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First Clinical Case of VIM-1-Producing *Leclercia adecarboxylata*: A case report and literature review

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Leclercia adecarboxylata is a recently recognised emerging pathogen. We describe the first emergence of *L. adecarboxylata* generating VIM-1 in an immunocompetent 63-year-old female patient with an abrupt intracerebral haemorrhage. This case report aimed to narrate the course of infection, management, outcomes and the unique morphological and molecular characteristics of the VIM-1-producing *L. adecarboxylata*. The local laboratory used API E to identify the multi-drug resistant strain in the patient's sample. It was identified using Vitek 2, MALDI-TOF MS and 16S rRNA sequencing after being sent to the central public health laboratory. Vitek 2 was used to conduct antimicrobial susceptibility testing (AST), which employed the AST GN card 215 and the E test. The Clinical and Laboratory Standards Institute served as the foundation for the data interpretation. To validate the isolate's phenotype as a Carbapenem producing Enterobacterials (CPE), the modified Hodge test and the modified Carbapenem inactivation technique were used. Furthermore, multiplex PCR targeting blaOXA-48, blaNDM, blaKPC, blaIMP and blaVIM was used to characterise the CPE genes on a molecular level. Finally, the sanger cycle sequencing technique (BigDyeTM Terminator v3.1 - Cycle Sequencing) was used for VIM amplicon to confirm VIM-1. The strain was incorrectly classified as *Citrobacter koseri* by API E (99.9%) and *Pantoea* species by Vitek 2, however *L. adecarboxylata* was verified by MALDI-TOF MS (score 2) and 16S ribosomal RNA analysis. The existence of two populations of resistance genes, VIM-1 and OXA-48, was detected using conventional PCR.

Accuracy of Whole Blood for Bedside Pregnancy Test

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Objectives: The primary aim of the study was to assess the sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV) of whole blood in bedside pregnancy tests at three levels of serum human chorionic gonadotropin (hCG) (5, 10 and 25 mIU/mL). The secondary aim was to determine the reading time difference using whole blood versus laboratory serum hCG. **Methods:** This study was conducted between January 2018 and July 2018 at the emergency department of Sultan Qaboos University Hospital, Muscat, Oman, and included healthy females who required a pregnancy test. A triage nurse or phlebotomist drew blood from the patients. A few drops were applied to a Standard Diagnosis (SD) bioline bedside hCG test. The remaining blood was processed in the laboratory. The bedside whole blood test results were compared according to three quantitative serum hCG levels. **Results:** Of the 278 patients included, 130 patients had a serum hCG level of ≥ 5 mIU/mL, 125 had a serum hCG level ≥ 10 mIU/mL and 123 had a serum hCG level ≥ 25 mIU/mL. The sensitivity and NPV was 90% and 91.93%, respectively, at serum hCG levels ≥ 5 mIU/mL. At serum beta hCG level of 10 mIU/mL, the sensitivity and NPV was 93.6% and 95%, respectively. The specificity and PPV was 100% at three level of serum hCG. The savings time was 70 minutes with the use of whole blood ($P < 0.05$). **Conclusion:** The SD bioline hCG whole blood test can rapidly detect early pregnancy with high sensitivity, specificity, NPV and PPV with threshold of 10 mIU/mL.

Genetic Basis of Early-Onset Breast Cancer in Oman

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Objectives: More than 50% of all breast cancer (BC) patients diagnosed during the period of 1999–2015 in Oman were below the age of 45. By contrast, early-onset of breast cancer (EOBC) accounted for only 10.3% in USA, 9% in UK and 16% in Canada. The causes for this unprecedented high incidence of EOBC in Oman is not known. BRCA1/2 gene mutations are known to be associated with EOBC. However, the prevalence of BRCA1/2 mutations and whether they are responsible for EOBC in Omani population remains unknown. This study aimed to assess the prevalence of BRCA1/2 mutations and investigate whether they are main causative factors for EOBC in Omani population. **Methods:** Breast tissue samples and associated clinical data for patients treated at Royal Hospital, Muscat, Oman, between 2010–2020 were collected and analysed. Germ-line BRCA1/2 gene mutations were identified using OncoPrint BRCA Assay (ThermoFisher Scientific, USA). Correlation analysis was performed to correlate BRCA1/2 genes mutation status with patients age and family history. **Results:** A total of 1,336 patients were included in the study; 611 patients (45.7%) were aged < 45 years at diagnosis and 725 (54.3%) were ≥ 45 years old. Data for BRCA1/2 mutations were available for 262 patients. No significant correlation was found between BRCA1/2 genes mutation status and age ($P = 0.229$). However, BRCA1/2 genes mutation status correlated significantly with family history ($P = 0.017$). **Conclusion:** EOBC is not associated with germ-line BRCA1/2 gene mutations. The majority of EOBC (73.4%) have no family history of breast cancer, indicating that early-onset of the disease is unlikely to be caused by inherited germline mutations, but rather caused by acquired somatic mutations.

Utilization of Echocardiography in Detection of Intracardiac Masses in the Setting of Emergency Medicine: A case series

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Identification of intracardiac masses in an emergency setting can be tricky and requires expert skills. Once done with proper technique, it can dramatically change the line of diagnosis and management and direct the patient to the recommended specialised care. We report three cases. Case 1 is a young female patient, 8-weeks post-partum with an uneventful pregnancy, presenting with epigastric pain. Examinations showed significant fluid overload. Bedside echocardiography showed a left atrial mass and departmental echocardiography confirmed a left atrial myxoma. The patient was admitted, operated on and discharged in good condition. Myxoma was confirmed by histopathology. Case 2 is a 47-year-old male patient, on dialysis from a central line, who was planned for central line removal. He presented with ascites and palpitation. Bedside echocardiography showed vegetation at the tip of the catheter in the right atrium; these findings were confirmed with official echocardiography. Case 3 is a 67-year-old female patient with ischaemic heart disease and who had had COVID one month prior. She presented with syncope, tachypnoea and chest discomfort. Bedside echocardiography showed a large mobile clot migrating between the right ventricle and right atrium (clot-in-transit). CT scan confirmed a sub-massive pulmonary embolism. The patient was thrombolysed and admitted to the intensive care unit. In conclusion, using point of care ultrasound in the emergency department for patients with cardiac complaints can guide a physician's decision and excludes critical presentations. Unexpected intracardiac mass findings can change the diagnosis and alter patient outcome.

Trends and Characteristics of Emergency Department Visits During Ramadan: A retrospective study

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Objective: This study aimed to explore the trends and characteristics of Emergency Department visits during the month of Ramadan compared to the rest of the year. **Methods:** A retrospective analysis was performed using data collected from a tertiary hospital from January 2017 to 31st December 2019. The data included age, gender, the hourly number of visits, triage categorisation, presenting complaint to emergency department, provisional diagnosis and disposition plan from the Emergency Department. **Results:** A total of 109,967 visits to the Emergency Department were recorded. The daily average during Ramadan was lower compared to one month before and one month after ($P < 0.0001$). Patient attendance was lower between 17:00 and 20:00 and the highest was between 23:00 and 01:00, as compared to non-Ramadan months, which tended to be lowest at late night and highest during the daytime ($P < 0.008$). There were no statistical differences in the initial triage categories, most common medical conditions, rate of admission, categories of disposition, or mortality rates in the Emergency Department compared with non-Ramadan months. **Conclusion:** In this study, there is a significant variation in patient presentation during Ramadhan compared to other months. We suggest better preparedness and resource allocation will help improve patient care and optimise patient flow in the emergency department.

Maximising Result of Bed sore Prevention in a Mechanically Ventilated Patient

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Objective: There are various preventative measures for pressure ulcers, according to the Clinical Practice Guideline, including a comprehensive initial evaluation after admission to identify risk factors, education about PUs, repositioning and nutritional assistance. Although there hasn't been much studied, hydrocolloid dressings have been used to prevent bed sores in a few locales. This study aimed to determine whether there is a link between hydrocolloid dressing and the prevention of bedsores in ventilated patients. **Method:** This retrospective observational study included patients on mechanical ventilation. Participants were selected from the COVID-19 ward of Ibri Regional Hospital, Ibri, Oman. Pre- and post-test studies were conducted utilising conventional or conventional treatment with preventative hydrocolloid dressing. Staff recordings and evaluations in the AlShifa 3 plus program were used to acquire information. **Result:** A total of 74 patients were included. The pre-test comprised forty patients who received only conventional care, while the post-test included 34 patients who had both conventional therapy and hydrocolloid dressing. The number of bedsores decreased from 22 (55%) in the pre-test to 5 (15%) at the post-test. The most common bed sore stage in the post-test was stage one (4 out of 34) and was mostly associated with individuals with comorbidities. **Conclusion:** This study showed a significant difference between the post-test and PUS variable of employing CC+HD ($P < 0.05$), which reduces patient harm. It is critical to encourage experiments that compare various preventative interventions.

Association of Pre-Gestational Diabetes Mellitus (Type 1 & Type 2), Gestational Diabetes and Pre-Eclampsia with Preterm Birth Among Omani Women

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Objectives: This study aimed to determine if and to what extent rates of pre-gestational diabetes mellitus, gestational diabetes mellitus and pre-eclampsia differ between Omani women who deliver preterm infants and Omani women who deliver term infants. Shonkoff's bio-developmental framework provided the theoretical foundation for this study. **Methods:** This quantitative retrospective cross-sectional study used secondary data. Data were gathered from a simple random sample of 400 women who delivered preterm or term infants between 2015 and 2017 at Ibri Hospital, Ibri, Oman. The control group included 200 women with full-term infants and the other group consisted of 200 cases of women with pre-term infants. After data extraction and cleaning, descriptive analyses and Chi-square tests of independence were conducted. **Results:** A total of 400 randomly selected participants (mean age = 29.26 ± 5.75 years) were included in the study. Results indicated no differences in rates of pre-gestational diabetes mellitus, gestational diabetes, or

pre-eclampsia between mothers of preterm infants and term infants. However, results indicated differences involving selected clinical and demographic variables including education level, multiple pregnancies complications in current pregnancy, and maternal history of gestational diabetes, gestational hypertension and obesity. The findings reveal the significance of social determinants of health, including specific clinical and demographic factors, in predicting preterm birth for Omani women. **Conclusion:** According to the results, the researcher recommends addressing the current study's limitation of Omani specific results in broader studies covering a greater population and diverse population demographics and to be applied to nursing practice and education by training nurses and nursing students to identify factors in patient family histories which might suggest high risk pregnancies.

Characteristics and Trend of Breast Cancer in Al-Dahirah region: A retrospective study of cases diagnosed in Ibri Hospital from 2014–2022

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Objectives: This study aimed to determine the trend and prevalence of breast cancer in the Al-Dahirah Governorate and to assess the clinical characteristics of breast cancer in the region. **Methods:** This retrospective cross-sectional study included 137 patients diagnosed with breast cancer from January 2014 to December 2022 in Al-Dahirah region (Ibri Hospital, Ibri, Oman). Data were collected on age at presentation, family history, pregnancy status and breastfeeding status. Other clinical parameters were also studied, such as presenting symptom, disease characteristics and metastatic status on diagnosis. **Results:** The number of women diagnosed with breast cancer in Al-Dahirah region had increased steadily from 2014 to 2022. Most cases presented with lumps (75.9%) followed by screening (12.41%) and 28.47% of the cases were less than 40 years. Most cases (90.51%) had no family history of breast cancer. Despite the increase in the number of breast cancer cases in the region, most cases presented with less advanced disease. Ductal carcinoma was the most common type in histopathology diagnosis. Almost one-quarter (23.36%) of the total cases were lactating mothers and six cases had a previous history of in-vitro fertilisation. **Conclusion:** The study highlights an increase in the prevalence of breast cancer in Al-Dahirah region and emphasises the importance of educating women on the importance of home self-examination as a continuous screening tool at younger ages. This research also highlights the need for further research on the relation of breast cancer and breastfeeding and the relation of breast cancer with in-vitro fertilisation. Routine annual mammogram screening from 40 years onwards should be considered a must.

Patient-Centered Care, Diabetes Self-Management and Glycaemic Control among Omani Patients with Type-2 Diabetes

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Objectives: An estimated 350,000 Omanis will be living with type-2 diabetes mellitus (T2DM) by 2050. The role of the nurse in primary healthcare in promoting diabetes self-management (DSM) in a patient-centered care (PCC) model is unexplored. This study examined the relationships between PCC, DSM and selected outcomes (glycaemic control [A1C] and quality of life) for Omani patients with T2DM in diabetes clinics. **Methods:** Correlational cross-sectional surveys were administered to 237 Omani patients with type-2 diabetes. Hierarchical regression analyses were used to investigate the relationships between the study variables. **Results:** Nearly a decade (mean = 9.68 ± 6.11) since being diagnosed with T2DM, the sample's A1C was high (mean = 8.8 ± 2.4). PCC was positively associated with DSM but not glycaemic control or quality of life. However, in the regression model, PCC was positively associated with physical and mental aspects of health-related quality of life after controlling demographic and clinical characteristics. In the final model, DSM significantly predicted both glycaemic control and both physical and mental aspects of health-related quality of life after controlling for demographic and clinical characteristics and PCC. **Conclusions:** The findings support the idea of using individualised care to improve the self-management of chronic conditions. To achieve the best outcome, providers may need to effectively assess patients' challenges and motivations. Increasing DSM may improve the quality of life and reduce diabetes complications.

Patients' and Nurses' Perceptions of Diabetes Self-Management in Oman: A qualitative study

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Objectives: Type-2 diabetes mellitus (T2DM) is an emerging public health issue in the Oman. Primary health care (PHC) nurse's role in promoting diabetes self-management (DSM) within a patient-centered care (PCC) model in the Gulf region is unexplored. This study explored the perceptions of Omani patients with T2DM and their nurses on the nurses' role in promoting DSM within a PCC approach. **Methods:** A descriptive qualitative design was used to conduct individual interviews to gather patient and nurses' perceptions regarding the delivery of DSM and PCC in the clinical setting. Standard qualitative probes were used to elicit elaboration, clarification and sequencing in the gathered narratives. The interview was iterative and field notes and reflective notes were recorded after each interview to enhance data analysis. **Results:** The thematic analysis of the data from individual interviews with patients (n = 24) revealed two themes: patients experienced "missteps on an unclear path" and "nurses doing their best". Patients struggled to find treatment goals and had difficulty adopting DSM behaviors. Nurse narratives (n = 21) showed that very few nurses were aware of the PCC model and their role was perceived as task-oriented. A theme appeared of nurses "needing a new perspective" to transition their care delivery to align with the PCC philosophy. Nurses missed opportunities for assessment, engagement and collaborative problem-solving while meeting patients. **Conclusion:** Moving to a patient-centered primary care delivery system may require nurses to engage more effectively with patients, collaborate on individualised treatment plans and empower them to adopt self-management.

Investigation the Impact of Clinical Pharmacist-Led Discharge Counselling on the 30-day Readmission Rate of Patients with Heart Failure at Sultan Qaboos University Hospital: A single-centre non-randomised interventional cohort

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Objectives: There is currently no data on the impact of clinical pharmacist discharge counselling on heart failure (HF) patients in Oman. This study aimed to critically investigate the impact of clinical pharmacist-led discharge counselling on the 30-day readmission rate of HF patients. **Method:** This prospective cohort study was conducted at Sultan Qaboos University Hospital, Muscat, Oman. Patients admitted with HF were divided into intervention and control groups. The intervention group (patients who received intensive discharge counselling by a clinical pharmacist using a medication calendar tool) was reviewed prospectively and the control group was reviewed retrospectively. The rate of hospital readmission within 30 days post-discharge was compared between the intervention and the control group. **Results:** A total of 23 patients were recruited for the intervention group and 81 patients were included in the control group. Patients had a mean age of 68.05 ± 14.28 years 57.7% were male. The intervention group had a 13% readmission rate compared with 32% in the control group, however, this was not statistically significant ($P = 0.31$). **Conclusion:** This is the first study conducted in Oman to investigate the impact of clinical pharmacist-led discharge counselling. The study demonstrated that this intervention improved patient outcomes and reduced the 30-day readmission rate of HF patients, highlighting the importance of implementing discharge counselling in the healthcare system.

Wandering Spleen with Infarction in a Non-Symptomatic Patient

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One or more of the ligaments that keep the spleen in its natural location in the left upper quadrant are weak or absent in wandering spleen, a relatively uncommon abnormality. The symptoms that a patient experiences vary and might be completely asymptomatic, the sensation of an abdominal mass, or abrupt, mild to severe abdominal pain brought on by myocardial infarction. Clinical diagnosis might be difficult due to the wide range of non-specific symptoms; thus, imaging is crucial in the diagnosis. Splenic torsion, the main side effect of wandering spleen, is what causes acute abdomen. We present a case of an asymptomatic patient's torn wandering spleen with infarction that was unintentionally found after a history of minor trauma. Multiple stomach varices and portal hypertension were the results of the splenic vein thrombosis, which appeared to be persistent. On the basis of computed tomography and ultrasonography, a preoperative diagnosis was determined. Surgery later verified the findings. The patient received a successful laparoscopic splenectomy.

Females Had a Worse T-Score at Lumbar Region and Males Had a Worse T-Score at Femoral Region among Chronic Kidney Disease

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Objectives: This study aimed to assess bone turnover indicators and bone mineral density (BMD) as measured by dual energy X-ray absorptiometry (DEXA) in individuals with chronic kidney disease (CKD). **Methods:** This clinical observational study included all patients who underwent DEXA scans in 2018. According to the World Health Organization's definition of osteoporosis, all individuals with poor bone density or osteoporosis were included. **Results:** A total of 87.3% of the 505 individuals with abnormal BMD had early CKD stages I to II, 8.5% had stages III to V and 4.2% had no renal testing. A mean age of 57.0 years was recorded for 95 (18.8%) men and 55.8 years for 410 (81.2%) females. Patients over 65 years of age showed lower T-scores than patients under 65 years. Patients with late-stage CKD (stages III to V) showed lower T-scores and fewer BMD assessments than those with early-stage CKD (stage I - II). The lower T-score and parathyroid hormone (PTH) level showed a strong positive association. The T-score of the female was lower than the male's in the lumbar and femoral regions, respectively. The T-score did not significantly differ between men and women at the hip region. **Conclusion:** The distribution of aberrant BMD among various age, sex and CKD groups is noticeable. DEXA BMD measurements might be a helpful diagnostic tool to identify osteoporosis in CKD patients. However, DEXA might not be able to identify osteoporosis in the lumbar region of CKD patients. Femoral and total hip regions were more impacted. Patients with more severe CKD and older patients have lower T-scores. The amount of bone loss is proportionately correlated with PTH level. To effectively manage CKD patients, a multidisciplinary team approach must be used for early intervention and care.

Mucopolipidosis Type IV in Omani Families with a Novel MCOLN1 Mutation: Search for evidence of founder effect

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Objectives: This study aimed to carry out mutation analysis of the MCOLN1 gene in two families with mucopolipidosis type IV (MLIV) and to screen for the identified mutation in the Omani general population coming from the same region of the identified families in order to determine carrier frequency. **Methods:** Patients and families were ascertained clinically through the Genetic and Developmental Medicine Clinic at the Sultan Qaboos University Hospital, Muscat, Oman. Patients underwent clinical evaluation and laboratory investigations. They had corneal haziness; histologically intracytoplasmic inclusion bodies were found. Their MRI showed thinning of the corpus callosum. **Results:** A novel mutation was identified (c.237+5 G>A) in all affected individuals, even though they are unrelated. The novel mutation was not detected through screening 1,280 individuals from the same geographical regions of the two families using HRMPCR, therefore mutation age could not be calculated. **Conclusion:** A novel MLIV causative mutation was found in the Omani population. The absence of this variant among 1,280 healthy individuals from the same region support this variant being pathogenic.

Inability to detect the mutation among screened individuals from the same region does eliminate the possibility of a founder effect, given the rarity of this disorder, yet with the same mutation implication in both unrelated families.

The Skin Speaks Inflammatory Bowel Disease

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Cutaneous manifestations of inflammatory bowel disease (IBD) are relatively common, although they vary widely. The presentation of only a skin lesion, for many years without gastrointestinal manifestation, make the diagnosis of IBD really challenging and delays proper management chances. Studies of such presentations need to be addressed in different scientific areas. A case study from a GI clinic for prolonged skin manifestations of Crohn's disease (a type of IBD) was used, based on qualitative material, observation, testing and examinations, with review of literature. The study also used patient file documents from different health facilities over a period of six years prior to diagnosis, with the use of laboratory studies and imaging. Finally, a review of the biopsy samples taken during the period of illness was undertaken. The case study of a 25-year-old patient who manifested with a skin disorder over six years and underwent multiple laboratory and imaging studies with the use of endoscopy service, was later diagnosed with systemic IBD. The use of tissue biopsy during colonoscopy was the cornerstone for diagnosing the patient's disease, who was successfully treated using biological therapy which led to the resolution of her symptoms. This is a case of cutaneous Crohn's disease, which was missed due to a rare presentation and manifestation of the disease. A complete change in management plan was needed to treat such a case. The use of colonic biopsy eases the diagnosis and may initiate a new treatment plan.

Cardiopulmonary Resuscitation-Induced Consciousness: Case series report and ethical, legal and social aspects overview

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Death is a unique human experience that is flooded with very strong emotions and carries many ethical, legal and social aspects (ELSA) with it; cardiac arrest is a significant public health concern whether it's out- or in-hospital cardiac arrest, with approximately 500,000 cases reported annually in the USA. We report two cases of cardiopulmonary resuscitation-induced consciousness (CPRIC) that presented to the emergency department of a secondary hospital over a period of one year. A 57-year-old female presented with a one-hour history of typical chest pain. Manual CPR was immediately started as per the advanced cardiac life support protocol. Approximately five seconds after receiving the first direct current (DC) shock, the patient opened her eyes, started to move both arms in an attempt to push the rescuers away and she was biting the tube while endotracheal intubation was attempted. The 'consciousness manifestations' during CPR lasted for no longer than five seconds; CPR was continued for 20 mins but no return of spontaneous circulation was achieved. A 54-year-old male was escorted from a general practitioner clinic to the emergency department with 2-hour duration of central chest pain. His electrocardiogram (ECG) showing inferior ST-segment elevation myocardial infarction. After the ECG, the patient's blood pressure dropped and he became unconscious with no pulse. CPR started and DC shock delivered for ventricular fibrillation. The patient regained 'consciousness' and flexed his upper limbs and tried to push the face mask away. Chest compressions were stopped immediately and carotid pulse was checked. He was pulseless and the patient stopped moving shortly after stopping the chest compressions. CPRIC is still under reported. This phenomenon needs to be properly understood in terms of its ELSA aspects. Such events should be reported during CPR as this will aid in further investigation and literature enrichment.

Blood Supply Chain: An analysis of diverse clinical conditions in light of the importance of laboratory techniques and transfusion issues - A retrospective analysis of hospital-based incidents

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A blood transfusion is a medical treatment that has the potential to save a person's life. Errors and consequences in blood transfusion can occur at any stage, from blood collection through to the blood transfusion itself; laboratory practices are critical in preventing such negative results. This case study aimed to give an analysis of diverse clinical scenarios based on clinical history and blood inventory. Two instances had clinically significant antibodies (anti-D and anti-Fy), indicating a high risk of developing haemolytic disease of the fetus and newborn or delayed haemolytic transfusion reaction. Other situations were compounded by pre-existing irregularities. The findings demonstrated that laboratory techniques have a high benefit in decreasing and avoiding transfusion-related adverse outcomes. Evidence stresses the need of continual development, technical training and adherence to all hospital departments' directives in the complex pathway of blood delivery.

Improving Blood Transfusion Safety for Thalassaemia Patients with Frequent Adverse Reaction by Using Leukocyte Reduced Red Cell Transfusion: Case series

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Objectives: Patients on regular blood transfusion have frequent transfusion adverse reactions associated with fever and some other allergic symptoms such as anaphylaxis. This study aimed to investigate the use of leukoreduction of red blood cells (RBCs) which are considered one of the common blood component modifications that help to reduce the risk of a post-transfusion reaction among patients on regular transfusion. **Methods:** A group of thalassaemic patients who had multiple episodes of post-transfusion adverse reactions, were monitored in each transfusion event; including the period of transfusion with unfiltered RBCs and the period of transfusion

with several units of leukocyte-reduced RBCs in a secondary healthcare institution. The monitoring included current observation by the medical care team; during and after transfusion and home care observation. The study took place over 48 months and data were collected from blood bank monitoring modules of the Alshifa 3plus programme, post-transfusion incident reports and clinical information collected by clinicians and the medical care team. **Results:** The incidents of post-transfusion adverse reactions dropped to 16% with the use of leukocyte-reduced RBCs. Particularly, the incidence associated with patients who were expected to have febrile non-haemolytic transfusion reactions in which the reaction incidence decreased to 0%. Furthermore, allergic reactions significantly reduced after receiving leukocyte-reduced RBCs. **Conclusion:** These findings suggest that the use of leukocyte-reduced RBCs can provide safe blood transfusion for patients on regular transfusion associated with multiple episodes of post-transfusion adverse reactions.

What is the Risk of Lower Gastrointestinal Bleeding Associated with Selective Serotonin Reuptake Inhibitors?

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Paroxetine is a potent and selective inhibitor of 5-hydroxytryptamine (5-HT, serotonin) uptake and its antidepressant action. Serotonin is associated with increased bleeding tendency. Selective serotonin reuptake inhibitors (SSRIs) would deplete platelet serotonin, leading to a reduced ability to form clots and a subsequent increase in the risk of bleeding. We report the case of a 37-year-old female with no medical history other than psychiatric disorders, presenting with lower gastrointestinal bleeding after four months of paroxetine use. A retrospective analysis of patient records available via ALSHIFA plus-3 programme was undertaken. Informed consent was obtained from the closest next kin of the patient. The scarce literature available suggests that paroxetine in particular, increases the risk of lower gastrointestinal bleeding. Interestingly, this case was found in consistency with the reported literature, the termination of SSRI resulted in full recovery of the patient. Thus, strengthening the available evidence that SSRI may result in lower gastrointestinal bleeding. To conclude, lower gastrointestinal bleeding is rarely reported; careful monitoring is highly recommended during the initial period of use.

Autologous Platelet-Rich Plasma Therapy for Diabetic Foot Ulcer: Case Series

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Objectives: Over recent years, great progress has made in the techniques of wound healing, for example via autologous platelet-rich plasma (PRP). The growth factors are able to produce granulation tissue and to induce epithelialisation by the production of neo-vessels, attraction of fibroblasts and mesenchymal cells, secretion of collagen fibres and by proliferation of keratinocytes. This study aimed to evaluate the effect of concentrated PRP on diabetic foot ulcer (DFU) healing. **Methods:** This study included six patients with chronic diabetic foot ulcer; type 1 and type 2 diabetes patients who controlled their diabetes by either medication or insulin were included. Grade 1A wound without tendon, capsule, or bone involvement and also without association infection or ischaemia were targeted. PRP was prepared by isolation from the patient's peripheral blood into multiple citrated vacutainers. PRP was injected to the edge of the ulcer and covered with sterile dressing. All patients were monitored once in a week. The rate of healing of the ulcer was determined by measuring the ulcer's dimensions via metric tapes at initial visit and at each visit. **Results:** More than 80% (n = 5) of the ulcers were completely healed after approximately four weeks of PRP therapy. All treated patients developed granulation tissue and, ultimately, the wound at the ulcer site closed. No adverse effect or re-infection was reported after each PRP administration. **Conclusion:** PRP is an effective method which can be used to treat DFU; it can be considered as the most promising method to treat a DFU in terms of healing rate.

Multi-Drug Resistant Organism Prevalence: A five years' experience from a secondary healthcare institution covering all clinical samples

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Objectives: This study aimed to describe the prevalence and trends of multi-drug resistant organisms (MDROs) from clinical samples at Ibri hospital, Ibri, Oman, from 2017–2021. **Methods:** This retrospective cohort study gathered data extracting laboratory culture results for all clinical samples from hospital information system. All non-clinical samples (i.e. screening) were excluded. Only MDROs were included and used for calculation of prevalence per 1,000 admissions to the hospital. Ethical approval was obtained from the regional research ethical committee. **Results:** The overall MDROs per 1,000 admission was 25.7 in 2017 which steadily increased until it reached 31.6 in 2021. The gram-negative bacteria continued to be the majority of all MDRO cases over the five-year study period with approximately 80% with gram-positive constituting approximately 20%. Extended spectrum beta-lactamase (ESBL) *Escherichia coli* was the leading MDROs and was approximately twice as frequent as the next MDRO species. *E. coli* was followed by MDR *Acinetobacter* and ESBL *Klebsiella pneumoniae* in prevalence. Vancomycin-resistant enterococci were extremely rare until a spike was seen in 2021 due to an outbreak during the COVID-19 pandemic but this returned to its baseline after the height of the pandemic. **Conclusion:** Antimicrobial resistance is a growing problem in healthcare. We reported prevalence of MDROs at a secondary care hospital. There were much more MDROs than gram-positive. *E. coli* remains the leading MDRO at the current hospital.

Blood Transfusion Errors, Could be Eradicated? Improving Transfusion Safety: A case report

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An old practice was carried on that allows nurses to enter the laboratory to retrieve blood units, where blood issuing services was

an attached unit with blood bank crossmatching, and other essential testing procedures on the same working bench. Therefore, it is essential to establish a more safe and confusion-free transfusion process. This report used four tools: Spaghetti diagram, 5S Audit, 8 types of waste and a survey. The first three tools provided a holistic view of the current lab deficiencies so problems can be detected, traced and solved. The circulated survey was used to test the degree of satisfaction among laboratory and nursing staff. After the goals of the initiation were fulfilled, blood bank issuing services are now physically separated near the laboratory's reception without having to go inside the laboratory; this allows for a more sustainable plan. There is a rapid and confusion-free issuing process, biohazard related contact of external staff is reduced to a minimum and more space is saved allowing the laboratory to upgrade and expand services. This evidence emphasises the importance of continuous development, operational training, compliance to instructions of all healthcare workers in the complex pathway of blood delivery and the attempt to create a safe environment even with limited resources despite advanced technologies that are meant to streamline transfusion practices.

Anti-Inflammatory Effects of n-3 Polyunsaturated Fatty Acids in THP-1 Macrophages: *Promising in-vitro insights*

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Objectives: This study aimed to determine how eicosapentaenoic acid (EPA) and docosahexaenoic (DHA), two polyunsaturated fatty acids (PUFAs), affect the inflammatory responses in LPS-stimulated THP-1 macrophages. **Methods:** EPA and DHA were treated with cells for 24 and 48 hours, respectively. To ascertain the vitality of cells both before and after incubation, cell viability tests were utilised. The expression levels of inflammatory cytokines were examined using an enzyme-linked immunosorbent assay and dose amounts of 0.09 and 0.45 mM for both EPA and DHA. All data were given as SEM, submitted to the Anderson and Pearson tests for normality; a one-way analysis of variance test was used to assess the statistical significance of the difference. **Results:** In LPS-stimulated THP-1 cells treated with 0.09 mM DHA, there was a drop in the levels of IL-6; this reduction was higher at 0.45 mM DHA (P = 0.001). Additionally, DHA did not significantly alter the inflammatory cytokines TNF-alpha compared to cells alone (P = 0.001). When exposed to EPA, LPS-stimulated THP-1 cells only significantly decreased interleukin-6 and tumour necrosis factor-alpha at the higher dosage and did not exhibit a statistically significant change at 0.09 mM (P = 0.001). **Conclusion:** PUFAs, such as EPA and DHA, might inhibit the production of inflammatory cytokines. DHA is a more effective anti-inflammatory drug, suggesting that it may be a useful marker in the battle against chronic illnesses.

The Effectiveness of Intrauterine Blood Transfusion in Treating Haemolytic Disease of the Fetus and Newborn Caused by Red Blood Cell Alloimmunisation

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Objectives: Due to maternal red cell alloimmunisation, haemolytic disease of the fetus and newborn (HDFN) spread widely around the world, leading to an increase in death and morbidity rates. By giving the fetal blood that is compatible with it, intrauterine transfusion (IUT) is one of the treatments used to treat fetuses with HDFN and therefore enhances the likelihood of survival. This study used a systematic assessment of published studies to assess the efficiency of IUT in relation to the likelihood that afflicted fetuses would survive and the occurrence of hydrops. **Methods:** This systematic review included four powerful studies from PubMed that were further validated by a quality assessment tool. **Results:** With the availability and use of IUT, the prognosis of HDFN and neonatal outcomes improved dramatically. The survival percentage improved dramatically from the numerous trials considered in this research and varied between 81% and 100%. In competent hands, procedure-related problems are as low as 1.2% per surgery, with a 0% loss rate. Nonetheless, fetal loss prevention can be technically tackled in situations requiring early intravascular IUT, and methods for early referral identification and antibody detection must be built to avoid or decrease the severity of hydrops. **Conclusion:** Intrauterine blood transfusion is regarded as a safe and effective treatment for treating HDFN induced by red cell alloimmunisation, resulting in improved neonatal outcomes due to decreased incidence of procedure-related complications.

Use of Castor Beans as Laxatives: *Case series and visits to herbal stores*

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Castor beans, which are known as a traditional treatment for constipation, are easily available at herbal shops. These beans contain ricin in their pulp. Ricin is one of the most toxic substances known to human. It was hypothesised that the use of castor beans for treating constipation is broadly practiced under uncontrolled measures and by inadequately educated herbal sellers. We report two cases of ricin toxicity following castor bean ingestion at two centers in Oman. Additionally, five herbal stores were visited seeking constipation treatment. The two cases showed signs of intoxication within the first hour of ingestion. Three out of five herbal stores offered castor beans as laxatives without offering poisoning education. These findings support that castor beans are frequently used in the community as a treatment for constipation, with the failure to provide the necessary precautions by the provider.

Severe Anticholinergic Toxicity from *Datura stramonium*: *Case report*

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Datura stramonium (also known as jimsonweed) is a poisonous plant which grows all over the world. It has been used in alternative medicine, especially in Ayurveda, in the formulation of many drugs. The seeds and the flower are toxic in nature; it contains a variety of poisonous substances such as tropane, alkaloids, atropine, hyoscyamine and scopolamine. We report a 65-year-old patient who was brought to the emergency department with acute mental status changes after consumption of two entire fruits of jimsonweed in a

trial attempt for treatment of his high blood pressure. The patient presented with confusion, tachycardia and tachypnoea with high blood pressure and raised body temperature. The patient was clearly showing an acute presentation of anticholinergic toxidrome due to jimsonweed and was subsequently admitted and started on multiple doses of benzodiazepines and hydration therapy which led to recovery. This plant contains anticholinergic alkaloids which act on acetylcholine at the postganglionic parasympathetic muscarinic receptor in salivary glands, smooth muscle, heart, eye and central nervous system. The management of jimsonweed toxicity is mainly supportive. Consumption of local plants are not uncommon as alternative medicine. The recognition of toxicity from such plants is important to guide therapy.

Biofilm Formation and Antibiotic Resistance: An ongoing challenge?

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Objectives: In order to reduce the process and have an efficient therapy, biofilms appear to be a crucial virulence factor that strengthens bacterial colonisation in medical devices and live tissues. This study aimed to examine the relationship between antibiotic susceptibility and biofilm development. **Methods:** A total of 96-well-plate assays were used to evaluate biofilm formation in five different organisms. One-way analysis of variance and the Tukey post-test were used in statistical analysis to highlight significant differences between the tested bacterial strains. Antibiotic susceptibility testing was conducted using the European Committee on Antimicrobial Susceptibility Testing (EUCAST) disk diffusion test. **Results:** The study showed variation in biofilm formation by a large number of bacteria; it also looked at the similarities between Clinical and Laboratory Standards Institute (CLSI) and EUCAST during the experiment which demonstrated equivalent antimicrobial susceptibility testing (AST) breakpoints across EUCAST and CLSI which found in consistency with the literature. Due to the fact that EUCAST is publicly available, it makes it simple for laboratories in underdeveloped regions and with limited funding to use. **Conclusion:** Due to the heightened prevalence of antibiotic resistance, biofilms now present a serious problem for microbiologists and public health. Patients with indwelling devices are shown to be complicated by it. Therefore, a better understanding of biofilms and their role in infectious illnesses can enhance clinical decision-making.