Conference Proceedings

AL-BAYAN 2$^{\text{ND}}$ SCIENTIFIC CONFERENCE

24-25$^{\text{th}}$ April 2024

The official website of the conference

Book of Abstracts of Al-Bayan 2nd Scientific Conference 2024

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MESSAGE FROM THE CONFERENCE CHAIR

As a conference chair, it is my great pleasure to welcome you to the Al-Bayan 2ⁿᵈ Scientific Conference. Al-Bayan 2ⁿᵈ Scientific Conference comes under the patronage of His Excellency the Honorable Minister of Higher Education and Scientific Research and under the slogan (Scientific research towards achieving sustainable development), as this title is linked to the purpose and goal of the university to provide scientific research that addresses realistic problems in the health sector in its various axes.

There is no doubt that the progress and advancement of societies are through scientific research to address problems and produce the necessary solutions and that presenting the scientific and research results of professors from various Iraqi universities at this conference is an opportunity for communication between Iraqi universities on the one hand, as well as the research of this conference in improving research output

Al-Bayan University is honored to host this scientific conference with its five tracks, which are the medical, dental, pharmacy, nursing, and medical laboratories and pathological analyses.

On behalf of the conference committee and Al-Bayan University, we wish you a successful conference.

Prof. Dr. Haider Talib Mohammed Ali Al-Emara

Al-Bayan University President

PROGRAMME

	Al-Bayan 2ⁿᵈ scientific conference Date: 24-25ᵗʰ April 2024
	DAY 1
8:00-9:00 am	Registration
9:00 am	Opening Ceremony
9:10-9:50 am	Welcoming speech by University President Opening speech by Minister of Higher education and Scientific Research Opening speech by Minister of Health Opening speech by Head of Parliament Higher Education Committee Opening speech by Head of Parliament Heath Committee Opening speech by Head of Research & Development Department Opening speech by Head of Private Higher Education Department
9:50- 10:00 am	Best Research Award Providing a shield of excellence for His Excellency the Minister of Higher Education as a recognizing for his sponsorship of scientific research in Iraqi Universities
10:00-10:45 am	**1ˢᵗ Scientific Session** • Porf. Dr. Sabeeh Mashhadani (Head of the National Assessment Centre of Medical Competencies) • Prof. Dr. Thaer Al-Khafaji (Chairman of the Council of Oral and Maxillofacial surgery of the Iraqi Board for Medical Specializations) • Prof. Dr. Haider Baha Sahib (Dean of the College of Pharmacy / Al-Nahrain University
10:45- 10:55 am	Appreciation Awards for speakers and special guests

10:55-12:00 pm	**2nd Scientific Session (Main Hall)** Medical research Dentist research Pharmacy research Medical analysis research Nursing research
12:00-1:00 pm	Lunch break
1:00-3:00 pm	**3rd Scientific Session (Parallel Session)** Medical research/ Center of Continuous education / Building no.2 Dentist research/ College of Dentistry continuous education hall/ Building no. 2 Pharmacy research/ College of Pharmacy continuous education hall/ Building no. 2 Medical analysis research / College of medical analysis techniques continuous education hall/ Building no. 2 Nursing research/ College of Nursing continuous education hall/ Building no. 1

	Al-Bayan 2nd scientific conference ***Date: 24-25th April 2024***
	DAY 2
9:00-11:00 am	**4th Scientific Session (Parallel Session)** Medical research/ Center of Continuous education / Building no.2 Dentist research/ College of Dentistry continuous education hall/ Building no. 2 Pharmacy research/ College of Pharmacy continuous education hall/ Building no. 2 Medical analysis research / College of medical analysis techniques continuous education hall/ Building no. 2 Nursing research/ College of Nursing continuous education hall/ Building no. 1
11:00-11:30 am	Certificates giving Ceremony
11:30 am	Closing Remarks

MEDICAL

1. Platelet-derived growth factor Levels in Plasma Cell Myeloma Patients. Case-Control Research among Iraqis

Ghazi Mohamad Ramadan

2. Risk Factors of Chronic Arthritis in Patients Attending Baghdad Teaching Hospital

Aws Azmi Shakir

3. Effect of Braille method on psychological health of blind people

Dhelal Ahmad Theyab Aljumialy

4. Risks related to Urinary Tract Infection among pregnant women attending Al- Sawira hospital in waist city

Muna Abdul Kadhum Zeidan

5. Study the effect of treatment and age for high blood pressure patients

Maysam Sachit Khudair

6. Emergency Thoracotomy of Chest Trauma: A cohort of 30 case-series

Hayder abdul amir Makki

DENTISTRY

1. **Effect of Dental Implant Neck Profile Switching on Crestal Bone Healing**

Mudher MB. Alsunbuli

2. **Prevalence and morphometric analysis of the accessory mental foramina in Arabic and Kurd Iraqi populations using cone beam computed tomography**

Omar Basheer Taha

3. **Relationship between Glycosyltransferase Enzyme and Biofilm Formation by Streptococcus mutans isolated from Dental childhood caries**

Mohammed A Mahdi

4. **The efficacy of Salvia officinalis mouthwash extract on gingivitis and its acceptance by pediatric patients (Anin vivo comparative study)**

Ahmed Ali Jassim

5. **Advantages of using chrome-cobalt and titanium alloys in prosthetic oral stents for cancer patients receiving head and neck radiation therapy**

Samah M. Hassan Al-Safi

6. **The effect of Interleukin-6 in immune inactivation in oral cancer**

Suzan Mohammed Abdul Raheem

7. **Advancements in Nanotechnology-Based Drug Delivery Systems for Oral Healthcare: From Traditional Practices to Personalized Medicine**

Suzan Mohammed Abdul Raheem

8. **Assessment the morphology of the mandibular canal below the mandibular second molar in Arabic Iraqi population using cone beam computed tomography**

Omar Basheer Taha

PHARMACY

1. Exploring Inhaler Technique Misuse and Socio-Demographic Influences on Asthma Severity

Atheer S. Alsabah

2. Antiamobic and Phytochemical Studies of Two Medicinal Plants: Traditional Recipes Used Against Amoebiasis

Ruaa Aziz Jassim

3. Multifaceted Assessment of Metformin's Impact on Cervical Cancer Cell Lines: Cytotoxicity, Reactive Oxygen Species Modulation, and Gene Expression

Abeer Mansour Abdel Rasool

4. Current Nanotechnological strategies for delivery of Anti-Retroviral Drugs: Overview and Future Prospects

Salam Shanta Taher

5. Utilization of cocrystallization technology to enhance the solubility and the dissolution profiles of famotidine

Lina Salim Hussein

6. Bilosome as a Potential Carrier for Improving Poor Oral Drug Bioavailability

Ahmed Hamed Salman

7. Delivery of Nose to Brain in the Management of Cerebral Vasospasm in Aneurysmal Subarachnoid Hemorrhage

Hussein K Alkufi

8. Effect of Aloe Vera Extract Fermented with Bifidobacterium lactis bacteria on lipid Profile of Rabbits Induced Diarrhea Used Candida spp

Farah Ali Hameed

9. Nissl Stain Expression in the Neonatal Mice Occipital Cortex after Prenatal Ketamine Exposure

Mohanad Suhail Najm

10. Response Surface Optimization, In-vitro Investigation of Nasal Solusomes Nanovesicles for Bioavailability Enhancement and Brain Targetting of Sumatriptan

Ahmed Hamed Salman

11. Dehydroepiandrosterone Supplementation Improves Diminished Ovarian Reserve Clinical and in Silico Studies

Bilal aldahham

12. Nano Vesicular as Topical Drug Delivery System: Types, Structural Components, Preparation Techniques and Characterizations

Milad Jawad Hasan

13. Low blood serum anti- Müllerian hormone (AMH) , Ovarian stimulation protocol ,oocyte number, antrafollicle cont, age , ICSI outcome ,pregnancy rate in Iraqi women

Rana Abdul Rasool Ridha

14. Assessment of Medical Students' Knowledge and Consumption of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) at Al-Bayan University

Khulood Saadoon Salim

15. Asthma knowledge assessment of primary health care physicians in Iraq

Al-Hussein Safaa

NURSING

1. Suggested Index of Evaluating "Self-Esteem" level of obese students among a sample at Middle Technical Universities in Baghdad City.

Abdullah E. Mecheser

2. Psychological problems among Women with Hysterectomy at Baghdad City

Bayda'a Abdul Kareem Ismail

3. Mothers' Knowledge Regarding Massage Therapy for Children with Lower Respiratory Tract Infections at Pediatrics Hospitals in Baghdad City

Ali Obaed Shneshil Al-Sudani

4. Analyzing Spirometry Profile of Pulmonary Function Pattern Among Gestating Women with Bronchial Asthma: A Case-Control Study

Hayder Abdul-Amir Makki

5. Association of Pregnancy induced hypertension and health related quality of life

Ali Fadhil Obaid

6. The Relationship Between Habit of Television Viewing among School Age Children with their behaviors : A cross- sectional study

Mohammed Talib Abed

7. Assessment of attitudes of undergraduate students toward family violence in the University of Baghdad

Aysin Kamal Mohammed Noori

MEDICAL ANALYSIS

1. **Examine How Medications Used to Treat COVID Patients Affect The Functioning of The Liver in People in Iraq.**

Mohammed Hashim Mohammed

2. **Nigella Oriental Bulbs as a Model for Examining the Impact of Copper Nanoparticles and Cabergoline on Female Rats with Hyperprolactinemia: Comparative Study**

Sulaiman mahmood hasan

3. **Role of Several Cytokines and Vitamin D Deficiency in The Progression of Rheumatoid Arthritis in samples of Iraqi Patients**

Rana Ibrahim Mahmood

4. **Bacterial Contamination of Patient's Accompanies Phones**

Zuhair Abdalsatar Ahmed Alrawi

5. **Advantage Study of Ferritin to D-Dimer Ratio to Differentiate Asymptomatic from Coronavirus disease-2019 Patients**

Muhammad Hammad Jasim Alajeely

6. **Antibiotic Susceptibility patterns of Staphylococcus aureus isolated from various clinical cases in Al Ramadi Teaching Hospital**

Abdulrahman M. Geeran Al Fahdawi

7. **Detection of the histopathological changes in lung tissues of white mice caused by Cryptococcus neoformans, and the therapeutic effect of endophytic fungus extract.**

Sahary M. Mahmoud

8. **Interleukin one beta (IL-1B) gene polymorphismsin Iraqi patients with susceptibility to develop hepatitis C infections**

   Ghasaq Abdulla Kadhum

9. **Antibacterial activity of Klebsiella pneumoniae isolated from pneumonia patients**

   Ali Saad Kadhim

ABSTRACTS

MEDICAL

RISK FACTORS OF CHRONIC ARTHRITIS IN PATIENTS ATTENDING BAGHDAD TEACHING HOSPITAL

Suhair M. Hassoon , Aws A. Shakir , Suha A. Kadhum

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"Arthritis" is a disorder that affects the body's joints, the word was derived from mixing Latin and Greek origins. The current study aims to identify the common types of arthritis and its risk factors in patients attending the outpatient clinic in Baghdad Hospital of Medical City. The study was cross-sectional and the data was collected by direct interview and through a special questionnaire, the sample was randomly chosen and analyzed through a descriptive statistical approach by using the known test chi-square. A recent study showed that the most common type of arthritis was rheumatoid arthritis 86(57.4%). In addition, it noted that mostly 84(56%) who were in the sampled study were aged (36-65) years most of them were females 122(81.3%), study findings showed that a higher percentage of BMI was among (overweight 25<) was 55(36.7%) and (obesity=>30) was 48(32%). The study concluded that so many factors may be associated with the incidence of chronic arthritis and there is variation in the effect of those factors, but the current study found that these factors may contribute to an increase in the incidence: female gender, Age group, Negative food consuming, obesity, housewife positions. Rheumatic arthritis was the most common form of disease frequency. The majority of the study sample were housewives. Most of the patients were females. More than half of the sample was young age group. Osteoarthritis patients were suffering from obesity. The study recommended establishing more healthy programs for early diagnosis, effective treatment and follow-up for patients, and health education programs about doing some exercises, daily walking, and eating healthy.

Keywords: Body Mass, Arthritis, Rheumatoid, Ambulatory Care, Health Education, Early Diagnosis.

EFFECT OF BRAILLE METHOD ON THE PSYCHOLOGICAL HEALTH OF BLIND PEOPLE

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2 Community Medicine, Training and Human Department Center/ Nineveh Health Directorate/ Iraq.
3 Department of Community Medicine, University of Mosul College of Medicine

Aim of the study: the association of the Braille learning method on the psychology of the blind child. Material and Method: Design: Case-control Setting and Date: Um Alrabeaen institution for blind and blind people during Jun.- Jul. /2022 Sampling methods and sampling size: Application of depression scale during a semi-structured interview with parents of the blind child using a modified Hamilton scale consisting of 8 items (sadness, laziness, suicide, psychological anxiety, other features of anxiety, Insomnia, confusion, and general body symptoms) using three Likert scale. Total sample size 24, with eight children as cases and 16 as controls Inclusion criteria: Blind children aged 8-13 years who had braille courses. Exclusion criteria: Mental retarded child. Result: This study showed that 16 (66.7%) of blind child complained of depression, feelings of helplessness, inability, listlessness, loss of interest and slow thinking, trouble sleeping, interrupted sleep, and physical anxiety, although more prevalent among control but statistically not significant. Depression is seen among males than females, (P-value = 0.003). Blind children who have trouble sleeping and interrupted sleep were commonly seen among control 14 (87.5%) with no difference between males and female then depression and feelings of helplessness, inability, listlessness, loss of interest and slow thinking it was 12 (75.0%). The last item reported was a child waking up earlier than usual and being unable to sleep again 10 (6.25%) with no differences between male and female.
Conclusion: Braille courses for the blind child had a positive effect on the psychological aspect of them

Keywords: Braille, Method, Psychological, Blind

EXAMINE THE INFLUENCE OF TREATMENT AND AGE ON PATIENTS AFFECTED BY HIGH BLOOD PRESSURE

Maysam Sajit Khudhair , Haidar Adnan Ameer , Maha hasan sultan

Department of Accounting, College of Business Administration, Al-Bayan University, Baghdad, Iraq

Medical statistics confirm that an increase in the likelihood of high blood pressure in individuals leads to a range of complications such as heart failure, stroke, or kidney failure, while a decrease can result in cell damage, particularly to the brain, due to inadequate oxygen and nutrient supply to tissues. Given this context, the research problem revolves around examining the impact of treatment and age on patients with varying blood pressure levels. The research aims to investigate how blood pressure treatment and patient age influence the response variables related to high blood pressure in a sample of 48 patients. This is achieved through binary logistic regression analysis. Comparative tests indicate the quality of the model according to various measures. Analysis of the variance of the model variables for patients with high blood pressure revealed that the effect of the explanatory variables, namely treatment and age, was statistically significant. The p-value being less than 0.05, along with the Chi-square test results, suggest that the estimated model parameters are significant, highlighting the influence of treatment and age on the patients' condition.

Keywords: high blood pressure, logistic regression, binary logistic, maximum likelihood

PLATELET-DERIVED GROWTH FACTOR LEVELS IN PLASMA CELL MYELOMA PATIENTS. CASE-CONTROL RESEARCH AMONG IRAQIS

Ghazi Mohamad Ramadan [1*], Hafidh I. Al_Sadi [2], Hayder Abdul-Amir Makki Al-Hindy[3], Mazin Jaafar Mousa [3], Amir S. Al-Mumin[4], Shahlaa Kh. Chabuk[4]

Department of Radiology, College of Health and Medical Technologies, Al-Zahraa University for Women.
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Multiple myeloma (MM) or "plasma cell myeloma", the second most frequent neoplasm after non-Hodgkin lymphomas, is a cancerous proliferation of plasma cells within the bone marrow. Platelets-derived growth factor (PDGF), a mitogenic cytokine extracted from platelets, is one of the cytokines associated with tumor pathogenesis or progression. The precise role of PDGF in the progression and or metastasis of MM is still unclear. This research aimed to compare the values of PDGF in cases with MM to control people. In the current case-control study, fifty-five cases of MM aged 58.8±0.9 and 33 (60%) were males, identified by a professional hematologist. Patients undergoing treatment were separated into two groups: 26 with stage II and 16 with stage III, while the recently diagnosed cases of MM patients were divided into two groups as well: 6 with stage II and 7 with stage III. Furthermore, 25 healthy adults aged 62.1±1.1 and 22 (62.9) were males assisted as controls. SPSS software was used to analyze the statistical data. The ROC-curve analyses were used to distinguish patients from control people and phases II and III. The mean PDGF concentrations in the circulatory system were 204.6±2.6, which was lower than that of the control group (246.8±6.1). Gender found no substantial differences in the distribution of the variables. Except for the platelet counts, no statistically significant variations were found between the MM and the healthy control in any research criteria. The ROC curve analysis demonstrated that PDGF had a poor ability to discriminate advanced stages from the earlier stages of MM patients (0.586), 95% CI (0.432 – 0.740), P-value >0.05, moderate sensitivity (0.617), and specificity (0.670). Also, PDGF had a reduced accuracy measure to detect MM (0.424), 95% CI, P-value >0.05, low sensitivity (0.40), and specificity (0.74). The authors observed high non-significant levels of PDGF in MM cases compared to control subjects. Also, there was the poor capability of PDGF to discriminate MM cases from healthy or advanced from the early stages of the tumor. Nevertheless, further studies that included larger population samples and other associated are desirable for explaining the significance of PDGF as biomarkers in MM.

Keywords: PDGF, Multiple myeloma, bone marrow neoplasm, plasma cells.

EMERGENCY THORACOTOMY OF CHEST TRAUMA: A COHORT OF 30 CASE-SERIES

Abbas Jaafar Khaleel Al-Anbari[1*], Hayder Abdul-Amir Makki Al-Hindy[2]

Cardiothoracic surgeon, Department of Surgery, College of Medicine, Al-Nahrain University, Baghdad, Iraq.

Medical Physiology, Department of Pharmacology and Toxicology, University of Babylon, Babylon, Iraq.

One of the leading causes of death in all age groups and accounting for 25–50% of all traumatic injuries is chest trauma. A small but considerable portion of primary resuscitation, even if the majority can be handled conservatively. For the withdrawal of pericardial tamponade, control of large air leaks, open cardiac massage, direct management of pulmonary hemorrhage, and cross-clamping of the thoracic aorta, surgical intervention has been recommended. Thoracotomy can be used to define emergency thoracotomies. The study aimed to look at the indications for emergency thoracotomy and the outcomes regarding mortality and prognosis in chest trauma patients in the operating room. A cross-sectional study was conducted on 30 patients who were admitted to Al-Immamian Al-Kadhimain Teaching Hospital between March 2022 and March 2023. The mean age of the sample population was 31.1 years. Males made up 21 (or 70%) of the sample, while females made up 9 (or 30%). There were 22 penetrating chest injuries (73.3%), compared to 8 blunt chest injuries (26.7%). 26 (86.7%) were alive, while 4 (13.3%) were dead. The requirement for an emergency thoracotomy to save the life of a trauma patient must be made better known. Patients' delays in getting transported to the hospital play a crucial role in preserving the lives of trauma victims. We must provide the emergency room department with all the necessary equipment to perform an urgent thoracotomy there.

Keywords: Emergency, thoracotomy, chest trauma.

RISK FACTORS RELATED TO URINARY TRACT INFECTION AMONG PREGNANT WOMEN ATTENDING AL-SAWIRA HOSPITAL

Muna Abdul Kadhum Zeidan [1], Suhair M. Hassoon [2] Shatha Ahmed M.A.[1]

Middle Technical University / College of Health and Medical Techniques / Baghdad,
Middle Technical University / Medical Technical Institute/Al-Mansur.

To identify risk factors related to UTI among pregnant women And find the relationship between UTI and demographic and reproductive variables. A Case-Control study was conducted from (1st November 2022 to 5th May 2023). A purposive sample of 200 pregnant women are selected from Al-Suwayrah Hospital in Waist Governorate. Data was collected through interviews of women using a questionnaire format designed and contained (3) part demographic variables, Reproductive variables, and variables related to UTI. The present study revealed that most age groups ranged less than 25 years, some factors were significant such as age, short birth space, history of UTI, and high parity and others were not significant like source of water and history of abortion. The study shows that significant associations with urinary tract infection are age, short birth space, previous attack of UTI, drying pain after urination, delayed and decreased frequency of urination per day increased sexual intercourse frequently and no urination after coitus and husband did not wash genitals before coitus and factors which not have significant associated with UTI is the source of water, educational level and history of abortion.

Keywords: Urinary Tract Infection, Pregnant Women, Risk Factors

DENTISTRY

EFFECT OF DENTAL IMPLANT NECK PROFILE SWITCHING ON CRESTAL BONE HEALING

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In dental implants and prostheses, the majority rely upon the association to the soft tissues which may be vulnerable to future requirements. Two main requirements for osseointegration First, the bone must be healthy, and second, the implant must be stable and must be able to bear the functional load. Using both the computer model and Finite Element Analysis technique to assess the bone room volume in narrow neck hybrid design implant in comparison with butt platform and bevel design at 1 mm inter implant distance the result was about 56.7 mm^3 in the butt joint platform design implant and between two bevel platform (+2.74% more) while in between two narrow neck hybrid designs reaches (+38.32%). The Implant platform switching technique is used to decrease the stress on crestal bone and better load distribution, it can be one two levels one is on the fixture-abutment interface, and the second is inside the bone at the fixture itself at the body-neck area. The narrow neck hybrid design seems to be superior in lowering the stress on crestal bone with more room for bone healing potential with less inverse effect for soft tissue healing.

Keywords: dental implant, platform switching, narrow neck hybrid design, crestal bone.

THE EFFECT OF INTERLEUKIN-6 IN IMMUNE INACTIVATION IN ORAL CANCER

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College of Dentistry, University of Al Esraa
Wasit University, College of Education for Pure Sciences.

It is unclear exactly what mechanisms a variety of chemopreventive experts employ to suppress the growth of tumors in the host. Through this study, we demonstrate that sulindac may not only stop oral tumor growth and function, but it may also prevent tumour-induced inactivation of immune cells, resulting in increased resistance to tumor growth. When sulindac, rather than adriamycin, was used to treat oral tumors, it had the opposite effect on NFkB and JNK function and articulation, leading to a significant reduction in the release of VEGF and IL-6 by the tumor cells. Similarly, upon viewing the tumor cells treated with sulindac, the increased acceptance of IL-6 and VEGF discharge in the co-societies of the susceptible effectors with the oral tumors was significantly reduced. Following co-cultivation with invulnerable effectors that failed to lyse the tumour cells, suslindac therapy prevented the synergistic uptake of VEGF emission by the tumor cells. Additionally, when combined with NK cells activated by IL-2, which had the capacity to lyse the tumor cells, sulindac exhibited the ability to drastically reduce the levels of VEGF emission by the tumor cells. Finally, when co-refined in the presence of tumor cells treated with sulindac, safe effectors showed an increased capacity. Sulindac possessed the ability to partially reverse the safe capacity hindrance triggered by tumor cells treated with TNFa. Consequently, the application of sulindac as a chemopreventive specialist and supplemental treatment to chemotherapy ought to be beneficial in mitigating tumor development and improving resistance to oral malignant growths.

Keywords: Interleukin-6, Oral Cancer, immune

THE EFFICACY OF SALVIA OFFICINALIS MOUTHWASH EXTRACT ON GINGIVITIS AND ITS ACCEPTANCE BY PEDIATRIC PATIENTS (AN IN VIVO COMPARATIVE STUDY)

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Children are more prone to develop gingivitis as a result of poor brushing and flossing proficiency, a lack of dedication to maintaining excellent oral hygiene, morphological variance in deciduous teeth, and a diet that encourages the growth of pathogenic oral bacteria. The purpose of this study is to compare the therapeutic effect of a *Salvia officinalis* (Common Sage) extract mouth rinse related to that of Chlorhexidine mouth rinse, as well as the pediatric patient's tolerance to their taste. in this study, 48 patients aged between (8-10) years were divided into 3 groups each with 16 patients one treated using Sage mouthwash the second treated with Chlorhexidine mouthwash (0.12%) (Positive control) third group treated with distilled water (negative control). one-way ANOVA with Tukey's Honest Significant Difference test was used for data assessment. significant differences were found among tested groups (P<0.05) regarding gingival index and acceptance of the mouthwashes being evaluated. Chlorhexidine has superior efficacy compared to Sage in treating gingivitis, however, Sage should be better accepted by patients. Herbal mouthwashes made from *Salvia officinalis* have a lot of potential for treating and preventing periodontal disease in young children, and they have fewer side effects than conventional mouthwashes.

Keywords: Herbal, Mouth wash, Chlorhexidine, Salvia officinalis, Gingivitis, Common Sage

RELATIONSHIP BETWEEN GLYCOSYLTRANSFERASE ENZYME AND BIOFILM FORMATION BY *STREPTOCOCCUS MUTANS* ISOLATED FROM DENTAL CHILDHOOD CARIES

Muntadher M. Alwan Almijbilee[1], Mohammed a mahdi[2], Sawsan Hassan Authman[3]

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Department of Biology, College of Science, Mustansiriyah University, Baghdad, Iraq,

Dental caries, known as tooth decay, is mainly caused by Streptococcus mutans. The S. mutans produce acids leading to cavity formation through demineralization of the enamel layer. The biofilm formed by S. mutans, composed of glucan polysaccharides, extracellular DNA, and proteins, plays an essential role in caries expansion. In this study, the correlation between glycosyltransferase (Gtf) activity, responsible for glucan matrix synthesis, and biofilm formation in S. mutans was investigated. The samples, conducted in Al-Shaab Dental Specialist Center in Baghdad, included 120 child patients diagnosed with caries. Dental plaque samples were collected and analyzed for bacterial isolation, identification, and biochemical tests. Gtf activity was estimated by spectrophotometer using Wu and co-workers' method. A significant positive correlation between Gtf activity and biofilm production was found by statistical analysis, with a robust correlation coefficient (r = 0.967) at 48 hours of biofilm formation. These results underline the crucial role of Gtf in *S. mutans* biofilm formation, offering visions into the interaction between Gtf activity and caries development. Understanding this relationship may contribute to the development of strategies targeting biofilm disruption for improved oral health.

Keywords: Glycosyltransferase, biofilm, *Streptococcus mutans*, Malachite green.

ADVANCEMENTS IN NANOTECHNOLOGY-BASED DRUG DELIVERY SYSTEMS FOR ORAL HEALTHCARE: FROM TRADITIONAL PRACTICES TO PERSONALIZED MEDICINE"

Suzan Mohammed Abdul Raheem [1], Al-zahraa J. Jassim [2], Abdullah J Jasem [3], Nagham Falah Hasan [4]

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This review comprehensively examines the transformative impact of drug delivery systems (DDS) in oral healthcare, highlighting advancements from traditional methods to sophisticated nanotechnology-based approaches. Focusing on various dental conditions, from caries and periodontitis to oral cancer, the review explores the potential of nanocarriers, such as liposomes and polymeric nanoparticles, in enhancing treatment efficacy through targeted delivery and improved solubility. The future direction of DDS emphasizes optimizing nanoparticle release, ensuring safety, and understanding their interaction with the oral microbiome. The evolution of DDS is traced from early herbal remedies to modern nanoparticle-based systems, addressing key challenges in drug delivery, including solubility and systemic side effects. Preparation methods, such as solvent casting, hot melt extrusion, and lyophilization, are discussed for their roles in stabilizing and protecting drugs. The review further delves into the broad applications of DDS in various medical fields, including oncology, cardiovascular diseases, and diabetes management, and discusses the emerging trends in personalized medicine, advanced biomaterials, and the integration of DDS with the oral microbiome. Nanotechnology's role in dentistry, particularly in developing dental nanorobots and nanocomposites, is highlighted, along with the significance of addressing oral pathologies with advanced DDS. The review concludes with a discussion of the challenges and future prospects in the field, emphasizing the need for clinical translation, co-delivery approaches, and interdisciplinary collaboration for advancing oral and systemic healthcare.

ASSESSMENT OF THE MORPHOLOGY OF THE MANDIBULAR CANAL BELOW THE MANDIBULAR SECOND MOLAR IN ARABIC IRAQI POPULATION USING CONE BEAM COMPUTED TOMOGRAPHY

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The mandibular canal (MC) serves as the pathway for the inferior alveolar nerve(IAN), which terminates at the mental foramen.   The study aim**s** to compare the shape, size, and location of the MC in the jaws of the Iraqi Arabic population, between genders. The study involved 200 (CBCT) images (100male,100 female) of the Arabic population in Iraq examined for the presence of lower second molar, the measurements are shape and size. position of MC: distance from the MC to buccal and lingual alveolar ridge, distance from the MC to the root, distance from the MC to buccolingual borders, and to the inferior border of the mandible. The study involved (71male,60 females in the right side)and(55male, and 64females on the left side),the shape was oval and irregular type with significant differences on the right but insignificant disparity in the left between the genders, the size was larger in male cases compared to females cases, the measurements of location were larger in males rather than female, except for measurements of the distance of MC to lingual border was higher in females with significant difference. the distance of MC to root was zero in one case. Prior to performing endodontic or surgical extraction of the lower second molar, it is crucial to accurately identify the MC location to avoid MC injury. The broadening scope of dentistry has led to dentists being recognized as expert witnesses in the field of forensic sciences.

Keywords: Mandibular Canal, CBCT, Lower Second Molar

PREVALENCE AND MORPHOMETRIC ANALYSIS OF THE ACCESSORY MENTAL FORAMINA IN ARABIC AND KURD IRAQI POPULATIONS USING CONE BEAM COMPUTED TOMOGRAPHY

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Evaluation of the presence and morphology of accessory mental foramina (AMF) prior to performing dental implant or other surgical procedures is crucial to prevent damage to the inferior alveolar neurovascular bundle and the problems that follow. This study aimed to determine the prevalence and morphology of AMF in Arab and Kurd Iraqi populations. Cone beam computed tomography (CBCT) images of 400 subjects (200 Arabs, 200 Kurds) were collected from radiological archives. RadiAnt DICOM software (Medixant, Poland) was used for image analyses. The prevalence, location, and size of AMF were determined. Chi-square for difference and descriptive statistic for the length and width were performed utilizing SPSS v.26. The prevalence of AM noticed in 6.25% of the participants. Approximately 3.5% of the Arabic population showed an insignificant disparity between men and females on the right side. In contrast, the Kurdish community had a percentage of 9% with a non-significant difference between males and females. There was a notable disparity in the occurrence of AMF between the two groups. The AMF's location was predominantly unilateral. Among Kurds, it was most commonly positioned inferior to the MF, while among Arabs, the cases were distributed equally between inferior and same level as the MF. The oval shape was the most prevalent among Arabic cases, whereas the Kurdish cases had an equal distribution of oval and irregular shapes. In the Arab population, the average width and length of the AMF were 1.38 mm and 1.43 mm, respectively. In the Kurdish population, the average width and length of the AMF were 1.26 mm and 1.19 mm, respectively. Awareness of anatomical variation including the presence of AMF is important in planning surgical interventions of the mandible, helping to prevent complications that might arise due to inadequate preoperative assessments. This study represents Iraq's most extensive research on AMF within the two largest ethnic groups of the country, the Arabs and Kurds.

Keywords: Accessory mental foramen, cone beam computed tomography, CBCT, Iraq

ADVANTAGES OF USING CHROME-COBALT AND TITANIUM ALLOYS IN PROSTHETIC ORAL STENTS FOR CANCER PATIENTS RECEIVING HEAD AND NECK RADIATION THERAPY.

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A Radiation prosthetic stent is an intraoral prosthesis that can protect the tissue of the head and neck region as well as the teeth from the harmful effects of radiation. Radiation stent reduces such as hyposalivation, xerostomia, Mucositis, severe ulceration, loss of taste, trismus, progressive caries, and osteoradionecrosis. The purpose of this study is to protect the healthy tissues surrounding the tumor during radiotherapy for head and neck cancer. The sample of this study is composed of three groups A,B, and C , Group A: cold cure acrylic , Group B: cold cure acrylic+ chrome-cobalt alloy , and Group C: cold cure acrylic+ Titanium alloy. The dimensions of the specimen were 40mm x 55mm in length and width respectively, with a thickness of 6mm. Each group was exposed to radiation energy at two different levels (4MEV and 9MEV) and the amount of radiation penetration was recorded repeat this step 10 times for each group to obtain 10 readings. The amount of radiation that penetrated healthy tissue was then measured and the resulting data were statistically analyzed using Levene's test, two-way ANOVA test, and Bonferroni test to determine the differences between the materials and identify the best one. The data of this study show a highly significant difference (p-value < 0.001) in radiation penetration between all groups; the lowest mean value for radiation penetration was observed for groups C and B on the other hand, the highest mean value for radiation penetration was observed for group A. The stent made with a combination of cold-cure acrylic and titanium or chrome cobalt alloys provides the highest level of radiation protection for healthy tissues while the stent made with cold-cure acrylic alone has the lowest radiation protection properties.

Keywords: Chrome-Cobalt, Titanium Alloys, Prosthetic Oral Stents, Radiation

PHARMACY

EXPLORING INHALER TECHNIQUE MISUSE AND SOCIO-DEMOGRAPHIC INFLUENCES ON ASTHMA SEVERITY

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Improper use of asthma inhalers is one of the potential factors of poor asthma control. Inhaled medications are widely prescribed for patients with asthma and chronic obstructive pulmonary disease (COPD); these allow therapeutic agents to be delivered directly to the lungs and provide more rapid onset, greater efficacy, and fewer side effects; proper inhaler technique is essential to maximize the benefit of medications and improve asthma outcomes. This study aimed to evaluate the proportion of errors committed while demonstrating the inhaler technique in patients with asthma and to evaluate the effect of gender, smoking, residence, severity of asthma and marital status on asthmatic patients.
The study enrolled 410 asthmatic patients on inhaled cortisone therapy for at least three months of both sexes. Subjects enrolled in the study are ≥12 years. Women who were pregnant or nursing were excluded from the study. Asthma was more prevalent in females than males, with more than 65.85% of females and only 34.14% of males. Urban residence affects asthma state, which is more prevalent in people living in urban areas than in rural areas. Incorrect use of inhalers affects the severity of asthma; this requires educating the patient's medical staff on how to use inhalers correctly.

Keywords: Asthma, Inhalers, Technique Misuse, Pulmonary constriction, Bronchodilator.

ANTIAMOBIC AND PHYTOCHEMICAL STUDIES OF TWO MEDICINAL PLANTS: TRADITIONAL RECIPES USED AGAINST AMOEBIASIS

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Amoebiasis is an intestine infection caused by a parasitic amoeba *Entamoeba histolytica* (*E. histolytica)* with no, mild, or severe symptoms. There are various non-herbal treatments for amoebiasis; however, they all have adverse consequences. Herbal remedies have some advantages over non-herbal. As a result, the effectiveness of the herbal extracts of *Tamarindus indica (T. indica)* and *Cynodon dactylon (C. dactylon)* was tested against *E. histolytica* in the current investigation. The Soxhlet extraction method was used to get each extract in different solvents. Both extracts were then subjected to determine percentage (%) yield, phytoconstituents (PCs) screening, quality control parameters, fluorescence analysis, high-performance thin layer chromatography (HPTLC), and Fourier transform infrared (FTIR) spectroscopy. Finally, the antiprotozoal study was performed using the TY1-S33 inoculum of *E. histolytica*. Results indicated that *T. indica* and *C. dactylon* had higher percentage yields, i.e., 22.2 & 8.11 % in methanol, while low in chloroform. Methanolic extracts of both plants revealed the presence of carbohydrates, flavonoids, tannins, and proteins. A quality control test for *T. indica* and *C. dactylon* showed loss on drying (8.1 & 6.38%), total ash value (9.8 & 9.89%), and methanol soluble extractive (22.2 & 12.60%), respectively. Fluorescence analysis and HPTLC confirmed the presence of PCs. The O-H & N-H bonds were found at 3210.04, 2916.78, and 2830 cm^{-1} for *T. indica*, and N-H & C=O significant peaks at 3402.2 & 2215 cm^{-1} for *C. dactylon* were analyzed by FTIR. An antiprotozoal study demonstrated 98.2 & 97.7% trophozoite significant inhibition due to *T. indica* and *C. dactylon*, respectively. Therefore, based on these findings, it was concluded that each plant extract was safe and effective for treating amoebiasis and improving patient compliance.

Keywords: Amoebiasis, *Cynodon Dactylon*, *Tamarindus Indica*, *E. histolytica*,

DEHYDROEPIANDROSTERONE SUPPLEMENTATION IMPROVES DIMINISHED OVARIAN RESERVE CLINICAL AND IN SILICO STUDIES

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The therapeutic role of dehydroepiandrosterone (DHEA) supplementation among infertile women with diminished ovarian reserve (DOR) is still equivocal. Objective evaluation of different ovarian reserve tests (ORTs) such as serum anti-Mullerian hormone (AMH), serum follicle-stimulating hormone (FSH), and antral follicle count (AFC) in women with diminished ovarian reserve is required. This is a cross-sectional study; it was performed in Mosul city, Iraq, and enrolled 122 infertile women who had been diagnosed with DOR. The enrolled women's age ranged from 18 to 45 years old (mean age of 29.46 ± 2.64 years). In order to assess the influence of DHEA supplements in different age groups, the enrolled women were divided in to two main groups (first < 38 years old and second ≥38 years old), then enrolled women in the second group divided into other two subgroups (18-27 years old and 28-37 years old). There were significant differences in AMH, FSH, level and AFC before and after DHEA supplementation. (AMH: 0.64 ± 0.82 vs. 1.98 ± 1.32, AFC: 2.86 ± 0.64 vs. 5.82 ± 2.42, and FSH: 12.44 ± 3.85 vs. 8.12 ± 4.64), statistically obvious significant differences regarding the results of AMH ($p < 0.001$), AFC ($p < 0.001$), and FSH ($p < 0.001$). DHEA supplementations improved the ovarian reserve of enrolled women. This ovarian reserve improvement was more evident in younger women (< 38 years old) than older women (≥ 38 years old). The AMH serum levels and AFC value can be considered the best, most reliable and significant OR parameters. However, large randomized multicenter studies are required to confirm the available results and data.

Keywords: Dehydroepiandrosterone**,** diminished ovarian reserve, ovarian reserve tests, anti-Mullerian hormone, follicle-stimulating hormone

MULTIFACETED ASSESSMENT OF METFORMIN'S IMPACT ON CERVICAL CANCER CELL LINES: CYTOTOXICITY, REACTIVE OXYGEN SPECIES MODULATION, AND GENE EXPRESSION

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Metformin, a widely used anti-diabetic medication, has shown potential anti-cancer effects in various studies. This research aims to comprehensively assess the impact of metformin on different cancer cell lines, focusing on cytotoxicity, modulation of reactive oxygen species (ROS), and gene expression analysis. The study includes HeLa (human cervical cancer), HBL100 (normal human cell), In vitro experiments involved the treatment of cells with metformin at various concentrations, and assessments were conducted after 48 and 72 hours. Cytotoxicity was evaluated using the MTT cell viability assay, revealing a significant dose-dependent decrease in cell survival in HeLa cells. Morphological analysis highlighted metformin-induced cytomorphological changes, including atrophy, irregular shapes, and apoptotic features in HeLa cells. Reactive oxygen species (ROS) assays demonstrated a significant reduction in ROS levels in HeLa cells treated with metformin at a concentration of 130 μM, indicating a potential antioxidant effect. The study also explored the gene expression patterns in HeLa cells exposed to half-lethal concentrations (IC50) of metformin. Results showed a slight increase in PIK3CA gene expression, a significant down-regulation of mTOR gene expression, and a significant up-regulation of AKT1 gene expression, suggesting modulation of the PIK3CA/AKT1/mTOR signaling pathway. This multifaceted assessment provides valuable insights into the diverse effects of metformin on different cancer cell lines, emphasizing its potential as a cytotoxic agent against cervical cancer cells. The findings contribute to understanding the complex mechanisms underlying metformin's anti-cancer properties and may pave the way for further research on its cell- or tissue-specific therapeutic effects

Keyword: Metformin Cytotoxicity, Gene Expression ,HeLa ,PIK3CA/AKT1/mTOR Signaling Pathway

CURRENT NANOTECHNOLOGICAL STRATEGIES FOR DELIVERY OF ANTI RETROVIRAL DRUGS: OVERVIEW AND FUTURE PROSPECTS

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Globally, over forty million people are living with Human Immunodeficiency Viral (HIV) infections. Highly active antiretroviral therapy (HAART) consists of two or three antiretroviral (ARV) drugs and has been used for more than a decade to prolong the life of AIDS-diagnosed patients. The persistent use of HAART is essential for effectively suppressing HIV replication. Frequent use of multiple medications at relatively high dosages is a major reason for patient noncompliance and an obstacle to achieving efficient pharmacological treatment. Despite strict compliance with the HAART regimen, the eradication of HIV from the host remains unattainable. Anatomical and Intracellular viral reservoirs are responsible for persistent infection. Elimination of the virus from these reservoirs is critical for successful long-term therapy. Therefore, innovative approaches are required to design safe, low-dose therapies that ensure sustained drug levels, effectively removing the virus from reservoirs without the need for lifelong therapy. Nanotechnology has revolutionized HIV drug delivery by addressing challenges related to drug solubility, targeting specific cells, extending drug release, protecting drugs, overcoming biological barriers, enabling combination therapy, and enhancing vaccine delivery. Even if other types of nanocarriers have also been proposed to treat HIV infection such as dendrimers, nanoemulsions, liposomes, solid nanoparticles (SLN), and nanostructured lipid carriers. Additionally, strategies involving nanosuspensions of antiretroviral drugs are also discussed. These advancements contribute significantly to the development of more effective and patient-friendly HIV management strategies. However several challenges remain, including unexpected toxicity, avoiding undesirable biological interactions, and addressing the complexities and expenses involved in the large-scale production of nanopharmaceuticals.

Keywords: HIV, HAART, Nanotechnology, Nanocarriers

UTILIZATION OF COCRYSTALLIZATION TECHNOLOGY TO ENHANCE THE SOLUBILITY AND THE DISSOLUTION PROFILES OF FAMOTIDINE

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Co-crystallization is a valuable technique for improving the physicochemical properties of poorly soluble drugs, such as solubility and dissolution rate, without altering their chemical structure. This study explores the co-crystallization of famotidine (FMT), a poorly soluble medication, with nicotinamide (NIC) or urea as conformers. Solvent evaporation at a predetermined stoichiometric ratio was employed for preparation. The prepared formulations were evaluated for their solubility and in vitro dissolution. Additionally, differential scanning calorimetry (DSC) and Fourier-transform infrared spectroscopy (FTIR) analyses were performed on a selected formulation. All formulations exhibited improved drug solubility compared to pure FMT. However, FMT1, formulated with a 1:1 ratio of FMT to NIC, demonstrated the most significant enhancement. These findings suggest that co-crystallization could be a successful strategy to improve the solubility and dissolution profile of FMT.

Keywords: Co-crystals, Famotidine, Nicotinamide, Urea, Solvent evaporation technique.

DELIVERY OF NOSE TO BRAIN IN THE MANAGEMENT OF CEREBRAL VASOSPASM IN ANEURYSMAL SUBARACHNOID HEMORRHAGE

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Aneurysmal subarachnoid hemorrhage (aSAH) can cause cerebral vasospasm, which narrows the arteries in the brain and substantially affects the prognosis of the patient. Its limitations persist despite current treatments, which is why new delivery pathways such as the nose-to-brain pathway are being investigated. The blood-brain barrier may be avoided and systemic side effects may be reduced by using this non-invasive approach to access the central nervous system. The difficulty of getting drugs into the brain is a major factor in the pharmaceutical industry's focus on aneurysmal subarachnoid hemorrhage (aSAH) treatments. As a natural defense mechanism, the blood-brain barrier (BBB) severely restricts the ability of most medications to enter brain tissue. This obstacle makes it challenging to create and administer efficient treatments for aSAH, which encourages more study in this field. Using nanotechnology is one possible means of delivering medication via the blood-brain barrier and into the central nervous system. One approach that appears potential for administering medications directly to the central nervous system is nose-to-brain transfer. It uses the olfactory and trigeminal nerve pathways, which have direct links to the brain, to get over the blood-brain barrier. Nasal mucosa permeability can be increased, systemic adverse effects can be decreased, and pharmaceutical targeting and retention in the brain can be enhanced with nanotechnology-based nose-to-brain drug delivery devices. This article examines how drugs are delivered from the nose to the brain, recent advancements in treatments based on nanotechnology, and the potential uses of these systems in the management of disorders involving the central nervous system.

Keywords: aneurysmal subarachnoid hemorrhage, nose-to-brain pathway, nanotechnology.

NANO VESICULAR AS TOPICAL DRUG DELIVERY SYSTEM: TYPES, STRUCTURAL COMPONENTS, PREPARATION TECHNIQUES AND CHARACTERIZATIONS

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Nano vesicles, one of the several existing nanoscale drug delivery systems (DDCs), offer extremely promising new ways to develop treatments for degenerative diseases, cancer, and inflammation. The primary goals in the design of nanocarriers are to control particle size, surface characteristics, and drug release to achieve specified objectives. Therefore, it is crucial to accurately characterize nanocarriers in order to effectively regulate their intended behavior both in clinical environments as well as within the body. Nanocarriers are distinguished by their sizes, construction, and charged state, which are determined by sophisticated microscopic methods such as scanning electron microscopy, transmission electron microscopy, and atomic force microscopy. Electron microscopy is employed to evaluate the surface morphology and size of particles, while dynamic light scattering and photon-correlation spectroscopy are utilized to estimate the particle size and size distribution. Colloidal stability is ascertained through zeta potential which is an indirect measure of the surface charge and differential scanning calorimetry is used to characterize particles and drug interaction. Lipid nano vesicles, one of the various types of drug delivery vehicles, help clinical candidates effectively address issues such as insolubility, biodegradation, and challenges crossing the skin. The writers of this review spoke about the lipid Nano vesicular carriers' biochemical composition, structure, and preparation methods, advantages, disadvantages, namely, Cubosomes, Ufasomes, invasomes

Keywords*: Nano vesicles, lipid vesicles, Cubosomes, Ufasomes, invasomes, scanning electron microscopy, transmission electron microscopy, and atomic force microscopy

LOW BLOOD SERUM ANTI- MÜLLERIAN HORMONE (AMH) , OVARIAN STIMULATION PROTOCOL,OOCYTE NUMBER, ANTRAFOLLICLE CONT, AGE , ICSI OUTCOME,PREGNANCY RATE IN IRAQI WOMEN

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AMH is secreted by granulosa cells in preantral follicles and small antral follicles of the ovary. It predictor for ovarian oocyte reserve. Aim of study correlation between low serum AMH, Ovarian stimulation protocol ,oocyte number, antrafollicle fluid , women age, and pregnancy outcome in Iraqi women. Study conducted at Rooh Al Hayat for IVF Centre Baghdad /Iraq during September 2022 and May 2023.Infertile women with low AMH serum level participants from different Iraq parts undergo ICSI program.PCOs women excluded from study ,The mean patients' age 28.98 ± 0.31 and mean AMH levels 0.96 ± 0.03.blood sample collected from women at day cycle 2 or 3. Roche cobas e411 device use for estimation serum AMH By AMH kit.200 patients divided into 2 groups according to their ovarian stimulation protocol (agonist or antagosit) which followed by Gynecologist, Also, pregnancy outcomes divided into two groups positive pregnant test or not, statistical analysis of all parameters were performed.Results show,Pregnancy rate higher in patients treated with antagonist protocols however there were no significant differences (p=0.053) in pregnancy rates between short agonist and antagonist protocols treated patients.there were no significant differences between pregnant and non-pregnant females regarding mean AMH levels and mean age, contrary, there were significant positive correlations between serum AMH with both total oocytes count and antral follicles count . In Assisted Reproductive Technique Pregnancy rate higher in patients treated with antagonist protocols in women with low serum AMH levels, There were insignificantly higher AMH levels in females aged less than 20 years old , pregnancy rates lower in females of this age group .positive correlations between serum AMH with both total oocytes count and antral follicles count.

Keywords: Anti-Müllerian hormone(AMH),agonist, antagosit, oocytes count.

ASSESSMENT OF MEDICAL STUDENTS' KNOWLEDGE AND CONSUMPTION OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS) AT AL-BAYAN UNIVERSITY

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Self-medication (SM) is one of the irrational drugs used; it is defined as using medicines to treat self-diagnosed diseases without consulting a healthcare professional. Nonsteroidal anti-inflammatory drugs (NSAIDs) are groups of analgesic medications that are used by millions of people around the world with or without prescription. Inappropriate self-medication can have several potential risks, such as harmful interactions with prescribed medicines and inappropriate duration of use. This study aimed to assess the pattern of NSAID consumption among medical students in private University in addition to evaluating their knowledge towards NSAIDs. The study was conducted cross-sectional among (218) undergraduate medical students in a pharmacy college at a private University. The questionnaire was spread via the Google Forms online and the informed consent of the participants were collected. Our data showed that aspirin was the most common type of NSAIDs used by male and female students 67 (30.7%); the second medicine for females was ibuprofen 44 (33.3%), while diclofenac was the one preferred by male students 20 (23.3%). Most of the participants based on the results were taking NSAIDs to relieve headache pain 67 (30.7%) for both males and females. In addition, results show that dysmenorrhea was another purpose for using NSAIDs among females and musculoskeletal pain among males, 23 (17.6%) and 47 (26.7%), respectively. About half of the students, 103 (47.2%), used NSAIDs after they asked the pharmacist. Most of the students, 170 (78%), stated that they have an idea about the general adverse effects of these medicines, 141 (64.7%), and 146 (67%) of them believe that NSAIDs are abused. The results of the present study demonstrated that the knowledge of medical students regarding the adverse effects of NSAIDs is high. The majority of students believe that NSAIDs may be abused and that they should not be sold without a prescription. The most common NSAIDs used are aspirin then, ibuprofen, and diclofenac; the purpose was to relieve the pain of headaches, dysmenorrhea, and musculoskeletal.

Keywords: NSAIDs, Knowledge, Consumption, Self-medication, Medical Students

ASTHMA KNOWLEDGE ASSESSMENT OF PRIMARY HEALTH CARE PHYSICIANS IN IRAQ

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This study aimed to assess the Knowledge among primary care physicians about asthma in Iraq. Data from 390 doctors participated. A retrospective study was conducted in Iraq. The knowledge-developed 15-item questionnaire based on the national Asthma guideline for primary care physicians to assess their knowledge about asthma. Approximately 80-85% of participants correctly answered the question on the frequency and prevalence of asthma. However, in the questions on the diagnostic criteria for asthma and suitable management options for an asthmatic patient, the percentage of accurate answers was less than 50%. The Mann-Whitney test revealed no significant difference in the knowledge scores of participating physicians depending on their sex, previous training on asthma, or personal history of bronchial asthma. We found a significant difference when comparing the knowledge scores of participating physicians depending on their specialty and duration of practice as a doctor in PHC (years). This study showed that the Knowledge of primary care physicians about asthma based on the recommended national guidelines of Iraq is poor is necessary to look for possible causes behind this poor Knowledge, and simultaneously, we recommended strengthening the Knowledge of primary health care physicians about the diagnosis and management of asthma by delivering regular training courses, making electronic learning resources simply available to physicians, encourage collaboration between primary health care physicians and asthma specialists, encourage patient self-management all these interventions will ultimately lead to improving the quality of care provided to patients with asthma

Keywords: Physicians, Knowledge, Iraq, healthcare, asthma

EFFECTS OF *ALOE VERA* EXTRACT ALONE AND FERMENTED WITH BIFIDOBACTERIUM LACTIS ON IN VITRO ANTIMICROBIAL ACTIVITY AND ON LIPID PROFILE IN RABBITS WITH DIARRHEA INDUCED BY CANDIDA SPP

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The study aimed to prepare a therapeutic combination of probiotics from *B.lactis* bacteria and aqueous *Aloe vera* extract against Candida fungi by isolating Candida fungi from people with diarrhea, diagnosing them, preparing the aqueous *Aloe vera* extract, and fermenting it using *Bifidobacterium lactis* bacteria isolated from dairy products. Also, it aimed to determine the potential of this combination as a probiotic inside and outside the body, and study its resistance to bile salts and acidity at different concentrations. The bacteria showed good growth at all concentrations of bile salts, which ranged between (0.1-0.7), as well as resistance to acidity. The best growth was at pH = 7. The inhibitory role of the fermented extract against Candida isolates, and its effectiveness in reducing cholesterol levels, TG, (LDL), (HDL), and (VLDL) were evaluated. The results of dosing rabbits with the Candida fungus that causes diarrhea appeared after a period of 5-7 days dosing, represented by diarrhea, paleness, and lethargy compared to the control group. The results showed an increase in the levels of cholesterol, TG, LDL and VLDL during infection (25.7,73.3,128.50,102.25) respectively in comparison with their scores in the negative control group. The levels of the negative control group were (20.8,35,104,102.25) respectively. Results indicated a decline in the level of (HDL) (26.75) when compared with the control group's level (47.67). A significant decrease was observed in the levels of cholesterol, TG, LDL, and VLDL (89.25, 88.33. 30.15, 17.6) respectively when compared with their levels in the infected group (25.7,73.3,128.50,102.25) respectively. There was an increase in the level of HDL (41.50) when compared with its level in the infected group (26.75).

Keywords: Probiotic, cholesterol, TG, LDL, HDL, VLDL

NISSL STAIN EXPRESSION IN THE NEONATAL MICE OCCIPITAL CORTEX AFTER PRENATAL KETAMINE EXPOSURE

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The occipital cortex is positioned on the back of the brain and it is responsible for processing visual information. Ketamine is a drug used as an anesthetic. Common anesthetics can cause neurotoxicity and neurological and psychiatric illnesses, with the occipital cortex being one of the most vulnerable areas. The study aimed to estimate the histological alteration in the occipital cortices of newborn mice following ketamine injections at therapeutic doses during pregnancy. This study involved 30 pregnant female mice (8–12 weeks old) from the Laboratory Animal House, who were split into two groups: the experimental group, given 50 mg/kg ketamine hydrochloride intraperitoneally, and the control group, given distal water intraperitoneally. The mice were then subjected to a paraffin wax embedding procedure, and their neural tissue was examined using a Cresyl violet stain. The results were analyzed using the (Spss) software and the independent (t) test. Significant variability was seen when the number of cells in the mice's occipital cerebral cortex after ketamine injection during pregnancy was compared. In the control group the difference between the mean of the superficial layer to the deep layer are 85.4% percentage, while in the experimental group, the difference between the two layers is 85.1% percentage. In this study there was significant variability in the number of cells between the control group Mean $\pm$ S.D is 1326$\pm$14.4 cells, and the experimental group had a Mean $\pm$ S.D is798.06 $\pm$26.9 cells in the occipital cortex. After a ketamine injection during pregnancy, the occipital cortex of the experimental newborn mice exhibits apoptotic alterations.

Keywords: occipital cortex, Nissl satin, newborn mice

RESPONSE SURFACE OPTIMIZATION, IN-VITRO INVESTIGATION OF NASAL SOLUSOMES NANOVESICLES FOR BIOAVAILABILITY ENHANCEMENT AND BRAIN TARGETTING OF SUMATRIPTAN

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Sumatriptan is one second-generation triptan that works well and is recommended for migraine attacks. Following oral use, it has a 40% restricted bioavailability due to the hepatic first-pass metabolism. Based on Soluplus®, solusomes are elastic vesicular drug delivery devices. To develop and optimize intranasal Solusomes formulations as a substitute that targets brain delivery directly, enhancing its bioavailability and removing the first-pass effect was the aim of this effort. The quality by design technique was used to establish a correlation between the formulation parameters (Soluplus® and phosphatidylcholine (PC) concentrations) and significant quality attributes (entrapment efficiency (EE%), particle size, and polydispersity index (PDI)). Solusome formulations were developed based on the Box-Behnken design and subsequently produced via thin-film hydration. FTIR, optical microscopy, and an in-vitro diffusion study were performed on the revised formula. The enhanced formulation showed a particle size of 93.76 nm, an EE% of 83.65%, and PDI 0.3362 with the least amount of error between the projected and observed values. This study offered a feasible and efficient intranasal formulation suitable for further brain delivery research.

Keywords: Sumatriptan succinate; nasal bioavailability; pharmacokinetics; soluplus®; solusomes.

BILOSME AS A POTENTIAL CARRIER FOR IMPROVING POOR ORAL DRUG BIOAVAILABILITY

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Solid oral dosage forms are widely used in the management of chronic diseases. They are preferred due to their convenience of administration, affordability, stability, and accuracy in dose measurement. However, there are challenges with oral delivery due to a number of physiological and metabolic barriers that may impair therapeutic efficacy. Difficulties including restricted water solubility and biological membrane translocation can have a big impact on how well a medicine absorbs. The complexity of developing an oral dosage form is further compounded by considerations such as the drug's stability, the impact of gastrointestinal pH, and interactions with metabolic enzymes and biological efflux mechanisms. One of the most important pharmacokinetic indicators of a drug's capacity to achieve systemic availability after absorption is bioavailability. It is controlled by how well the medication dissolves and how well it passes through physiological barriers. The purpose of bilosomes, which are vesicular carriers made of bile salts and nonionic surfactants, is to improve the administration of vaccinations and medicinal substances. The gastrointestinal tract (GIT) can efficiently transport a range of pharmacological drugs, such as those with antibacterial, antifungal, and antiparasitic capabilities, in addition to vaccines and bioactive molecules that target infectious organisms, due to their stability and malleability. For oral medications, bilosomal formulations exhibit greater delivery efficacy due to the GIT's complex and hostile environment. This research evaluates bilosomes' potential as a delivery system, emphasizing how they might be used to administer medications for illnesses and viruses that impact the gastrointestinal tract.

Keywords: Oral drug delivery,gastrointestinal, Bilosome

NURSING

SUGGESTED INDEX OF EVALUATING "SELF-ESTEEM" LEVEL OF OBESE STUDENTS AMONG A SAMPLE AT MIDDLE TECHNICAL UNIVERSITIES IN BAGHDAD CITY.

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Identification of the components of Self-Esteem among obese university students from different academic levels. A descriptive study was conducted between 01.09.2021 and 30-6- 2022 to assess the level of self-assessments of obese youth at the university level in a non-probability purposive sample. The study sample was selected from different grades at Middle Technical University at Baghdad city and consisted of 78 students (44 males, 34 females) and a control group of 22 students (8 males, 14 females). According to the pilot study, the reliability coefficient index results showed a very high degree of reliability according to (alpha-Cronbach) scale for internal consistency, which reflects the validity of the current research on all members of the community. The descriptive statistics (Observed frequencies, percentages, mean of the score, standard deviation, and relative sufficiency) were used to evaluate the Self-Assessments, as well as methods of inferential statistics (Related rates, "Odds Ratio" and contingency coefficients). The suggested index of Self-Esteem throughout studied domains in light of "Related Rates" highly stated an anxiety feeling among the obesity sample 5-fold compared to the control group and a depression feeling among the obesity sample 4-fold compared to the control group. In addition, the results showed a stress feeling disorder among the obesity sample 7-fold compared to the control group. Moreover, the results revealed an increase in the state of feeling down Self-Esteem among the obesity sample by 6-fold compared to the control group. Furthermore, the results showed a similarity in the daily activity between the two samples with an apparent weakness of the social interaction of individuals in the obesity sample by low power (11) times compared to the control group. Finally, the study recorded a highly significant correlation (at $P<0.01$) among grand mean of score resulting by redistribution of (under / upper) cutoff point to evaluate the proposed measure and that with most of the components of the demographic indicators in the sample of respondents obese.

Keywords: Obesity Student, Self-Esteem, Nutrition Behavior Index, Daily Physical Activities, Social Interaction.

PSYCHOLOGICAL AND SEXUAL PROBLEMS AMONG WOMEN WITH HYSTERECTOMY AT BAGHDAD CITY.

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Hysterectomy is one of the most common gynecological operations done throughout the world. Early diagnosis of psychosexual effects of Hysterectomy and fast application of appropriate treatment can inhibit further symptoms elevation and persistence, especially regarding higher levels of anxiety, depression, lower self-esteem, and sexual impact after hysterectomy. To assess the Psychological and Sexual Problems of Women with Hysterectomy, and to determine the levels of Sexual and Psychological Problems among Women with Hysterectomy. A Descriptive study was carried out from March 1, 2023, to May 25, 2023 to determine the level of women's psychosexual problems underwent hysterectomy. A purposive (non-probability) sample of (120) women who were attending the outpatient clinic at Baghdad teaching Hospital, and private gynecological clinic. Data was collected through the use of constructed questionnaire and the process of self- administrative report for each woman as a method for data collections. The questionnaire was constructed by the investigator to achieve the objectives of the study, which consisted of two parts; the first part is concerned with demographic characteristics of the women and   ; the second part consists of thirty two items described the psychosexual problems of women with hysterectomy. The validity of the questionnaire was obtained through a panel of experts and the reliability was achieved through the application of alpha Correlation coefficient (r=89) which was statistically acceptable. Data was analyzed through the application of descriptive statistical analysis (frequency, percentage, mean, and mean of score). Results of the study indicated that women had moderate level of anxiety, depression, self-esteem with mean of score (2.33.), (2.32), (2.22), and had moderate level of sexual problems with mean of score (2.39). The study concluded that psychological examination prior to women with hysterectomy should be done and provision of support for coping process after hysterectomy was required to decrease the persistence of psychological impact.

Keywords: Psychosexual Problems, Hysterectomy

MOTHERS' KNOWLEDGE REGARDING MASSAGE THERAPY FOR CHILDREN WITH LOWER RESPIRATORY TRACT INFECTIONS AT PEDIATRIC HOSPITALS IN BAGHDAD CITY

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The most prevalent diseases in humans are lower respiratory tract infections or LRTIs. Acute bronchitis, chronic bronchitis, and pneumonia are the most prevalent LRTIs, resulting in 4.4% of hospital admissions, and have been linked to high incidences of morbidity, and mortality. The study aims to assess mothers' knowledge about massage therapy for Children with Lower Respiratory Tract Infections in pediatric units in Baghdad city hospitals. A descriptive study design was carried out at the pediatric Hospitals in Baghdad City to assess mothers' knowledge regarding massage therapy for children with lower respiratory tract infections at pediatric Hospitals in Baghdad City from 1st of March 2023 to the 30th June 2023. A nonprobability (purposive) sample of (100) mothers was selected from medical wards in pediatric Hospitals in Baghdad City. Content validity and reliability were conducted, data collection was performed using the study tool and the interview technique, and data analysis was executed through the use of SPSS program version (20). The results of the study revealed that the quarter of mother's age in the sample more than half of the mothers in the sample (52%) were in the age group between (20–29) years old, and (41%) of them were government employees, (84%) of them were from urban areas. Regarding the educational level of mothers, (27%) of them were Institute and college graduates. Concerning to the degree of kinship between the mother and his spouse, (52%) of them are first-degree kinship. About (45%) of mothers had three and more children, their age at first birth was between (25-29) years old, and mothers' knowledge were at a moderate level with respect to the total mean score (MS), which was(1.54). There is a significant relationship between mothers' knowledge and their educational level (0415) at p. value (0.05).

According to the results, the study concluded that mothers' knowledge about massage therapy is within the moderate level and that only their education has an effect on their level of knowledge. The study recommended the necessity for conducting educational and training programs for mothers with Children had Lower Respiratory Tract Infections to improve their knowledge about message therapy.

Keywords: Mothers' Knowledge, Massage Therapy, Children, Lower Respiratory Tract Infections.

ANALYZING SPIROMETRY PROFILE OF PULMONARY FUNCTION PATTERN AMONG GESTATING WOMEN WITH BRONCHIAL ASTHMA: A CASE-CONTROL STUDY

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Asthma is a widespread respiratory illness affecting millions of individuals worldwide, including pregnant women. Through spirometry testing, this study examines the effects of pregnancy on the lungs of pregnant females with and without bronchial asthma. The survey included 200 pregnant asthmatic women overall and 100 pregnant healthy women. FEV1, PEFR, FVC, and FEV1/FVC ratio, among other lung function indicators, were measured during the 2nd and 3rd trimesters of pregnancy. The findings show that gravid women with asthma have considerably worse lung function than healthy pregnant women, with lower FEV1, PEFR, and FEV1% values. In addition, between the 2nd and 3rd trimesters, modifications in lung function and body mass index (BMI) were seen. FEV1/FVC ratio was largely steady, although FVC and FEV1% both had considerable declines. The dynamic nature of lung function and BMI throughout pregnancy is highlighted by these findings, which also underline how crucial it is to keep an eye on these changes for the health of expectant mothers and their unborn children. To ensure maternal and fetal health, it is essential to comprehend these physiological changes, especially in people who have asthma. As spirometry data are evaluated in the future, reference equations tailored to pregnant women should be taken into account. This will provide important insights into the intricate relationship between respiratory health throughout pregnancy.

Keywords: pregnancy, asthma, FVC, FEV, FEV1, pulmonary function tests, spirometry.

ASSOCIATION OF PREGNANCY INDUCED HYPERTENSION AND HEALTH RELATED QUALITY OF LIFE

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To find out the association between pregnancy-induced Hypertension and sample quality of life. In addition to detecting any association between quality of life with certain demographical data for pregnant women with elevation blood pressure during different gestational periods. Methods: A descriptive correlational study design, a non-probability (purposive) sample of (70) pregnant women, the study tool used was a questionnaire; using the interview as a method of data collection. Data was analyzed by (SPSS) (25). Results: most of the respondents were aged (26-35), and the highest proportion of the sample reported being satisfied to some extent with their income. Studies show a negative significant correlation between quality of life and some variables. Conclusion: quality of life decreased among mothers with a history of abortion, gestational diabetes mellitus, oligohydramnios, and elevation of blood pressure. All pregnant mothers who suffered from gestational hypertension with fair quality of life.

Keywords: pregnancy, hypertension, quality, life, gestation, induced, health.

THE RELATIONSHIP BETWEEN HABIT OF TELEVISION VIEWING AMONG SCHOOL AGE CHILDREN WITH THEIR BEHAVIORS: A CROSS-SECTIONAL STUDY

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For all children, television serves as a window to the outer world. Watching too much television causes several health issues in children of all ages. Aims: to find out the relationship between TV viewing habits among school-age children with their behavior. Materials and Methods: by conducting cross-sectional studies at primary schools in the province of Babylon, the quantitative research approach began on October 15, 2022, and ended on April 25, 2023. To assess the effect of the habit of television viewing among school-age children on their behaviors, a non-probability sample of 150 students was used. After the study's questionnaire was distributed to ten experts, the validity of the tool was determined. Every rational and scientific viewpoint that the experts had presented was taken into consideration and added to. Descriptive and inferential statistical analysis to examine the data and obtain the study's conclusions. The results of the current study illustrate that (64.7%) of the sample were Fair toward television viewing habits, and (73.3%) of the sample were Fair behaviors, in addition, the results show that the habit of TV viewing affects the overall behavior of children at p-value=<0.05 level. Conclusions: The study concludes that more than half of the study sample have fair habits, and more than two-thirds of the sample have fair behaviors about habits television viewing, as well, the current study indicates that the habit of TV viewing influences on behaviors of children.

Keywords: Habits, Behaviors, School Age Children

ASSESSMENT OF ATTITUDES OF UNDERGRADUATE STUDENTS TOWARD FAMILY VIOLENCE AT THE UNIVERSITY OF BAGHDAD

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to assess undergraduate students' attitudes about family violence at the University of Baghdad. A descriptive study of non-probability (purposive) sampling of (100) undergraduate students from different colleges at the University of Baghdad from November 15th, 2022 to May 20th, 2023. A validated questionnaire was constructed with (51) questions which consisted of (2) parts namely: the demographic data of the students (16 items) and (25 items) concerned with students' attitudes. There was a positive attitude concerning family violence used by their parents, and, concerning the total relative sufficiency which was (86.18%) moderate level of attitudes. Undergraduate students reported low levels of practices about family violence from their parents, with a total mean of (1.43), (47.5), respectively. There was a significant relationship between students practice and their parent's perception of family violence (P<0.05). The study concludes that students at the University of Baghdad had a positive moderate attitude regarding parents' violence. Also, they experienced a low level of practice concerning family violence, and that the level of parent's education has an impact on students violence practice. There is a need for increasing community awareness about the subsequence of family violence and maltreatment of the members of the family through mass media and establishing family violence counseling centres for students.

Keywords: Assessment, Attitudes, undergraduate students, family violence, University of Baghdad.

MEDICAL ANALYSIS

EXAMINE HOW MEDICATIONS USED TO TREAT COVID-19 PATIENTS AFFECT THE FUNCTIONING OF THE LIVER IN PEOPLE IN IRAQ.

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This study compares the liver functioning of patients recuperating from COVID-19 to a control group of healthy individuals. The study included 69 individuals recovering from COVID-19, whose ages ranged from 26 to 66 (47.61±11.69) years old as mean±SD. The functions of liver have been compared to those of healthy adults (67 persons), whose ages ranged from 19 to 62 (10.36±36.33)years old as mean±SD. The Spearman approach was applied to certain variables, the parameters and the drugs (Levofloxacin, Azithromycin, Ceftriaxone, and Remdesivir) that the group members get cured of Covid-19 were compared using the Pearson correlation. The levels of the enzymes ALT, AST, ALP, LDH between the two groups differ significantly significantly ($p < 0.001$). In the group of recovered patients, there was a substantial $p < 0.001$ connection between the ALT concentration and ceftriaxone R=0.443 and remdesivir R=0.441, whereas there was a significant $p < 0.001$ association between the AST enzyme and Remdesivir R=0.455, azithromycin R=0.366, and ceftriaxone R=0.529.

Keywords: medication, COVID-19, Liver

NIGELLA ORIENTAL BULBS AS A MODEL FOR EXAMINING THE IMPACT OF COPPER NANOPARTICLES AND CABERGOLINE ON FEMALE RATS WITH HYPERPROLACTINEMIA: COMPARATIVE

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Plant extracts from Nigella sativa seeds were used to synthesize silver nanoparticles (NSSSNPs(from silver nitrate solution. The NSSSNPs were characterized by, spectroscopy, UV spectrophotometry, scanning electron microscopy (SEM), and F-TIR. Thirty female rats were divided into 3 groups (group 1, group2: group 2a and group 2b) 10 rats for each. The animal experiment went through three stages, in the first stage, group 2 was given chlorpromazine orally (30 mg/kg/day) by gavage needle for 28 days. Three days after end of treatment, serum prolactin levels were estimated. During the subsequent phase, G2a received intraperitoneal (IP) injections of NSSSNPs (25 milligrammes per BW) whereas G2b received IP injections of cabergoline (30 milligrammes per BW). In the third stage, all animals were killed after 2 months of starting the animal experiment and serum levels of prolactin were evaluated using Elisa Kit. In this study, NSSSNPs were used to treat hyperprolactinemia, and the effect of Vnigella sativa extract and cabergoline extract on prolactin concentration in female rats was compared. The NSSSNPs synthesized in this study has shown a potent inhibitory activity against hyperprolactinemia which could further support the role that Silver nanoparticles plays in the field of nanomedicine.

Keywords: Silver Nanoparticles, Nigella Sativa Seeds, Cabergoline And Hyperprolactinemia

ROLE OF SEVERAL CYTOKINES AND VITAMIN D DEFICIENCY IN THE PROGRESSION OF RHEUMATOID ARTHRITIS IN SAMPLES OF IRAQI PATIENTS.

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Rheumatoid arthritis (RA) can be defined as a systemic, inflammatory autoimmune disorder pertaining to connective tissues, impacting the synovial joints. It is believed that inflammatory cytokines and deficiency of vitamin D could be linked to the etiopathogenesis pertaining to the RA. Inflammatory cytokines of RA patients' serum are generally present at elevated levels versus healthy controls. An inverse relationship exists between RA activity and the serum level of vitamin D. In patients with RA, serum levels of vitamin D are considerably lower versus in healthy control, were linked to the disease activity. Enzyme-linked immune sorbent assay was used to comparative investigate the cytokines (IL-17, IL-37 , IL-8, and IL-10(serum levels in RA patients and the healthy control. While, the comparative investigate of vitamin D serum level was estimated by Cobas E411 Analyzer from Roche Company. The results demonstrated that RA patients showed higher concentration of IL-17, IL-8, IL-37, and IL-10. Our results imply the existence of a significant rise in concentration of IL-37, IL-17, IL-10, and IL-8 in RA group (66.85 ± 17.37, 96.24 ± 4.91, 86.62 ± 6.84 and, 137.53 ± 12.69 respectively) versus healthy control group (19.26 ± 0.87, 21.43 ± 2.64, 27.45 ± 1.13 and 35.71 ± 3.52; respectively.(Inverse to that, the levels of serum 1,25(OH) 2 D 3 in RA individuals (5.3 ± 1.14 ng/ml) were considerably lower versus healthy controls (36.97 ± 6.4ng/ml; $p < 0.05$). Overall, this study showed that numerous inflammatory cytokines were elevated inverse with that of the vitamin D serum level, which has been found to be low amongst RA patients and could be regarded as effective therapeutic targets with regards to inflammatory disease.

Keywords: IL-10, rheumatoid arthritis, IL-37, IL-8, autoimmune disease, vitamin D , IL-17 and cytokines

BACTERIAL CONTAMINATION OF PATIENT'S ACCOMPANIES PHONES

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The contamination with nosocomial infections is an increasing risk leading to extended length of patient's hospital stay, and it's may spread via many vehicle including patient's accompanied mobile phones, the current study aimed to investigation of the bacterial pathogens present in phones of inpatient's accompanied, and antibiotic susceptibility profile of these pathogens. A 314 sterile swabs were rotated over the phone parts surfaces, which cultured and identified according to standard bacteriological procedures and Vitek-32 system, while the antibiotic susceptibility profile was done via method of Kirby Baeur using Muller, Hinton, agar. In this study, out of 314, there was 258 (82.2%) positive bacterial growth for pathogenic, micro-organisms in mobile phones. Out of which (72.5%) were males while (53.9%) were females, in spite of that, gender was associated insignificantly with bacterial contamination. From 183 (70.9%) mobile phones a single pathogen was isolated and multiple pathogens were isolated from (%29.1) 75Including, Coagulase Negative Staphylococci (CoNS) (48.5.7%) followed by Escherichia coli, Staph. aureus, Klebsiella sp., and most of the gram-positive, cocci were sensitive to erythromycin and ciprofloxacin while were resistant, to penicillin. Gram, negative, bacteria, were sensitive, to ceftazidime, and ceftriaxone, while they were resistant, to penicillin, and gentamicin. In conclusion, patient's accompanies phones may serve as reservoirs and transference instruments of nosocomial bacteria into the clinical wards and patients.

Keywords: Bacterial contamination, Mobile phones, CoNS, Staphylococcus aureus, E. coli.

ADVANTAGE STUDY OF FERRITIN TO D-DIMER RATIO TO DIFFERENTIATE ASYMPTOMATIC FROM CORONAVIRUS DISEASE-2019 PATIENTS

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Several laboratory markers have been studied for use in diagnosis and assessing the severity of COVID-19 at the time of clinical presentation. We employed a model-based approach that led us to focus on D-Dimer (DDM) and the iron-storage protein ferritin. Our model predicts the ratio of circulating ferritin level (ng/ml) and D-Dimer (ng/ml), called the Ferritin/D-Dimer (F/DDM), it may help in early identification of patients with COVID-19. The prospective study was conducted in the laboratories of hematology and Biochemistry Department. 100 Iraqi citizen subject (60 patients was coronavirus (COVID-19) and 40 normal subject samples) divided into four groups according to IgM. According to the results of the present study: A significant association was reported between advance age and severity of COVID-19 especial more than 55 years. These results demonstrate that older patients were at higher risk of developing COVID-19.The number of male patients exposed to infection is approximately 70% higher than the number of female patients. Comorbidities showed a significant between severe, mild and moderate cases as compared with diabetes, hypertension and cardiac disease. Also highly significant appeared in asthma case while non-significant may be showed in smoking patients. With current values of C-reactive protein >
 .90D-Dimer > 0.5, and ferritin > 600, Troponin >1600 (all in unite; ng/ml) indicates that COVID-19 is progressing to a critical stage, which should be continuously monitored and perhaps averted. There is a high prevalence of abnormal liver biochemical on presentation in patients with COVID-19. In light of the risk for additional injury due to the complications and management of moderate to severe disease, it is important to monitor hepatic enzymes during the course of disease. The study also indicated that there is a significant relationship between high blood sugar levels and renal changes accompanying the increase in severe cases of COVID-19 patients. Through this study, it was observed that there is a significant correlation between the severity of the Coronavirus (COVID-19) and the ratio of these two biomarkers (F/DDM). Therefore, it has been proposed to use the ratio as one of the biomarkers for COVID-19 patients in order to better monitor the disease. Such preventive measures may significantly reduce the case fatality rate.

Keywords: D-Dimer (DDM), Ferritin (FER), Procalcitonin (PCT), Troponin (TRP), and the Ferritin/D-Dimer (F/DDM) ratio.

ANTIBIOTIC SUSCEPTIBILITY PATTERNS OF *STAPHYLOCOCCUS AUREUS* ISOLATED FROM VARIOUS CLINICAL CASES IN AL-RAMADI TEACHING HOSPITAL

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One of the most common and potentially fatal pathogens is resistant Staphylococcus aureus. When choosing an effective medication for the management of staphylococcal infections, the antimicrobial susceptibility profile of the local isolates is fundamental. The aim of the study was to find out the level of antibiotic resistance that the clinical Staph. aureus isolates in our setup presently carried. Staph. aureus isolates from various clinical cases in Al-Ramadi Teaching hospital were isolated and identified using a standard microbiological methods. Antimicrobial susceptibility test by Kirby-Bauer disc diffusion and minimum inhibitory concentration on automated Vitek-2 Compact system (bioMerieux) were examined. A total of 23 antimicrobial agents were used in the current study. A total 100 different clinical samples were obtained from various clinical cases . Forty (40%) of these samples were staphylococcus aureus. It was isolated frequently from wound (37.5%) followed by skin swab (25%.(Regarding patterns of antimicrobial resistance, S. aureus showed susceptible to Gentamicin (68%), Tetracycline (80%), Rifampin (85%), Erythromycin (68%,(Ciprofloxacin (85%) ,and Impenem (90%).Thirty-five percent of isolates were found to be resistant to Trimethoprim and (86%) were Methicillin Resistant2) MRSA).(100%) were resistant to Benzylpenicillin . finally only (3%) of isolates were resistant to Vancomycin. AST is essential for managing S. aureus infections due to its ability to identify antibiotic resistance, guide treatment decisions, monitor resistance patterns, and improve patient results.

Keywords: Staphylococcus aureus, antimicrobial susceptibility test, Antimicrobial resistance

DETECTION OF THE HISTOPATHOLOGICAL CHANGES IN LUNG TISSUES OF WHITE MICE CAUSED BY *CRYPTOCOCCUS NEOFORMANS*, AND THE THERAPEUTIC EFFECT OF ENDOPHYTIC FUNGUS EXTRACT.

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The current study included the isolation and diagnosis of *Cryptococcus neoformans* yeast from clinical samples from patients attending Al-Batoul Hospital and Baquba Teaching Hospital for chest and respiratory diseases, cancer, kidney failure, and meningitis patients, and was conducted during the period from last September. 2022 to May 2023. The number of samples obtained was a total of 130 samples, and Cryptococcus neoformans yeast was found in only (15) samples, which included 3 sputum, 6 urine, and 7 cerebrospinal fluid. All samples were diagnosed using conventional methods, using culture media for yeast, and supporting diagnosis using Vitic device technology. The results of phenotypic, cultural, and microscopic examinations showed the presence of three types of Cryptococcus sp. Of the total number, it included *Cryptococcus neoformans, Cryptococcus albidus, and Cryptococcus laurentii*, where 6 isolates belonged to the *C.neoformans* type in the cerebrospinal fluid sample, and from the sputum and urine samples there were 5 and 4 isolates, respectively. The results showed that the fungal filtrate extract at a concentration of 100% gave the highest rate of inhibition of *C. neoformans* compared to the antibiotic Amphotericin B. Based on this result, the filtrate was used in this study as a therapeutic antibiotic for mice infected with *C. neoformans* yeast and compared to the antibiotic Amphotericin B. The results showed Mice infected with yeast suffered from loss of appetite and hyperactivity compared to the control group. As for the results of the histological examination of the lung organ, the histopathological changes in the lung were represented by the infiltration of inflammatory cells in the environmental tissues of the lung, with congestion of blood vessels and thickening of the bronchi, and these changes increased. In the inhibited group, in addition to what was mentioned above, there was a thickening of the environmental tissue of the alveoli with the presence of blood congestion, and the presence of yeast inside the lumen of blood vessels and in some lungs. Alveoli. The results of the histological sections of the mice treated with the antifungal also showed changes close to aggregates and blood congestion, and bronchioles (Br) and thickening of the walls of the pulmonary alveoli (TW) appeared, while the results of the mice treated with the antifungal showed that the extract of the fungal filtrate showed fewer changes than in the groups. The pulmonary alveoli (Alv) and alveolar sacs (AVS) appear almost normal, and this indicates that giving the fungal filtrate extract as an experimental treatment has effectively and clearly contributed to reducing histological and histological abnormalities. Pathological changes.

Keywords: Histopathological, Lungs, *Cryptococcus Neoformans,* Endophytic Fungus Extract

INTERLEUKIN ONE BETA (IL-1B) GENE POLYMORPHISMS IN IRAQI PATIENTS WITH SUSCEPTIBILITY TO DEVELOP HEPATITIS C INFECTIONS

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Hepatitis C virus (HCV) infection is the main cause of chronic hepatitis, affecting an estimated 150 million people worldwide. Initial exposure to HCV is most often followed by chronic hepatitis, with only a minority of individuals spontaneously clearing the virus. The Polymorphic gene *IL-1B* analyzed in a total of 45 individuals: 30 patients with chronic hepatitis C and 15 healthy control from different cities in Iraqi recruited to the Hospital for diseases of the digestive system and liver in Baghdad between November 2022 to February 2023 and 15 controls. Genomic DNA was obtained using the (Addbio, Korea) and performed by polymerase chain reaction (PCR) then also performed by Serum concentrations of IL-1β were measured by the Enzyme-Linked Immunosorbent Assay (ELISA) and finally confirmed by sequencing. The results were showed by (ELISA) for serum levels of IL-1B that the level of IL-1β significantly increased (P≤0.01), from 1.10-+0.09 in hepatitis specimens in comparison with the level in healthy controls 7.58± 0.28. Our results suggest that IL-1B single nucleotide polymorphism is probably associated with susceptibility to HCV chronic infection in the population of Iraqi, the sequencing alignment data for 30 samples from patients with hepatitis C were compared to 15 control samples. The findings indicated frame shifts (gaps) in 123 and 124 positions in patients' comparison with control groups.. In conclusion, the results suggest that IL-1B is probably associated with susceptibility to hepatitis C virus chronic infection.

Keywords: HCV, interleukin-1β, polymorphisms, polymerase chain reaction (PCR).

ANTIBACTERIAL ACTIVITY OF *KLEBSIELLA PNEUMONIAE* ISOLATED FROM PNEUMONIA PATIENTS.

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Bacterial samples were collected from (100) patients suffering from chest infections (Respiratory tract infections), especially *pneumonia*, admitted in Baghdad hospitals (AL-Yarmouk Teaching Hospital, AL-Karama Teaching Hospital) or period from January 2023-March 2023 from males 51/100 (51%) and females 49/100 (49%) gender. Sterile containers collected sputum from infected patients, then inoculated by swab onto MacConkey with crystal violet medium for selection of Gram-negative and inhibition of Gram-positive bacteria. Then the samples were taken inoculated on the nutrient agar medium and incubated for 24-48 hours at 37°C. Then, the bacterial isolates were diagnosed by the basic biochemical tests. The results showed *Pseudomonas aeruginosa, Klebsiella pneumoniae*, and *Acinetobacter baumanii* were 39/100 (39%), 34/100 (34%), and 27/100 (27%), respectively isolated from RTIs patients presented to hospitals as out- and inpatients. Then these isolates were cultured on Muller Hinton agar medium to study their resistance and sensitivity to antibiotics, so the results of AST showed these *K. pneumoniae* were resistant to Piperacillin PRL 100μg, Augmentin AUG 30μg, Aztreonam ATM 30μg, Imipenem IMI 10μg, Meropenem MRP 10μg, Vancomycin VA 30μg, Ceftriaxone CRO 30μg, Cefotaxime CTX 30μg, Ceftazidime CAZ 30μg, Cefepime FEP 30μg, Azithromycin AZM 15μg, Gentamycin CN 10μg, Tetracycline TE 30μg, Amikacin AK 30μg, and Sulfamethoxazole SMX 100μg as 31/34 (91.18%), 28/34 (82.35%), 24/34 (70.59%), 26/34 (76.47%), 28/34 (82.35%), 24/34 (70.59%), 24/34 (70.59%), 26/34 (76.48%), 20/34 (58.82%), 19/34 (55.89%), 22/34 (64.70%), 25/34 (73.53%), 23/34 (67.68%), 21 (61.77%), and 23/34 (67.68%), respectively. The study aimed to know the effectiveness of antibiotics used in killing or inhibiting bacteria growth; and study the bacterial resistance to these antibiotics to reduce the use of unnecessary or random antibiotics that lead to increased bacterial resistance through using antibiotics for cure.

Keywords: Antibiotic resistance, Pneumonia, Klebsiella pneumoniae, Respiratory