hemorrhage (1.7%), and condyle resorption (0.6%). According to the Clavien-Dindo classification, 60% of patients had grade I complications, 13.3% had grade 2, 26.3% had grade 3, and 0.4% had grade 4 complications. Statistically, no significant relationship was observed between complication grades and age, sex, and duration of hospital stay. ***Conclusions:*** Orthognathic surgery remains a safe and routine procedure with most complications effectively managed with mild long-term consequences in most instances. The complications reported in this retrospective study demonstrate Oman's experience to be fairly consistent with other international studies.

OPHTHALMOLOGY

Long-term Ocular and Neurodevelopmental Outcomes in Children Treated with Intravitreal Ranibizumab Monotherapy for Retinopathy of Prematurity: A Retrospective Cohort Study from Two Tertiary Hospitals in Oman

Khulood Abdullah Al Kalbani[1]* and Anuradha Ganesh[2]

[1]*R5, Ophthalmology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Ophthalmology, Sultan Qaboos University Hospital, Muscat, Oman*

**Corresponding author: khulood.k19@resident.omsb.org*

ABSTRACT

Objectives: To evaluate the ocular and neurodevelopmental status in premature children aged five to six years post intravitreal ranibizumab (IVR) therapy for retinopathy of prematurity (ROP). ***Methods***: In this retrospective cohort study, 36 premature Omani children (gestational age ≤ 32 weeks; birth weight ≤ 1500 g) born between 2016 and 2018 were recruited when they were five to six years of age and divided into three study groups: Group A were children treated with IVR (0.25 mg Ranibizumab, Lucentis ®) monotherapy for type 1 ROP; Group B were children with type 2 or less ROP not requiring treatment; and Group C were preterm children without ROP. Medical records were reviewed, and children were invited to undergo a one-time ophthalmic and neurodevelopmental assessment at Sultan Qaboos University Hospital. The sample size (16 subjects in each study group) was calculated using nMaster software, version 2.0. The difference between the two means and standard deviations were used, with an alpha error of 5% and 80% power with 2-sided tests. Continuous data were analyzed using one-way ANOVA or Kruskal-Wallis tests. Categorical data were analyzed using chi-square tests. All results were analyzed using the IBM SPSS Statistics 23.0 software program. A p-value of < 0.05 was considered significant. ***Results:*** The three groups were matched for gestational age, Apgar scores, intraventricular hemorrhage, and culture-proven sepsis. Group C demonstrated a higher mean birth weight. The mean age at examination was 5.31±0.618 years. For the primary outcome (ocular), 72 eyes of 36 patients were included in the analysis. The eyes in study group A were more myopic (-1.92D±3.80D) than in the control groups B and C (+1.23D±1.03D and +0.63D±0.77D respectively; $p < 0.001$). Central macular thickness and the foveal avascular zone area did not differ significantly between the groups. Eyes in group A had a lower vessel density in the superficial macular plexus ($p = 0.008$). For the secondary outcome (neurodevelopmental), 20 patients underwent neurodevelopmental assessment. No significant difference was found in the overall developmental quotient between the groups ($p = 0.68$). However, group A demonstrated lower scores in the hearing and language domains when analyzing specific domains ($p = 0.05$). ***Conclusions:*** IVR-treated eyes showed higher levels of myopia and astigmatism and a lower superficial macular plexus density. IVR therapy did not affect the central macular thickness and the foveal avascular zone area. There was no significant difference in neurodevelopment between the study groups; however, IVR-treated eyes demonstrated lower scores in the hearing and language domains.

Pyogenic Granuloma Following Upper Eyelid Tarsotomy: A Retrospective Cohort Study

Samira Khalfan Abdullah Al Jabri[1]* and Al Yaqdhan Al Qafri[2]

[1]*Ophthalmology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Ophthalmology Department, Al Nahdha Hospital, Muscat, Oman*

**Corresponding author: r2089@resident.omsb.org*

ABSTRACT

Objectives: We aimed to investigate the incidence and risk factors associated with the development of pyogenic granuloma following upper eyelid tarsotomy, a surgical procedure primarily used to treat entropion.

This investigation addresses a gap in ophthalmic literature regarding the risk factors for this postoperative complication. ***Methods***: This retrospective cohort study encompassed all Omani patients who underwent upper eyelid tarsotomy procedures from January 2018 to December 2022. The collected data included patient demographics, clinical diagnoses, surgical details, and management strategies for pyogenic granuloma. ***Results:*** A sample size of 198 eyes was examined during the study period. The study participants had a mean age of 68.5 years, with 80.3 % females and 19.7% males. The incidence of pyogenic granuloma post-upper eyelid tarsotomy was 12.1% (95% CI: 7.9-17.5). The mean duration between surgery and the onset of pyogenic granuloma was 2.54 months, with a mean±SD of 1.50±2.99 months. The mean duration of pyogenic granuloma-free survival was 44.309 months (95% CI: 40.4-48.2). Notably, the one-year pyogenic granuloma-free survival rate was 83.4%, indicating a favorable short-term prognosis. Several risk factors for pyogenic granuloma development were identified. Revision surgery did not increase the risk compared to initial surgeries. The choice of incision technique (monopolar vs. blade) did not significantly affect pyogenic granuloma occurrence. However, the use of more than three sutures was associated with a substantial risk increase, with a Fisher's exact $p = 0.029$, while suture size did not exhibit a significant impact. Prophylactic post-operative steroid use did not have a statistically significant preventive effect on pyogenic granuloma occurrence. Importantly, the recurrence rate of pyogenic granuloma after initial treatment was 8.3%, with no significant differences in recurrence rates between medical and surgical intervention cases. ***Conclusions:*** This retrospective cohort study sheds light on the incidence and risk factors associated with pyogenic granuloma development following Upper eyelid tarsotomy. While the short-term prognosis is favorable, the study provides valuable insights into factors that may increase the risk of pyogenic granuloma, enabling more informed clinical decision-making and patient care. Prevention and careful management of this condition is crucial, emphasizing the need for meticulous surgical techniques and postoperative follow-up to minimize complications and enhance patient satisfaction. Further prospective research may help refine strategies to mitigate the occurrence of pyogenic granuloma after Upper eyelid tarsotomy procedures.

Randomized Clinical Trial on Atropine 0.01% for the Control of Myopia in Omani Children: Two-year Efficacy Results (Phase 1 Report)

Balqees Rashid Said Al Mahrizi[1]* and Anuradha Ganesh[2]

[1]Ophthalmology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Pediatric Ophthalmology, Strabismus, and Ocular Genetics, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: r2090@resident.omsb.org

ABSTRACT

Objectives: To evaluate the efficacy and safety of topical atropine 0.01% in slowing myopia progression and ocular axial elongation in Omani children. ***Methods***: This is a randomized, interventional, open-label, clinical trial (NCT03508817; Clinical Trials.gov). Participants were 110 Omani children aged six to 15 years with refractive error of spherical equivalent -2.00 to -8.00 diopters (D) and astigmatism of 1.50 (D) or less. This study was conducted at the Pediatric Ophthalmology Unit, Sultan Qaboos University Hospital. Children were randomized into the intervention and control group using a computer-based randomization sequence. In phase one (efficacy), the interventional group received topical atropine 0.01%, one drop at bedtime daily for two years. The control group received no medication. Patients were followed up every three months. Children in both groups were advised optimal myopia correction with single-vision glasses. On phase two (rebound phenomenon), atropine eyedrops were stopped in the intervention group. Patients were followed up every six months for one year. Ethical approval was issued by the Medical Research and Ethics Committee, Sultan Qaboos University (MREC#1473). To expect a 20% reduction in the progression in the atropine group with 90% power and 5% alpha error with a two-sided test, we need to study 58 subjects in each group. Data were analyzed using the intention-to-treat principle and the Mann-Whitney non-parametric test. ***Results:*** Sixty-five children (130 eyes; 59%) have completed two years of the study and were included in the analysis. At the end of two years, the mean spherical equivalent progression was -0.36 ± 1.57 D and -0.98 ± 1.47 D in the intervention and control groups, respectively ($p = 0.007$). The mean axial length progression was 0.36 ± 0.33 mm and 0.39 ± 0.26 mm in the intervention and control groups, respectively ($p = 0.282$). The mean change in photopic and scotopic pupil size was 0.41 ± 0.80 mm and 0.34 ± 0.70 mm in the intervention group, whereas 0.08 ± 0.86 mm and 0.02 ± 0.82 mm in the control group ($p = 0.002$, $p = 0.009$), respectively. Accommodation amplitude remained unaffected. No serious adverse events related to atropine were reported. ***Conclusions:*** Over two years, topical atropine 0.01% effectively slowed the progression of low and moderate myopia in Omani children and was well tolerated. The availability of an effective and low-cost myopia-retarding medication such as atropine 0.01% is timely and could make both clinical and economic sense as a public health measure.

ORTHOPEDICS

Functional Outcome of Medial Patellofemoral Ligament Reconstruction in Patients with Patellar Instability in One Year Follow-up Attending Khoula Hospital from January 2013 to December 2021

Faisal Al Shafei[1]*, Ismail Al Habsi[2] and Suwailim Al Ghanami[2]

[1]Orthopedic Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Orthopedic Department, Khoula Hospital, Muscat, Oman

*Corresponding author: Faisal.s19@resident.omsb.org

ABSTRACT

Objectives: To look for the rate of dislocation and functional outcome after one year with patients who had isolated medial patellofemoral ligament (MPFL) reconstruction and patients who had combined procedures (MPFL reconstruction and tibial tubercle osteotomy). ***Methods***: This is a descriptive cohort retrospective study including patients with patellar dislocation managed with isolated MPFL reconstruction or had combined procedures (MPFL reconstruction and tibial tubercle osteotomy) attending Khoula Hospital from January 2013 to December 2021. Forty-three patients with traumatic and non-traumatic patellar dislocations were included in the study. The patients with other ligamentous injuries or dysplastic trochlea were excluded. Ethical approval was obtained from Khoula Hospital's ethics committee. Using the Al Shifa medical record system, data were collected. The validated Arabic versions of Kujala and Lysholm scores were used to assess the outcome. The patients were contacted by telephone and given an online questionnaire for scores pre-op and after one year from surgical intervention. Data were collected using Excel sheets and were analyzed using SPSS. ***Results:*** A total of 43 patients who have been operated on and fulfilled the inclusion criteria were included in the study. There were 31 (72.1%) females and 12 (27.9%) males with an age range of 18-42 (mean = 28.77 years). Right-sided surgery was noted in 23 patients and 20 on the left. Isolated soft tissue procedures were done in 24 patients and combined procedures in 19 patients. The isolated procedure group's pre-surgical Kujala score was 48 and Lysholm was 58 compared to post-surgical intervention with Kujala score of 73.92 and Lysholm score of 80.92. On the other hand, combined procedure group functional scores showed mean pre-surgical intervention Kujala score of 68.47 and Lysholm of 58 compared to post-surgical intervention Kujala score of 66.37 and Lysholm score of 74.79. The isolated soft tissue group had a 5.3% dislocation in one-year follow-up while 8.3% had a dislocation in the combined group. There was a statistical difference between pre- and post-functional scores with $p < 0.05$. No statistically significant difference in the functional outcome was noted between gender, side of injury, and either isolated or combined procedure done. ***Conclusions:*** Surgical intervention in patellar instability patients has good functional outcomes and improved quality of life.

The Predominant Learning Style among Residents Joining Surgical Specialty at Oman Medical Specialty Board

Mohammed Salim Saif Al Ghammari[1*] and Sultan Al Kalbani[2]

[1]R[5], Orthopedic Surgery Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Orthopedics Department, Khoula Hospital, Muscat, Oman

*Corresponding author: mohammed.g18@resident.omsb.org

ABSTRACT

Objectives: To determine the learning style using validated, reliable, and translated instruments and to identify the association between demographic factors (age, gender, and marital status) and residents' learning styles. ***Methods***: This is a cross-sectional study. A validated, translated, and reliable revised two-factor study process questionnaire (R-SPQ-2F) was administrated to surgical specialty residents at Oman Medical Specialty Board in the academic year 2022-2023 from post-graduate year 1 to year 6. ***Results:*** Of 142 residents, 95 (33 men and 62 women) returned the questionnaire with a 66.9% response rate. Results showed the mean score for the deep learning style is higher than the surface learning style, indicating it was the predominant learning style. There was no significant association between gender and learning style, and the mean score was higher in deep learning style in males and females. ***Conclusions:*** The deep learning style was the most predominant learning style among surgical specialty residents at Oman Medical Specialty Board. There was no statistically significant association between gender and learning style. These outcomes can be used to develop personalized strategies for each learning style that residents will receive to improve future teaching and learning.

PEDIATRICS

Impact of Hyperchloremia on the Outcome of Children with Diabetic Ketoacidosis

Mazoon Al Saadi[1], Khoula Al Ruqaishi[1] * and Saif Awladthani[2]

[1]Pediatrics Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Pediatrics Department, Royal Hospital, Muscat, Oman

*Corresponding author: r21124@resident.omsb.org

ABSTRACT

Objectives: We aimed to investigate the effect of hyperchloremia on the time to recovery from DKA and the rate of bicarbonate rise and to assess the correlation between chloride level and time to DKA resolution.

Furthermore, to evaluate the predictors of hyperchloremia. ***Methods***: A retrospective study included children below 13 years of age who were admitted to the Royal Hospital with a diagnosis of DKA between 2010 and 2022. Patients with other acute or chronic acid-base disorders were excluded. All statistical analyses were performed using STATA 17. Spearman correlation coefficient was used to correlate chloride level and time of DKA resolution. Univariate analysis was done using the Student *t*-test and chi-square. Multivariate analysis was done using binary logistic regression to evaluate the predictors of hyperchloremia. A *p*-value of < 0.05 was considered statistically significant. ***Results:*** Of 162 patients included in the study, 20% had hyperchloremia on presentation, which increased to 81.5% throughout the treatment. The mean time to DKA resolution in the hyperchloremia group was 18.6 (1.1) hours compared to 9.8 (1.1) hours in the normochloremia group ($p = 0.0002$). The rate of rise in bicarbonate in the hyperchloremia was 0.78 (0.044) mmol/hr compared with 1.10 (0.166) mmol/hr in the normochloremia group ($p = 0.034$). The mean length of pediatric intensive care unit/high dependency (PICU/HD) stay was 30.4 (1.5) days in the hyperchloremia group compared to the normochloremia group of 19.3 (1.6) days ($p = 0.0007$). There was a significant moderate correlation between maximum chloride and other outcomes such as time to DKA resolution, the time to bicarbonate > 15 mmol/L, the length of PICU/HD stay, and the rate of bicarbonate rise to > 15 mmol/L. The predictors of hyperchloremia were lower weight (OD: 0.9, 95% CI: 0.83-0.98, $p = 0.017$) and the type of intravenous fluid was 0.9% NaCl vs. 0.45% NaCl (OD: 4.94, 95% CI: 1.41-17.4, $p = 0.013$). ***Conclusions:*** Hyperchloremia in children with DKA delays the recovery from metabolic acidosis, and it prolongs PICU/HD stay. There is a moderate correlation between chloride level and time to DKA resolution. Lower weight and using 0.9% NaCl were the predictors of hyperchloremia. Prospective studies are needed to test different fluids with different chloride loads.

Arterial Thrombosis in Children: The Royal Hospital's Experience

Amani Al Ghadani[1*], Anwar Al Ghadani[2], Asma Al Afifi[2] and Ibrahim Al Ghaithi[3]

[1]*Pediatrics Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Child Health Department, Royal Hospital, Muscat, Oman*

[3]*Pediatric Hematology and Oncology, Royal Hospital, Muscat, Oman*

[*]*Corresponding author: r20104@resident.omsb.org*

ABSTRACT

Objectives: The primary objective of this study was to describe the clinical and epidemiological profile of arterial thrombosis in pediatric patients. ***Methods***: A retrospective descriptive study was conducted on pediatric patients up to the age of 13 years treated at the Royal Hospital from January 2010 to December 2020. Patient records were obtained from Al-Shifa 3+ system. The start point was the time of diagnosis, and the endpoint was the last clinical encounter. Data were analyzed using IBM SPSS Statistics for Windows. Descriptive statistics were utilized to summarize the data. Continuous variables were represented by the median and interquartile range, while categorical variables were expressed as numbers and percentages. ***Results:*** This Study included 124 patients diagnosed with arterial thrombosis. The results of this study showed that 83.1% of patients were younger than one year of age. The most common site of arterial thrombosis was the femoral arteries, affecting 89 (71.8%) patients. Congenital heart disease emerged as the most prevalent medical condition associated with thrombosis, affecting 108 (87.1%) patients. The median duration of anticoagulants was 58 days (interquartile range = 30–93 days). The most common complication observed was persistent or chronic thrombosis, found in 14 (11.3%) patients. ***Conclusions:*** The most common factor associated with arterial thrombosis was arterial catheterization, which was performed for diagnostic or interventional purposes during infancy, particularly in patients with cardiac disease. The most common complication observed was persistent or chronic thrombosis; however, patients exhibited minimal clinical manifestations. This is the first study to describe arterial thrombosis in children in Oman. Further studies are needed to assess the risk factors associated with thrombosis and to provide objective measures for assessing treatment outcomes.

Prevalence of Stroke and Associated Comorbidities in Pediatric Patients with Sickle Cell Disease in Oman: A Retrospective Study at a Tertiary Care Center

Khadija Saleh[1*], Marwa Suliman[1], Yasser Wali[2], Amal Al Sabahi[3], Reem Al Sheikh[1] and Maria Al Buraumi[1]

[1]*Pediatrics Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Pediatrics, Sultan Qaboos University Hospital, Muscat, Oman*

[3]*Department of Hematology, Sultan Qaboos University Hospital, Muscat, Oman*

[*]*Corresponding author: r20102@resident.omsb.org*

ABSTRACT

Objectives: Stroke is considered one of the major complications in patients with sickle cell disease (SCD). Around 10% of the total children with SCD develop stroke. We sought to determine the prevalence of stroke

among children with sickle cell anemia (SCA) admitted at Royal Hospital and Sultan Qaboos University Hospital and to determine the associated risk factors that might increase the incidence of developing stroke. ***Methods***: A retrospective study was conducted on the prevalence of stroke among children with SCA admitted to Royal and Sultan Qaboos University Hospitals, Oman. We targeted the age group from 0 months to 18 years of age. We used a standard data collection sheet using the EpiData software to gather the required information. Descriptive analysis was used to summarize the demographic characteristics and clinical diagnosis. ***Results:*** A total number of 2924 patient records with SCD were included in this study. There were 40 (13.7%) patients with stroke. The male-to-female ratio was 1:0.74. The incidence of stroke was 1.37% with a mean age of 10.15 years. The majority of patients with stroke were between one and 10 years of age accounting for 52.2%. Most of our patients who had a stroke were not on regular hydroxyurea (n = 30; 75.0%). Thirty-three (82.5%) patients were not on regular screening with transcranial Doppler (TCD) ultrasound. Other comorbidities like anemia were found in 23 (57.5%) patients. Eight (20.0%) patients were found to have glucose-6-phosphate dehydrogenase deficiency. Most of the patients with stroke (n =32; 77.5%) were kept on monthly exchange transfusion to reduce the proportion of sickle hemoglobin to < 30%. ***Conclusions:*** The incidence of stroke in patients with SCD was 1.37%. Risk factors like anemia and limited access to hydroxyurea and TCD screening tools can increase the risk of developing stroke. Our recommendation is to introduce TCD as a screening tool for early detection and prevention of stroke in those patients. Our study results will improve the health care system provided to SCD patients by introducing TCD and early thinking of regular exchange transfusion. Furthermore, future studies can be carried out from our data.

PSYCHIATRY

Evaluating the Effectiveness of Methylphenidate and Atomoxetine in Adult Patients with Attention Deficit Hyperactivity Disorder in University Hospital in Oman

Omayma Talib Musallam Al Kiyumi[1*] and Hassan Mirza[2]

[1]*Psychiatry Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2] *Department of Behavioral Medicine, Sultan Qaboos University, Muscat, Oman*

**Corresponding author: r21145@resident.omsb.org*

ABSTRACT

Objectives: The study aimed to examine how effective attention deficit hyperactivity disorder (ADHD) medications are in treating adult patients with ADHD and to identify the contributing factors that lead to their improvement. ***Methods***: The study included all patients attending the clinic from January 2018 to December 2022. The sample consisted of adult patients diagnosed with ADHD who received treatment for at least six months. Patients with co-morbid intellectual disability were excluded from the study. A total of 179 adult ADHD patients met the inclusion criteria. Patients were assessed at follow-up using the clinical global impression-improvement scale. Categorical associations were compared using a chi-square test, and continuous information was compared using an independent *t*-test. The strength of association was further assessed using multivariate logistic regression analysis. ***Results:*** Of 179 adult ADHD patients, 82.0% showed improvement with the medication. No family history of ADHD remains an independent predictor for an improvement (OR: 2.39, $p = 0.049$, 95% CI 1.0 – 5.70). Better improvement with the treatment was also found in male patients. No co-morbid anxiety also showed improvement; however, it was not statistically significant. ***Conclusions:*** This study indicates that individuals with a family history of ADHD may have a slightly poorer response to medications than those without an ADHD family history.

Prevalence and Correlates of Workplace Violence Against Nurses in Tertiary Care Psychiatric Hospitals in Oman: A Cross-sectional Multi-center Study

Maryam Al-Kalbani[1], Tamadhir Al-Mahrouqi[1], Siham Al-Shemli[2], Sathiya Murthi[3], Nasr Al-Balushi[2] and Hamad Al-Sinawi[4]*

[1]Psychiatry Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Behavioral Medicine Department, Sultan Qaboos University Hospital, Muscat, Oman

[3]Research and Studies Section, Oman Medical Specialty Board, Muscat, Oman

[4]Old Age Psychiatry Department, Sultan Qaboos University Hospital, Muscat, Oman

**Corresponding author: maryam.s19@resident.omsb.org*

ABSTRACT

Objectives: This study aimed to assess workplace violence (WPV) prevalence against nurses in psychiatric hospitals in Oman and explored the associated factors. ***Methods***: A cross-sectional study was conducted at all tertiary mental healthcare hospitals in Oman (Al Masarra Hospital and Sultan Qaboos University Hospital) between October and December 2021. Participants completed a sociodemographic survey and the workplace violence in the health sector questionnaire. Categorical variables were compared using chi-square test ($p < 0.050$). ***Results:*** A total of 106 nurses participated in the study (response rate = 80%). Most were female 56 (52.8%), Omani 77 (72.6%), and aged 30-39 years. WPV prevalence was high (90.6%), with verbal violence (86.8%) and

physical violence (57.5%) being the most common types. Incidents were more frequent on weekdays 28 (26.4%) and during morning shifts 36 (34.0%), while 81.1% of nurses worked in shifts and had direct physical contact with patients (83.0%). The majority 98 (92.5%) were aware of standardized WPV reporting procedures, and 87 (88.8%) confirmed their presence in hospitals. WPV was more prevalent among nurses in inpatient wards ($p < 0.047$). ***Conclusions:*** WPV against nurses in Omani psychiatric hospitals is alarmingly high. Future research should investigate contributing factors among healthcare providers and emphasize violence prevention by providing staff nurses with effective training to handle violent incidents involving psychiatric patients.

Efficacy of a Six-week-long Therapist-guided Online Therapy versus Self-help Internet-based Therapy for COVID-19-induced Anxiety and Depression: Open-label, Pragmatic, Randomized Controlled Trial

Tamadhir Said Al-Mahrouqi[1]* and Mohammed Al Alawi[2]

[1]Psychiatry Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Behavioral Medicine Department, Sultan Qaboos University Hospital, Muscat, Oman

*Corresponding author: r21145@resident.omsb.org

ABSTRACT

Objectives: This study aimed to comparatively assess the efficacy of therapist-guided online therapy with that of self-help, internet-based therapy focusing on COVID-19-induced symptoms of anxiety and depression among individuals living in Oman during the COVID-19 pandemic. ***Methods***: This was a 6-week-long pragmatic randomized controlled trial involving 60 participants recruited from a study sample surveyed for symptoms of anxiety or depression among the Omani public amid the COVID-19 pandemic. Participants in the intervention group were allocated to receive one online session per week for six weeks from certified psychotherapists in Oman. Sessions were conducted in Arabic or English. The psychotherapists utilized cognitive behavioral therapy and acceptance and commitment therapy interventions. Participants in the control group received an automatic weekly newsletter via email containing self-help information and tips to cope with distress associated with COVID-19. The information mainly consisted of behavioral tips revolving around the principles of cognitive behavioral therapy and acceptance and commitment therapy. The primary outcome was measured by comparing the change in the mean scores of the Patient Health Questionnaire-9 (PHQ-9) and General Anxiety Disorder-7 (GAD-7) scale from the baseline to the end of the study (i.e. after six sessions) between the two groups. The secondary outcome was to compare the proportions of participants with depression and anxiety between the two groups. ***Results:*** Participants were divided into two groups, the intervention group (n = 22) and the control group (n = 24). Data from 46 participants were analyzed. There was no statistical difference in the baseline characteristics between both groups. Analysis of covariance indicated a significant reduction in the GAD-7 scores ($F_{1,43} = 7.307$; $p = 0.01$) between the two groups after adjusting for baseline scores. GAD-7 scores of participants in the intervention group were considerably more reduced than those in the control group ($\beta = -3.27$; $p = 0.01$). Moreover, a greater reduction in mean PHQ-9 scores was observed among the intervention group ($F_{1,43} = 8.298$; $p = 0.006$) than those in the control group ($\beta = -4.311$; $p = 0.006$). Although the levels of anxiety and depression were reduced in both study groups, the reduction was higher in the intervention group ($p = 0.049$) than in the control group ($p = 0.02$). ***Conclusions:*** This study provides preliminary evidence to support the efficacy of online therapy for improving the symptoms of anxiety and depression during the COVID-19 crisis in Oman. Therapist-guided online therapy was found to be superior to self-help, internet-based therapy; however, both therapies could be considered viable options.

RADIOLOGY

Accuracy of Multidetector CT in Distinguishing Complicated from Uncomplicated Appendicitis: A Single-center Study

Noor Muhammad Fazaldad[1]*, Sameer Raniga[2] and Alok K. Mittal[2]

[1]Radiology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Radiology Department, Sultan Qaboos University Hospital, Muscat, Oman

*corresponding author: r20128@resident.omsb.org

ABSTRACT

Objectives: We aimed to identify and enumerate multi-detector computed tomography (MDCT) imaging features that can help predict and distinguish patients with uncomplicated appendicitis from those with complicated appendicitis. ***Methods***: A total of 298 patients who had acute appendicitis and underwent surgery between January 2017 and June 2023 were included in this study. We divided the patients into two groups according to the results of the abdominal MDCT scan, surgery, and pathology: those with uncomplicated or complicated appendicitis. We performed a retrospective analysis to find CT imaging characteristics that could aid in differentiating between uncomplicated and complicated appendicitis. ***Results:*** Complicated appendicitis refers to gangrene

or perforation based on pathological or intra-operative findings. The overall MDCT sensitivity, specificity, and accuracy were 89.3%, 98.9%, and 95.3%, respectively, for the distinction between complicated and uncomplicated appendicitis. Patients with complicated appendicitis had larger appendices. Patients with uncomplicated appendicitis had an average appendiceal diameter of 11.2 mm, while those with complicated appendicitis had an average diameter of 14.4 mm ($p < 0.001$). The most specific CT findings for complicated appendicitis were extraluminal air (100%), extraluminal appendicolith (100%), fluid collection (100%), small bowel dilatation (99%), phlegmon (98%), and mucosal enhancement defect (97%). However, the sensitivities of these findings were not very high. The most sensitive CT findings for complicated appendicitis were moderate-to-severe periappendiceal fat stranding (84.7%; 95% CI: 76.6–90.8) and regional lymph node enlargement (91%; 95% CI: 84.1–95.6). The study found that complicated appendicitis could be predicted independently by mucosal enhancement defect and periappendiceal fat stranding (moderate to severe), with odds ratios of 2.57 (95% CI: 1.08–6.1) and 8.11 (95% CI: 2.4–27.4), respectively. Intraluminal appendicolith frequency was higher in complicated appendicitis cases (52.3% vs. 17.1%). ***Conclusions:*** MDCT scan can distinguish between complicated and uncomplicated appendicitis with a fair degree of accuracy. While certain MDCT findings are highly specific for the diagnosis of complicated appendicitis, the overall sensitivity of MDCT is low.

Determining the Unique Radiological Features of Lobular Breast Cancer vs. Ductal Breast Cancer: Correlation with Age, Breast Composition, and Tumor Size – Our Institutional Experience

Noha Said Ali Al-Hattali[1*], Suad Al Duwaiki[2] and Samya Al Salhi[2]

[1]*Radiology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Radiology Department, Royal Hospital, Muscat, Oman*

**Corresponding author: r20127@resident.omsb.org*

ABSTRACT

Objectives: We aimed to compare the mammographic and sonographic findings associated with invasive ductal carcinoma (IDC) vs. invasive lobular carcinoma (ILC) regarding breast composition, tumor size, and age groups. ***Methods:*** This was a retrospective study between 2015 and 2021. The preoperative imaging (mammographic and ultrasound findings) of histologically proven IDC and ILC were evaluated. The imaging findings were evaluated according to the BI-RIADS lexicon. ***Results:*** Among patients, the mean age of women with IDC and ILC was 47.7±12.4 years and 49.3±10.6 years, respectively. On mammography, architectural distortion (70.3%) was the most common presentation of ILC, and mass with calcifications (68%) was the most common in IDC. The mean lesion size with IDC and ILC was 3.7±2 cm and 3.8±2 cm, respectively. Further analysis of the data was done based on breast composition, which did not reveal significant findings. The associated findings, focal skin thickening, and nipple retraction were comparable in both groups, which was significantly associated with ILC. On ultrasound, the IDC was commonly seen as a speculated/micro-lobulated hypoechoic mass, while the ILC was commonly seen as an indistinct hypoechoic mass. A slightly higher percentage of the ILC was associated with posterior acoustic enhancement (73 %; $p < 0.05$) compared to IDC (36.3%). Many of them did not have any posterior features (48.8 %). Other parameters like age at presentation and tumor size were not significantly different between both groups. ***Conclusions:*** IDC and ILC in Omani women were more common at age < 50 years than at older ages. Architectural distortion was the most common presentation on mammography in ILC with no significant difference among age groups of < 50 or ≥ 50. Comparing the imaging features of the IDC and ILC, a few unique imaging features were found useful to better characterize lobular carcinomas. These include architectural distortion detected on mammography favors ILC. Mass with the indistinct margin showing posterior shadowing on sonography may indicate ILC. Parallel orientation of a lesion on ultrasound is more commonly associated with ILC. Presentation as mass, especially with micro-lobulated/angular margins on ultrasonography is less prevalent in ILC.

Radiological Assessment of Extracranial Vertebral Artery Variations: A Computed Tomography Angiography Study

Faiza Hamed Al Hajri[1*] and Eiman Al Ajmi[2]

[1]*Radiology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Departement of Radiology and Molecular Imaging, Sultan Qaboos University Hospital, Muscat, Oman*

**Corresponding author: r20126@resident.omsb.org*

ABSTRACT

Objectives: To determine the incidences of intraforaminal and extraforaminal variations of vertebral artery (VA) in the Omani population using computed tomography angiography. ***Methods:*** We retrospectively reviewed the computed tomography angiography of 579 consecutive Omani patients who visited Sultan Qaboos University Hospital. The presence of unusual entrance transverse foramen (UE-V2) and midline migration, persistent first intersegmental artery, and paracondylar process variations were analyzed. The origin of VA and vertebral dominance was also determined. The gender and side

differences in these variations' incidence were analyzed using the Chi-square test. ***Results:*** The incidence of UE-V2 was relatively high compared to other variations. Of 1158 VAs, 10.44% (n = 121) was observed, with C5 being the common entrance point. The incidence of UE-V2 at different vertebral levels was observed in a sequence of C5 (71%) > C4 (20.7%) > C7 (7.43%) > C2 (0.8%). The incidence of midline migration variation was 1.29%. The persistent first intersegmental artery and paracondylar process variations were found in 0.17% and 0.60% of cases, respectively. Left-dominant VA was identified in 44.7% (259/579) of subjects. The incidence of VA variations was not significantly associated with either gender or side. Anomalous VA origin from the arch aorta (3.5%) and right common carotid artery (0.08%) was identified. ***Conclusions:*** The incidence of UE-V2 in Omani subjects is comparatively higher than that reported in other Asian populations. A rare case of VA origin and its entrance at the C2 vertebral level was observed.

SURGERY

The Impact of the COVID-19 Pandemic on Surgical Outcomes of Elective Cancer Patients

Hilal Al Miskry[1*], Anas Al Wahaibi[2], Ibrahim Al Abri[2], Raya Al Shaibi[1], Mohammed Alabri[2], Said Almayahi[2], Abdulaziz Alabri[3], Maiysa Al Mujaini[2], Abdullah Al Jabri[2], Safa Al Hasani[2], Nasser Al Suleimani[2], Rawa Al Subhi[2], Nouf Al Kharusi[2], Shihab Al Mawali[2] and Yaseen Al Lawati[4]

[1]*General Surgery Residency Training Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman*

[3]*College of Medicine and Health Sciences, National University of Science and Technology, Sohar, Oman*

[4]*Thoracic Unit, Department of Surgery, Royal Hospital, Muscat, Oman*

[*]*Corresponding author: r20135@resident.omsb.org*

ABSTRACT

Objectives: This study aimed to evaluate the effect of the COVID-19 pandemic on elective cancer surgery outcomes. ***Methods***: A retrospective cross-sectional study was conducted on all index elective cancer surgeries carried out under the general surgery department at the Royal Hospital, Oman. We divided the patients into a pre-COVID-19 era (from 1 March 2018 to 28 February 2020) and a COVID-19 era (from 1 March 2020 to 28 February 2022). Our primary outcome was the rate of postoperative in-hospital and 30-day adverse events, and our secondary outcomes were the rate of postoperative 30-day emergency visits; rate of postoperative 30-day readmissions; and overall predictors of adverse events (30-day emergency visits and 30-day readmissions). Analysis was carried out in the IBM SPSS Statistics version 29. ***Results:*** Our cohort comprised 336 patients in the pre-COVID-19 era and 411 in the COVID-19 era. Between the two groups, significant differences were observed in the frequency of cardiac disease, the pattern of open vs. laparoscopic surgery, receiving neoadjuvant chemotherapy, and the need for intensive care unit admission. There was no statistical difference in the overall adverse events rate, readmission rates, and emergency visits. Predictors of overall adverse events were receiving neoadjuvant chemotherapy and the presence of comorbidities, having comorbidities predicted 30-day emergency visits, and an American Society of Anesthesiologists score of ≥ 3 predicted 30-day readmission. ***Conclusions:*** The COVID-19 pandemic did not affect the overall short-term surgical outcomes in index elective cancer surgery patients. Further studies should be conducted to evaluate the differences in the characteristics of the patients in the two groups and survival outcomes.

Should Macroscopically Normal Appendixes in Patients with Suspected Appendicitis be Removed? Systematic Review and Meta-Analysis

Raya Al Shaaibi[1*], Abdullah Al Alawi[2,3], Hilal Al Miskry[1] and Nawal Al Sharji[1,4]

[1]*General Surgery Residency Program, Oman Medical Specialty Board, Muscat, Oman*

[2]*Department of Medicine, Sultan Qaboos University Hospital, Muscat, Oman*

[3]*Internal Medicine Residency Program, Oman Medical Specialty Board, Muscat, Oman*

[4]*Department of Surgery, Pediatric Surgery, Royal Hospital, Muscat, Oman*

Corresponding author: alshaaibi.raya@gmail.com

ABSTRACT

Objectives: To determine the incidence of inflamed appendix in patients with a macroscopically normal appendix. ***Methods***: A systematic review conducted using PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), WHO International Clinical Trials Registry Platform, Cochrane Library, MEDLINE, Scopus, and Google Scholar electronic databases to search for relevant articles published until 1st March 2023. ***Results:*** Eighteen articles were eligible for analysis. A total of 1780 patients with normal-looking appendices during diagnostic laparoscopy or open surgery in patients with suspected appendicitis underwent appendectomy. The pooled incidence of acute appendicitis in a macroscopically normal appendix is 25% (95% CI: 0.17–0.33), and the overall incidence of having significant pathology is 28% (95% CI: 0.20–0.37). ***Conclusions:*** Macroscopic assessment of the appendix is not reliable, and appendectomy should be done in the absence of other explanations for patient presentation.

The Development and Validation of a Novel Sternotomy Simulation Model

Umaima Al Wahaibi[1]*, Mohammed Merza Madan[2] and Yaseen Al Lawati[3]

[1]General Surgery Residency Training Program, Oman Medical Specialty Board, Muscat, Oman

[2]Medical Student, National University of Science and Technology, Muscat, Oman

[3]Consultant Thoracic Surgeon, Royal Hospital, Muscat, Oman

*Corresponding author: r2044@resident.omsb.org

ABSTRACT

Objectives: A median sternotomy is one of the most commonly used incisions for cardiothoracic procedures. It is considered a basic skill that is acquired early in the surgical residency training career. Therefore, we sought to create a novel, feasible and validated sternotomy simulation model to be used for residents' training. ***Methods***: The Sternotomy simulation model was created by 3D printing the sternum and placing it into a plastic human model. Ten cardiothoracic surgery experts and ten novices were evaluated by performing the simulated median sternotomy. The results were analyzed using the Chi-square test. As an additional method of validation, the experts filled out a feedback form to assess the model. ***Results:*** The data analysis showed a significant difference between the performances of experts vs. novices in six out of seven domains ($p < 0.001$). Regarding the experts' feedback, the highest rate of anatomical reproduction was the anatomy, size, shape, and position of the sternum (average: 3.7/5). In the procedure steps, the highest rate was cutting through the sternum (average: 4.2/5). An average of 4.2/5 experts would use it to train their juniors. The total model cost twenty-two USD to create. The replacements of the sternum and skin layers cost approximately fourteen USD. ***Conclusions:*** We produced a novel, realistic, and cost-effective median sternotomy simulator. The reproduced model is validated and can be considered for general surgery and cardiovascular program training.