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Dream, Believe, Persevere



RLKU
MEDICAL & DENTAL COLLEGE

Prepared By: Prof. Dr. Nashi Khan, Head, RLKU Research Cell
Ms. Mahrukh Mumtaz (RLDPP), Dr. Sadia Yaseen & Mr. Daniyal Safdar (ME)
Rashid Latif Khan University (RLKU)
Rashid Latif Medical Complex (RLMC)

Editor's Note

Starting with the Name of Allah, the Most Merciful, the Most Beneficent.

“Academic Success Depends on Research and Publications”

---Philip Zimbardo---

It is a Prestigious Honor for me as the First Head and Editor of RLKU Research Cell to get this First Volume and Issue of Abstract Book published. I am Highly Obligated to CEO, Madam Sabahat Khan, for putting her trust in me with this Challenge. Expressing my Gratitude to all the Executive Members and HODs, I much appreciate their Co-operation in this Process.

This First Issue is the Compilation of all the Published Abstracts of Faculty Member's Researches since 2018-2022. I Proudly Appreciate the Quality of Work done that is Complementing the Scientific Advancement and Elevation. I hope this First Issue of Abstract Book will enlighten the Life-Long Learners who will be the Product of this Institute and the Future of the Community.

As the Teamwork makes the Dream Work, so I would like to Acknowledge the resolute Devotion and Support of every Colleague who has made it Possible. I Thank the Faculty Members of all Departments for providing their Abstracts in the given Format in very short notice of Time. I would like to mention the Efforts and Support of Dr. Sadia Yaseen and Mr. Daniyal Safder from Medical Education Department. My very special Gratitude to Ms. Mahrukh Mumtaz and Ms. Zunaira Tariq from RLDPP for constant Support and Assistance Day and Night in the completion of this Abstract Book.

Concluding my words, I hope this Little Effort can make a big change and open New Horizons in the Field of Research and Knowledge. It might help the upcoming Generations to look farther and further as Issac Newton said,

“If I have seen Further than Others, it is by Standing on the Shoulders of Giants.”



Prof. Dr. Nashi Khan
Head, Research Cell, RLKU
Dean, Faculty Social Sciences (FSS)

Table of Contents

College of Pharmacy		
1	A Clinical Trial of Cranberry and Elderberry Extracts (Berdi® Sachet) for Urinary Tract Infection in Pakistani Population	2
2	A Clinical Trial of Multi Herbal Preparation (EZCol) Syrup for Constipation in Pakistani Population	2
3	COVID-19: Outbreak, Advancements and Possibilities	3
4	An Updated Review of Pharmacological, Standardization Methods and Formulation Development of Rutin	3
5	Analysis of Prescription Trend in the Treatment of Hepatitis C and The Study of Association of this Therapy Plan With the age of The Patient	4
6	Anesthetic And Antibacterial Activity of Ketamine Derivatives Synthesized by Mannish Reaction	4
7	Anti-Pseudomonas Aeruginosa Drug; To Evaluate Bactericidal Activity of Tabebuiaimpetiginosa Against Pseudomonas Aeruginosa and its Synergistic Effect with Common Anti-Pseudomonas Aeruginosa Drug	5
8	Antibacterial Activity of Selected Medicinal Plants Extracts Against Escherichia Coli Isolates Causing Urinary Tract Infections	6
9	Antiviral Activity of Green Silver Nanoparticles Produced Using Aqueous Buds Extract of Syzygiumaromaticum	6
10	Assessment of Efficacy of Multi Herbal Extracts. Product (FluAct® Syrup) against Flu Indications in Pakistani Population	7
11	Biochemical Dynamics and Clinical Features of Novel Corona Virus (2019-nCoV)	7
12	Biocompatible Hydrogels for the Controlled Delivery of Anti-Hypertensive Agent: Development, Characterization And in Vitro Evaluation	8
13	Co-Delivery of Curcumin and Cisplatin to Enhance Cytotoxicity of Cisplatin Using Lipid-Chitosan Hybrid Nanoparticles	8
14	Comparative Study of Various Super disintegrants By Preparing Fast Disintegrating Tablets of OndansetronHCl Using Different Approaches	9
15	Detection of Hepatitis C Virus in Blood Donors; Correlation of Hepatitis C with Intravenous Drug Use/Abuse/Addict, Type of Blood Donor and Multiple-Pricks	10
16	Determination of Risperidone in Pharmaceutical Products by UV-Spectrophotometry and RP-HPLC: Method Development and Validation	10
17	Determination of Sodium (2-(2, 6-dichloroanilino) phenyl) Acetic Acid in Human Plasma by Rapid and Sensitive HPLC Method and UV-Spectrophotometry	11
18	Developing Methods for the Evaluation of Isotonicity of Parenteral Products	11
19	Development and Evaluation of Mucoadhesivebuccal Tablet Containing Metronidazole for the Treatment of Periodontitis and Gingivitis	12
20	Development, Characterization and Evaluation of Anti-Fungal Activity of Miconazole Based Nanogel Prepared from Biodegradable Polymer	12

21	Emerging Immunomodulation Technologies May Potentially Improve the Clinical and Pharmaceutical Health Care	13
22	Enhanced Gastric Retention and Drug Release Via Development of Novel Floating Microspheres Based on Eudragit E100 and Polycaprolactone: Synthesis and in Vitro Evaluation	14
23	Estimates of The Severity of Covid-19: A Comparison of Pakistan with Other Developed Countries	14
24	Estimation of Caffeine Concentration in Decaffeinated Coffee and Tea Available in Pakistan	15
25	Evaluation of Phytochemical, Anti-Oxidant and Cardiac Depressant Effect of Rumexdentatus by Using Langendorff's Isolated Heart Apparatus.	15
26	Fabrication of HPMC and Hibiscus Esculentus (OKRA) Gum Based Microspheres Loaded with Sulfasalazine and Dexamethasone	16
27	Formulation Development Using Different Natural and Semi Synthetic Polymers, in Vitro Evaluation of Colon Targeted Sulfasalazine Tablets for Ulcerative Colitis	16
28	Hypertension-Related Knowledge, Medication Adherence and Health-Related Quality of Life (HRQoL) Among Hypertensive Patients in Islamabad, Pakistan	17
29	Impact of Pharmacist's Intervention on Disease Related Knowledge, Medications Adherence, HRQoL and Control of Blood Pressure Among Hypertensive Patients	17
30	In-Vivo and in-Vitro Studies to Investigate the Anti-Diabetic Mechanisms Underlying Moringaoleifera Leaf Ethanol Extracts	18
31	Indigenous Medicinal Plants of Pakistan Used to Treat Skin Diseases: A Review	18
32	Medicinal Plants and Nonsteroidal Anti-inflammatory Drugs (NSAIDs) in Treatment of Arthritis: A Literature Review	19
33	Method Development For 4-Hydroxy-2-Methyl-N-(5-Methyl-2-Thiazolyl)-2h-1,2- Benzothiazine-3-Carboxamide-1,1-Dioxide by Reverse Phase Hplc: New Analytical Technique	20
34	Nanoemulsions as Novel Nanocarriers for Drug Delivery Across the Skin: In-Vitro, In-Vivo Evaluation of Miconazolenanoemulsions for Treatment of Candidiasis Albicans	20
35	Nootropic Evaluation of Methanolic Bark Extract of Murrayakoenigii (L.) Spreng Against Scopolamine and Diazepam Induced Memory Dysfunction in Mice	21
36	Novel Dynamics of Virus-Reconciled Drug Activation in Cytomegalo Virus Infection	21
37	Optimization of Empagliflozin Immediate Release Tablets (10 mg) Using Central Composite Rotatable Design with Response Surface Methodology	22
38	Pattern of Inappropriate Antibiotic Use Among Hospitalized Patients in Pakistan: A Longitudinal Surveillance and Implications	22
39	Potential Threat of New Delhi Metallo-Beta-Lactamase-1 Enzyme, Multi Drug Resistant and Extensive Drug Resistant (XDR) to achieve the Millennium Development Goals (MGD's) in South East Asian Countries	23
40	Preparation and in Vitro Characterization of Polyvinylpyrrolidone-Poloxamer Polymeric Synergy for Oral Drug Delivery	24
41	Preparation of Smart PVP/HPMC Based IPN Hydrogel, its Characterization and Toxicity Evaluation	24

42	Prevalence and Treatment of Neurological and Psychiatric Disorders among Tertiary Hospitals in Pakistan; Findings and Implications	25
43	Protective Potential of Sugar Beet Pulp Extracts (SBPE) Against Heavy Metal Induced Hepatorenal Toxicity in Rats	26
44	Relevancy of Nizatidine Release from Floating Tablets with Viscosity of Various Cellulose Ethers	26
45	Statistical Study of Self Medication with OTC and Antibiotics in Three Major Cities of Pakistan	27
46	Synthesis, Analysis and Biological Studies of Transition Metal Complexes of Cefixime	27
47	The Evaluation of Impacts of Socio-Psychological Factors on Women Suffering Breast Cancer	28
48	The Potentially Recommended Pharmacotherapy for COVID-19	28
49	Traditional Medicinal Plants Used for Respiratory Disorders in Pakistan: A Review of the Ethno-Medicinal and Pharmacological Evidence	29
50	Worldwide Role of Clinical Pharmacist in Optimizing Patient Health: A Systematic Review	30
College of Physical Therapy		
51	Assessment of Level of Kinesiophobia among Chronic Low Back Pain Patients	32
52	Prevalence of Patellofemoral Pain Syndrome in Females and Its Impact on Daily Activities	32
53	Effects of Core Stabilization Exercises on Low Back Pain and Back Muscle Endurance in Patients with Lumbar Disc Herniation	33
54	The Relationship of Perceived Child Vulnerability and Parental Overprotection to Physical Activity in Pediatric Asthma	33
55	Impact of Diabetes on Patient's Quality of Life with Respect to Duration	34
56	Prevalence and Nature of Injuries among Academy and Club Young Professional Cricketers in Lahore	34
57	Learning Style Preference of DPT Undergraduate Students	34
58	The Effects of COVID-19 Lockdown on Physical Activity and Quality of Life among Students from Different Socioeconomic Backgrounds	35
59	The Effects of Open Chain Kinetic (OKC) Exercises and Closed Kinetic Chain (CKC) Exercises in Improving Dynamic Balance and Range of Motion in Patients with Knee Osteoarthritis	36
60	Effectiveness of Mulligan Sustained Apophyseal Glides (SNAGs) and Maitland Mobilization for the Treatment of Cervicogenic Dizziness	36
61	The Relationship between Fear Avoidance Belief and Low Back Pain in Pregnant Females	37
62	Relationship of Fatigue with Insomnia among Pregnant Women	37
63	Efficacy of Post Isometric Relaxation versus Reciprocal Inhibition Technique on Hamstring Muscle Flexibility among Students of Johar Institute of Professional Studies Lahore	38
64	Is Sarcopenia and Fall Efficacy Predictor of Locomotive Syndrome?	38
65	Physical Therapist Knowledge towards Physical Activity and Its Promotion	39
66	Effect of Physical Therapy in Prevention of Postoperative CABG Complications; A Randomized Controlled Trial	39
67	Impact of Frailty on Geriatric Patients Presenting to Hospital with Fractures and	40

	Its Association with Their Functional Activities	
68	Effects of Chest Physiotherapy in Removal of Retained Tracheobronchial Secretions among Mechanically Ventilated Patients in Intensive Care Unit	40
69	Comparing Effectiveness of Natural Apophyseal Glides and Grade II Maitland Mobilization in Nonspecific Neck Pain	41
Allied Health Sciences		
70	Diagnostic Evaluation of Autism Spectrum Disorders, A Health Professional Survey	43
71	Education Quality Measure of Undergraduate Students of Speech and Language Pathology in Pakistan	43
72	Experiences of Police Officers during Covid-19	44
73	Barriers in Collaborative Practice among SLP/Ts and Special Educationists Working in Special Education Settings	44
74	Frequency of Voice Changes during Covid-19 Infections: A Retrospective Study	45
75	Parental Perspective Regarding Consanguineous Marriages as the Cause for Speech and Language Disorders in Pakistan	46
76	Opinion of Speech Language Pathologist/Therapist about Common Communication and Swallowing Difficulties in Children with Cerebral Palsy	46
77	Awareness of Dyslexia among Primary School Teachers in Public and Private Setting in Lahore City, A Cross Section Survey	47
78	Evaluating the Causative Factors that Lead to Rejection of Hearing Aids Among Young Adults Having Moderate to Severe Degree of Sensorineural Hearing Loss	47
79	Awareness of Parents of Hearing-Impaired Children About the Importance of Speech-Language Therapeutic Interventions	48
80	Effectiveness of Linguistic Base Approach and Traditional Articulation Therapy to Improve Articulation Among Children (8-12 years) with Mild to Severe Hearing Loss	49
81	Perception and Experiences of Undergraduate Students regarding Online Classes in Pandemic	49
82	Understanding the Context of Education in an Urban Slum: A Case of Babu Sabu, Lahore	50
83	Impact of Online Classes during COVID-19 Pandemic Situation on Undergraduate University Students Pakistan	50
84	Association Between Screen Timing and Delayed Language Development Among Toddlers and Preschoolers	51
85	Advantages of Smart Phone Hearing Aids Over Traditional Hearing Aids Methods	52
86	Effects of Sensorimotor Problems on The Performance of Activities of Daily Living in Children with an Autism Spectrum Disorder	52
87	Acoustic and Speech Perceptual Evaluation of Health-Related Quality of Life among adults with Chronic Supportive Otitis Media	53
88	Effectiveness of the Social Communication Emotional Regulation and Transactional Support (Scerts) Model-Based Intervention in Language Development and Fostering Social Communication in Children with Autism Spectrum Disorder	53
89	Emotional and Behavioral Difficulties among Children and Adolescents with Cochlear Implants	54
90	Factors Affecting the Speech Nasality in Children with Cleft Palate	54
91	Effect of Social and Self Stigma on Hearing Aid Rejection	55
92	Prevalence and Risk Factors for Occupational Voice problems in Teachers	55
93	Comparison Between the Satisfaction Level of Digital and Analog Hearing Aid Users	56

94	Assessment of the Level of Communication Anxiety of the Children with Repaired Cleft Lip and Palate	56
95	Relationship among Sensory Issues and Repetitive Behaviors in Children with Autism Spectrum Disorders	57
96	Relationship of Anxiety and Repetitive Behaviors Among Autistic Children	57
97	Estimation of Resonance in Individuals with Repaired Cleft Palate by Using Temple Street Scale	58
98	Comparison of Health-Related Quality of Life in Children with Normal Hearing and Those with A Cochlear Implant at Age of 4-6 Years	59
99	Compare the Level of Satisfaction among Smart Phone and Traditional Hearing Aids Users	59
Allied Health Sciences, Department of Nutritional Sciences		
100	Hyperhomocysteinemia as an Independent Risk Factor for Coronary Heart Disease-Comparison with Conventional Risk Factors	61
101	Association of Dietary Factors with Plasma Homocysteine and Coronary Heart Disease Outcome	61
102	Correlation Between Homocysteine and Lipid Levels in Patients with Ischemic Heart Disease	62
103	Consumption of Milk and Milk Products Among Young People of Pakistan	63
104	Effect of Morus Alba (White Mulberry) Leaf on HbA1c of Patients with Type II Diabetes Mellitus	63
Nursing College		
105	The Magnet Model: A Solution to Nursing Empowerment in Pakistan	65
106	Priority Setting from the Lens of Justice in the Existing Health Care Industry of Pakistan	65
107	Florence Nightingale's Environmental Theory and its Impact on Patients Health Care Case Study	65
108	What to follow; Problem Based Learning or Traditional Teaching?	66
Dental College		
109	Divine Proportions Assessment in Edentulous Patients Before and After Complete Denture Insertion	68
110	Prevalence of TMJ Disorders Among Dental Students and Its Relation to Malocclusion	68
111	Occlusal Schemes During Eccentric Jaw Movements in Dental Students of Lahore Medical and Dental College, Lahore	69
112	Comparison of Effectiveness of Mineral Trioxide Aggregate and Calcium Hydroxide in Apexification Procedure	69
113	Assessment of Confidence Level Amongst Undergraduate Dental Students in Performing Various Restorative Procedures	70
114	Prevalence of Temporo-Mandibular Joint Disorders and Associated Morbidity Among the Patients Attending Clinic	70
115	Safe Protocol of Resuming Routine Dental Procedures in A Tertiary Care Hospital Setting Post Covid-19 Lockdown	71
116	Influence of Risk Habits on Demographic Factors and Its Impact on Oral Sub Mucous Fibrosis	71
117	Dental Anxiety, Smoking and Snuff Use Among Dental Patients	72

118	Oral Lichen Planus and Hepatitis C Virus Infection; A Symbiotic Relationship or Amere Co-Incidence?	72
119	Quality And Readability of Online Information Available for The General Public on Orofacial Granulomatosis	73
120	The Impact of Drug Therapy on Minor Oral Surgery Procedures	73
121	Analyzing The Teaching Skills of Interns to Assess the Quality of Teaching	74
122	Mouth Guards; Awareness About Mouth Guards in Dental Community of Lahore	74
123	Violence Against Dental Surgeons: An Analytical Cross-Sectional Study	75
124	Comparison of Clinical Attachment Level Gain Using Scaling Root Planning Versus Adjunctive Azithromycin on Chronic Periodontitis.	75
125	Phytochemical Compound and Non-Cytotoxicity Effect of Sting Bee and Stingless Bee Honey Against Normal Human Gingival Cell Lines	76
126	Salivary Mmp-9 Levels in Chronic Periodontitis Patients with Type-II Diabetes Mellitus	76
127	Zika Virus: Raising Awareness to Prevent a Pandemic	77
128	Is Outcome Based Cleft Research Leading Somewhere?	77
129	Role of Serum Ceruloplasmin as Tumor Marker in Early Diagnosis of Oral Squamous Cell Carcinoma	77
130	Pharyngeal Obturator Prosthetic Rehabilitation of Velopharyngeal Insufficiency	78
131	Effective Modes of Conceptual Teaching and Learning in Pakistan an Undergraduate Medical Students Perspective	78
132	Interferon Induced Oxidative Stressin Chronic Hepatitis	79
133	Alveolar Bone Response of Diabetic Rats to Orthodontic Tooth Movement	79
134	Role of Erk in Oral Cancer Progression in Pakistani Population	80
135	Assessing Knowledge, Attitude and Practices for Oral Squamous Cell Carcinoma Among Health Care Profession	80
136	Prevalence Of Xerostomia and Associated Systemic Risk Factors in Riyadh, Saudi Arabia: A Cross-Sectional Study	81
137	Role of Serum Ceruloplasmin as Tumor Marker in Early Diagnosis of Oral Squamous Cell Carcinoma	81
138	Gene Therapy for Cleft Lip and Palate	82
139	Systemic Manifestations of The Periodontal Disease: A Bibliometric Review	82
140	Citation Classics on Dental Caries: A Systematic Review	83
141	Antibiotics: A Bibliometric Analysis of Top 100 Classics	83
142	Delayed Management of White Eye Blowout Fracture: It's Never Too Late	84
143	Association Of Socio-Demographic and Clinicopathological Risk Factors with Oral Cancers: A 19-Year Retrospective Study	84
144	Safe Protocol of Resuming Routine Dental Procedures in A Tertiary Care Hospital Setting Post Covid-19 Lockdown	85
145	Comparison of Dental Caries and Gingival Bleeding Status Among Diabetic and Non-Diabetic Type 2 Children	86
146	Evaluation of Efficacy of Post-Operative Antibiotic Prophylaxis in Mandibular Fractures	86
Community Medicine		
147	Assessment of Hygienic Practices of Street Food Vendors Serving in Lahore	88
148	Maintenance of Anti-Retroviral Therapy (Art) to HIV Patients and Their	88

	Preventive Practices Against Covid-19 Pandemic - A Syndemic Perspective from A HIV Center in Pakistan	
149	Knowledge, Attitude and Practices (Kap) of Oral Hygiene among School Children	89
150	Psycho-Social Determinants of Acne in Rural Community of Lahore	89
151	Skills and Attitude of Students Which Affect Fostering of Critical Thinking in Undergraduate Medical Students	90
152	Screening of Foeniculum Vulgare l, Coriandrum Sativum l, Pegnum Harmala l. and Achilleae Millefolium l collected from Baluchistan against Fungi causing Onychomycosis	91
153	Psycho-Social Determinants of Acne in Rural Community of Lahore	91
154	Role of Aegle Marmelos Extract in the Management of Haemorrhoids as Compared with Daflon: A Randomized, Active Controlled, Multicentre Study	92
155	Cholesterol Lowering Effect of Citrus Paradisi (Grape Fruit) Peel Extract in Hypercholesterolemic Patients in an Urban Community: A Randomized Control Trial	92
156	Effect of Apple Peel Extract on the Production of IG Immunoglobulins in Immune Suppressed Mice	93
157	Myeloprotective Potential of Malusdomestica (Apple) in Carboplatin Induced Myelosuppression in Swiss Albino Rats-A Way to Prevent Dengue and Similar Viral Diseases	93
158	A Knowledge, Attitude and Practice (KAP) study on Dengue prevention in urban Lahore	94
159	Prevention of Functional Dyspepsia with Carica Papaya Extract	95
160	Community Based, Multicentre, Randomized, Double Blinded, Placebo Controlled Clinical Trial of Trachyspermumcopticum Extract Against Stable Angina	95



A Clinical Trial of Cranberry and Elderberry Extracts (Berdi® Sachet) for Urinary Tract Infection in Pakistani Population

Yasir Mehmood, Hafiz Umar, Humayun Riaz, Umar Farooq, Hammad Yousaf

Lower urinary tract infection (UTI) is very common diseases. Recurrent UTI remain challenging to treat because the main treatment option is long-term antibiotic and this poses a risk for the emergence of bacterial resistance. Some options to avoid this risk are available, including the use of cranberry and elderberry products (herbal products extract). However, this can lead to the advent of bacterial resistance. The cross sectional study was designed to evaluated the efficacy of above products. The study was conducted from 23 October 2019 to 28 October 2019 in Arif Memorial Teaching Hospital, Lahore, Pakistan. The subjects were outpatients aged 20 to 65 years. UTI symptoms were recorded in the daily diary before, during and after treatment and assessed by the Jackson score. Following approval by the Ethics Committee of Rashid Latif Pharmacy College, the questionnaire (ROUTE2-002) was compiled and information of UTI patients using cranberry and elderberry extracts (Berdi® Sachet) was collected. Compliance and tolerability were considerable obstacles in this study. A total of 67 patients were screened for participation; 12 were unwilling to participate and 55 were enrolled for clinical trial and all patients had urinary tract irritation. In this study 55 (100%) UTI patients were cured with cranberry and elderberry extracts (Berdi Sachet). Further investigation is needed to confirm this effect and to evaluate the health benefits of cranberries and elderberry.

Keywords: Urinary Tract Infection, Cranberry, Symptoms, Cure

A Clinical Trial of Multi Herbal Preparation (EZCol) Syrup for Constipation in Pakistani Population

Yasir Mehmood, Hammad Yousaf, Umar Farooq, Rana Khalid Mahmood, Mahpara Gondal, Humayun Riaz, Hafiz Umar, Hafiza Aisha Sadiqa, Mueen Mohsin

Constipation is one of the symptoms of intestinal syndrome which would be happened along with some other disease in patients. There are several treatment available to cure the constipation but use of stimulant laxative in chronic and acute constipation is more safe and useful of any age patients. In this cross sectional study we clinically observed the efficacy of multi herbal extract (Cassia senna, Rheum palmatum and Cuscutareflexa) in constipation. We have used local company syrup (EZCol syrup). This syrup contains multi herbs and senna leaves extract is main ingredient of this syrup. The active constituents of enna leaves are Sennosides which considered as an effective treatment for constipation. We aimed to assure the effect of senna leaves extract along with other herbal extract (Rheum palmatum and Cuscutareflexa) for the treatment of constipation. In this study, 35 patients were observed after taking the syrup (dose 15 mL 2 time/daily for 3 days). A questionnaire (ROUTE2-003) was developed and distributed to the patients after prescription of EZCol syrup. Treatment was continued for 3 days and data was compiled and result shown significant cure in constipation. Maximum patients felt relief from constipation just within 3 days. Some patients felt diarrhea at third day. Moreover no further significant complications were found in patients.

Senna is an FDA-approved over-the-counter (OTC) laxative. Senna leaves extract is a safe, effective and well-tolerated herbal supplement for the treatment of constipation having no significant adverse effect.

Keywords: Chronic Constipation, Defecation, Laxative, Senna, Syrup.

COVID-19: Outbreak, Advancements and Possibilities

**Fahad Asim, Muhammad Sameer Ashaq, Humayun Riaz, Syed Atif Raza, Abdul Raheem Malik,
Umer Farooq, Rana Khalid Mehmood, Syed Ali Faran, Muzammil Raza**

Coronaviruses are diverse, positive-natured viruses containing RNA, which belong to a family Coronaviridae, that cause various diseases in humans, birds and several other wild animals, causing gastrointestinal, nervous system and respiratory tract infections. COVID-19 pandemic started from Wuhan in December 2019. It advanced to many other countries in a couple of weeks. Coronaviruses are RNA-containing viruses that vary in size from 27 to 32 kb. They are grouped into four genera, namely, alpha, beta, gamma and delta coronavirus targeting different hosts. Previously, six types of coronaviruses were identified to affect humans and produce respiratory tract infections, i.e., HCoV-229E, HCoV-NL63, HCoV-OC43, and HKU1 that affect upper respiratory tract with mild infection while SARS-CoV and MERS-CoV affecting lower respiratory tract with severe infection, were identified leading to morbidity and mortality. The causative agent of COVID-19 is SARS-COV2. The virion is an enveloped particle. It contains a single RNA strand with 30,000 nucleotides. The most common clinical features of COVID-19 are respiratory, gastrointestinal, neurological, cardiovascular and hematological manifestations. Numerous laboratory tests have been developed for the significant diagnosis of COVID-19, such as RT-PCR, Serology, Radiography, and CT- imaging. This review also describes available treatment strategies to counter COVID-19. The previous literature was thoroughly analyzed to design this review. To deal with this pandemic, further investigation about its treatment and genera is mandatory.

Keywords: COVID-19, Pandemic, Outbreak

An Updated Review of Pharmacological, Standardization Methods and Formulation Development of Rutin

**Humayun Riaz, Syed Atif Raza, Muhammad Shahzad Aslam, Muhammad Syarhabil Ahmad,
Mohammad Ayaz Ahmad, Povydysh Maria**

Rutin is one of important bioflavonoids and biomarker that helps to increase the quality of the herbal product. It has a wide variety of pharmacological applications such as neuroinflammation, anti-hypercholesterolemic, neuroprotective, cardioprotective, wound healing, radioprotective, nephroprotective, hepatoprotective, antiplasmodial, antiarthritic, antiviral, antihypertensive, Antinociceptive, antimicrobial, gastroprotective, antiosteoporotic, anticancer, diuretic and anticonvulsant effect. The current review article helps to identify the current and future prospects of rutin. Most of the previous studies were more focus on their pharmacological activities and to understand their mechanism of action but less focus on its clinical

trial, commercial potential and formulation development. This review article documents the pharmacological activities, standardization methods and formulation development over the last six years.

Keywords: Rutin, Standardization, Pharmacology, Formulation Development

Analysis of Prescription Trend in the Treatment of Hepatitis C and The Study of Association of this Therapy Plan With the age of The Patient

Hammad Yousaf

To check out the prescription trend for the hepatitis C i.e. to analyze the combination therapy. The association of therapy plan with the age of the patient was also studied. Material and Methods: Prescriptions were collected from 97 patients diagnosed with hepatitis C from December 2016 to February 2017. Statistical calculations were carried out on these prescriptions to analyze the trend and to see the association of therapy plan with the age of the patient. In the prescription trend the combination of ribavirin 1200mg/day (400mg TID) and sofosbuvir 400mg/day was found to be the most frequent. Second frequent therapy was the combination of oral therapeutic agent (ribavirin 1200mg/day (400mg TID)) and an injectable (Peginterferonalfa 2a) whereas interferon alfa 2a were also used along with the ribavirin. There was no association found between age of the patient and the therapy plan. Oral therapy for the hepatitis C treatment is the most frequent therapy plan in the Jinnah hospital where as the second frequent therapy plan was a combination of oral and the injectable. On the other hand there is no association of age of patient with the therapy plan followed for hepatitis C.

Keywords: Hepatitis C, Therapy, Ribavirin

Anesthetic And Antibacterial Activity of Ketamine Derivatives Synthesized by Mannish Reaction

Syed Muzzammil Masaud, Ghulam Abbas Miana, Taha Nazir, Saeed Ur Rasheed Nazir, Misbah Sultana, Safia Sultana Munir, Humayun Riaz, Pervaiz A Shah, Haider Abbas Zaidi

The present study focuses on the anesthetic and antibacterial effect of ketamine which is a commonly used general anesthetic. Five derivatives of ketamine i.e. Rxn-102, Rxn-103, Rxn-113, Rx-601, and Rx-801 were prepared. The Anesthetic activity of ketamine derivatives was determined using tail immersion test and the results were compared with ketamine. For biological activity of the antimicrobial complexes, Agar plate dilution test was performed in order to evaluate the Minimum Inhibitory Concentration (MIC) of ligand and newly synthesized derivatives The antibacterial effect of ketamine was studied using six different strains of bacteria (Staphylococcus aureus, Staphylococcus epidermidis, Enterococcus faecalis, Streptococcus pyogenes, Pseudomonas aeruginosa and Escherichia coli). Ciprofloxacin was used as a control to verify the methodology. Comparison of the tail immersion and formalin tests data indicated that derivatives had comparable anesthetic activity to that of Ketamine. The antibacterial effects of all compounds were relatively lower than ciprofloxacin. The derivatives Rxns 102, 113, 103, 601 and 801

demonstrated better effects on bacterial strains of *S. aureus* and *S. epidermidis*. However, only Rxn 113 showed better results against *E. faecalis*. Ketamine not only showed profound anesthetic action but also had a strong inhibitory effect on growth of gram positive bacteria *Staphylococcus epidermidis*.

Keywords: Mannish Reaction, Anesthetic

Anti-Pseudomonas Aeruginosa Drug; To Evaluate Bactericidal Activity of Tabebuiaimpetiginosa Against Pseudomonas Aeruginosa and its Synergistic Effect with Common Anti-Pseudomonas Aeruginosa Drug

**Yasir Mehmood, Muhammad Imran Ashraf, Shazana Rana, Humayun Riaz, Syed Atif Raza,
Zia Mohy-ud-Din Khan**

In this research we assess in-vitro susceptibility of *Pseudomonas aeruginosa* (*P. aeruginosa*) using the ethanolic extract of medicinal plant *Tabebuiaimpetiginosa* (dried inner bark). To evaluate the synergistic effect of ethanolic extract of *Tabebuiaimpetiginosa* combine with ciprofloxacin In-vitro anti-*Pseudomonas aeruginosa* activities of the extracts and ciprofloxacin were confirmed, and synergism was verified for this combine extracts. Study Design: Experimental study. Period: October 2016 to February 2017. Place of Experiment: Rashid Latif Medical College, Lahore. Method: Diffusion method tests are mostly qualitative methods that are used to identify the antimicrobial activity, resistance and synergistic effect. The fresh plants inner bark was grinded and soaked in 95% ethanol for extraction. The antibacterial sensitivity of this compound against *P. aeruginosa* was assessed using the diffusion method. About 1000mg of grinded menstruum was added in 800ml of petroleum ether in a conical flask and adjust in rotary shaker at 100 rpm for 12 hours and then the final extract was filtered with 0.45µm filter membrane and centrifuged at 2000rpm for 15 minutes. The final extract was redissolved in ciprofloxacin solution (10 for bioassay analysis). Results: We concluded that the fresh ethanolic extract of *Tabebuiaimpetiginosa* with ciprofloxacin has high antibacterial potency against *P. aeruginosa* which is prominent then a single. However this was not pure extract and if it is refined then it might gives significant antibacterial activity at low concentration. There is still need to test *Tabebuiaimpetiginosa* extract for antibacterial activity and to check synergistic effect with other drugs in-vivo against *Pseudomonas aeruginosa*. Extract presented the highest synergism rate with antimicrobial drug. Conclusion: In-vitro study showed *Tabebuiaimpetiginosa* fresh inner bark extract with ciprofloxacin dilution have significant antibacterial activity against *Pseudomonas aeruginosa* with P.value<0.001. Isolates were susceptible to this combine solution with mean zone diameter of 16.15 ± 0.95 mm and no regrowth was noticed. In the present research the synergistic effect of ciprofloxacin antibiotic with *Tabebuiaimpetiginosa* ethanolic extract were observe against *Pseudomonas aeruginosa* bacteria.

Keywords: Antibacterial, Ethanolic, *Pseudomonas Aeruginosa*, *TabebuiaImpetiginosa*

Antibacterial Activity of Selected Medicinal Plants Extracts Against *Escherichia Coli* Isolates Causing Urinary Tract Infections

Muhammad Junaid Khan, Asmat Ullah, Uroosa Naseem, Inam Ullah, Nadeem Ullah, Muhammad Sameer Ashaq, Mohammad Nasar, Basit Ali Khan, Shakeel Ahmad, Muhammad Zahid, Nadia Mubarik

Antibiotic resistance was firstly observed soon after Alexander Fleming discovered penicillin in 1928. Resistance to commonly used antibiotics is one of the most threatening issues to public health across the globe. There has been an increasing demand to search for novel antimicrobial agents to combat the growing resistance. Medicinal plants are a rich source of many drugs especially antimicrobial drugs and these plants have been used from years to treat different types of diseases. The main goal of our study was evaluation of antimicrobial activity of the selected plant extracts against clinical isolates and then to compare resistance level of bacteria to commonly used antibiotics and medicinal plants. Methanolic extract was taken and dried in water bath; dried extracts were dissolved in Dimethyl Sulfoxide (DMSO) in different concentration (25mg/mL, 50mg/mL, and 100mg/mL). The zones of inhibition were measured by using agar well diffusion method. Methanolic Extracts of *Paganumharmala*, *Fogoniacretica*, *Ajugabracteosa* and *Oleaferoogenia* showed varying level of activities against *E. coli*. The results of the study shows that the antibacterial effect of selected plant extracts increased with increase in concentration. The extracts also showed activity against those isolates, which shows resistance to commonly used antibiotics. Therefore, it is suggested that antibacterial agents present in these plants should be isolated through advanced biochemical techniques such as HPLC for the evaluation of potency. These compounds may be evaluated as potential antimicrobial therapeutic agents against a wide range of human pathogens.

Keywords: Antimicrobials, *Paganumharmala*, *Fogoniacretica*, *Ajugabracteosa*, *Oleaferoogenia*, Urinary Tract Infections

Antiviral Activity of Green Silver Nanoparticles Produced Using Aqueous Buds Extract of *Syzygiumaromaticum*

Yasir Mehmood, Umar Farooq, Hammad Yousaf, Humayun Riaz, Rana Khalid Mahmood, Ahmad Nawaz, Zoya Abid, Mahpara Gondal, Nadia Shamshad Malik, Kashif Barkat, Ikrima Khalid

In the present study, we synthesized silver (Ag) nanoparticles using aqueous extracts of clove (*Syzygiumaromaticum*) (SAE). This synthesis of green silver nanoparticles (AgNP) was a novel and effectual tool against the Newcastle Viral Disease (NDV). *Syzygiumaromaticum* extract was used as reducing and stabilizing agent for synthesis of silver nanoparticles. AgNP were characterized using diversity of biophysical methods inclusive of Fourier transform infrared spectroscopy (FTIR), UV-VIS spectroscopy and Transmission electron microscopy (TEM) for morphology and size. Furthermore, XRD analysis confirmed the crystalline nature of the particles. In current investigations, the antiviral activity of clove buds silver nanoparticles was inspected in-vitro and in-ovo. Embryonated chicken eggs were used to

perform the cytotoxicity assay of the clove extract silver nanoparticles (CESN). CESN showed in vitro antiviral activity against NDV in embryonated eggs.

Keywords: Embryonated, Cytotoxic, Syzygiumaromaticum, Nanoparticles, Antiviral

Assessment of Efficacy of Multi Herbal Extracts. Product (FluAct® Syrup) against Flu Indications in Pakistani Population

Yasir Mehmood, Hafiz Umar, Hammad Yousaf, Humayun Riaz

One of the most common diseases to human is flu which direly needs appropriate therapies. Fever, throat pain and runny nose are the eminent indication of flu which is irritating to the patients. The consumption of herbal medicines is the most reliable alternative treatment all over the globe because of its compatibility within body and rare side effects when compared to synthetic chemicals. The main objective of the study was in-vitro screening and evaluation of anti-flu potential of multi extract herbal product FluAct syrup. This cross sectional study work encapsulates observation on 250 patients for treatment of flu by using a novel multi extra for above seven days of duration. After the approval from ethical committee of Rashid Latif College of Pharmacy (RLCP), a questionnaire was designed and collects information within flu patients who used FluAct syrup. An independent statistician for analysis (Microsoft excel) was used to analyze collected data. Result showed that most of the patients' cured by using FluAct syrup. Some of them did not completely cure in terms of headache (92.92%), sore throat (91.5), lethargy (92%) and temperature (97.7%). The findings showed abrupt improvement in patient health within three days by using FluAct syrup. It was reported that patients have excellent tolerance and showed willingness to adopt this therapy to treat flu. The study was used to confirm the data. It can be concluded that novel preparation of multi extracts (FluAct syrup) has effective herbal constituents to treat symptoms of flu in patients along with better tolerance and quick relief efficacy.

Keywords: Flu, Health, Extract, Herbal, Medicinal

Biochemical Dynamics and Clinical Features of Novel Corona Virus (2019-nCoV)

Taha Nazir, Saeed Ur Rashid Nazir, Misbah Sultana, Nida Taha, Humayun Riaz, Azharul Islam, Ruqaiya Rasheed Kayani, Saba Manzoor

The novel Corona Virus (nCoV-19) was initially reported in Wuhan, China during December 2019, and later people with nCoV-19 were identified in different parts of the world. Infected people had shown symptoms resembling pneumonia, but about 50% of patients were asymptomatic. The study intended to examine the data from studies on nCoV-19. The research team performed a literature review, searching relevant literature databases. The sources of data included bioRxiv, medRxiv, Google Scholar, Embase, PsychINFO, WanFang Data and PubMed. The search terms were novel Corona Virus, and nCoV-19

structure. The study took place in the main library of the University of Sargodha, Sargodha, Pakistan. The study identified 22 studies that had reported and confirmed over 2000 cases of nCoV-19 by January 26, 2020. The studies found that the virus was transmitted through respiratory droplets. The virus has two serotypes, OC43 and 229E. No specific curative therapy is available for CoVid-19. However, certain precautionary measures may potentially reduce the transmission, including washing hands, using sanitizers frequently, avoiding public gatherings, and quarantining or isolating patients. This virus has spread globally and immunocompromised individuals, and especially older individuals, are at significant risk. Community and healthcare professionals have a positive role to play in controlling the spread of the disease.

Keywords: COVID-19, Biochemical. Coronavirus, Healthcare Professions

Biocompatible Hydrogels for the Controlled Delivery of Anti-Hypertensive Agent: Development, Characterization And in Vitro Evaluation

Umar Farooq

The aim of the present exploration was to develop novel pH-sensitive cross-linked Gelatin/Polyvinyl pyrrolidone hydrogels using different ratios of both the polymers and to investigate the effect of polymers and degree of crosslinking on dynamic, equilibrium swelling and invitro release pattern of the model drug (captopril). Grafting polymerization technique was used for the preparation of these hydrogels using glutaraldehyde as crosslinking agent. These polymeric materials were then used as model systems to envisage various important characterizations like FTIR (Fourier transform infrared spectroscopy), XRD (X-ray diffraction) and scanning electron microscopy (SEM). Phosphate buffers of pH 1.2, 6.5 and 7.5 were used for swelling and invitro drug release profile investigation. Different parameters like swelling analysis, porosity, sol-gel analysis, average molecular weight between crosslinks (M_c), solvent interaction parameter (χ), volume fraction of polymer ($V_{2,s}$) and diffusion coefficient that affects the drug release behavior were also determined. Higher swelling and release was observed at lower pH values. FTIR spectra showed interaction between gelatin and polyvinyl pyrrolidone and successful formation of cross-linked structure. Pulsatile drug release study showed the controlled delivery of model drug. The release of drug occurred through non-fickian diffusion or anomalous mechanism.

Keywords: Grafting, Polymerization, Anti-Hypertensive

Co-Delivery of Curcumin and Cisplatin to Enhance Cytotoxicity of Cisplatin Using Lipid-Chitosan Hybrid Nanoparticles

Muhammad Muzamil Khan, Asadullah Madni, Nayab Tahir, Farzana Parveen, Safiullah Khan, Nasrullah Jan, Ahsan Ali, Muhammad Abdurrahim, Umar Farooq, Muhammad Imran Khan

Lipid-polymer hybrid nanoparticles (LPHNP) are suitable for co-delivery of hydrophilic and lipophilic drugs. The structural advantages of polymers and biomimetic properties of lipids enable higher encapsulation of drugs and controlled release profile. Lipid-polymer hybrid nanoparticles have been

prepared for co-delivery of curcumin and cisplatin for enhanced cytotoxicity against ovarian cancer. Chitosan, cisplatin, curcumin, Lipoid S75 were selected as structural components and ionic gelation method was used for preparation of LPHNPs. Nanoparticles were formed via ionic interaction of positively charged chitosan and negatively charged lipid. The optimized nanoparticles were of 225 nm with cationic charge. The encapsulation efficiency was greater than 80% with good drug loading. The drug release profile showed controlled release behavior of both curcumin and cisplatin simultaneously and the absence of burst release. The in vitro therapeutic efficacy and cellular association was evaluated using A2780 ovarian cell lines. To further investigate therapeutic efficacy, we developed 3D spheroids as tumor model to mimic the in vivo conditions. The cytotoxicity and uptake of co-loaded LPHNPs were evaluated on 3D spheroids and results indicated increased chemosensitization and enhanced therapeutic efficacy of co-loaded LPHNPs. Lipid-polymer hybrid nanoparticles could be a suitable platform for co-delivery of curcumin and cisplatin for enhanced cytotoxic effect on ovarian cell lines.

Keywords: Co-delivery, Chemosensitization, Curcumin, Cisplatin, Enhanced Therapeutic Output

Comparative Study of Various Super disintegrants By Preparing Fast Disintegrating Tablets of OndansetronHCl Using Different Approaches

Humayun Riaz

To perform a comparative study of various superdisintegrants for fast disintegrating tablets (FDTs) of ondansetron hydrochloride using diverse approaches were prepared. OndansetronHCl FDTs were prepared by utilizing three different methodologies engaging superdisintegrants like Kyron T-314 and crospovidone at the concentrations of 2, 4, 6, and 8%, subliming agent like camphor at the concentrations of 5, 10, and 15% and effervescence agent like citric acid and tartaric acid at the concentrations of 4, 6, 10, and 15% along with sodium bicarbonate. FTIR studies were performed to rule out the incompatibilities between different ingredients. DSC were formed to find out the chemical alterations when undergo enthalpy changes. Further PXRD were also performed. Powder blends for all twenty seven formulations were undergo through micromeritic evaluation i.e. angle of repose, bulk density, tapped density, compressibility index and Hausner's ratio. Formulated tablets were subjected to assess the post-compressional features like tablet hardness, thickness, friability, weight variation, friability, wetting time, in vitro dispersion time, in vitro dissolution time, water absorption ratio, moisture uptake studies, percentage drug contents and percentage cumulative drug release. It is quite obvious from the outcomes of multiple linear regression that increasing the concentration of superdisintegrants and subliming agents caused a significant reduction in wetting time and in vitro dispersion time. All the tablets had the hardness ranging from 3.1-3.4 kg/cm² and friability 0.46-0.65%. Increasing the concentration of camphor caused an increase in friability of tablets. Tablets prepared by sublimation approach had the shortest wetting time while those by effervescence method had longest wetting time. Water absorption ratio of all the formulations ranged from 0.82-1.55. B12 and B17 had the shortest in vitro dispersion time i.e. 19 s. Among the formulation B12 has the highest release rate. From all the inferences, it is established that by implementing a systematic approach,

ondansetronHCl FDTs could be formulated utilizing superdisintegrants in addition to sublimation method.
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Keywords: Crospovidone, Fast Disintegrating Tablets, Kyron T-314, Ondansetronhydrochlorid

Detection of Hepatitis C Virus in Blood Donors; Correlation of Hepatitis C with Intravenous Drug Use/Abuse/Addict, Type of Blood Donor and Multiple-Pricks

Muhammad Imran Ashraf, Yasir Mehmood, Hammad Yousaf, Syed Saeed Ul Hassan, Humayun Riaz, Faizan Sarwar

To Detect the Hepatitis C virus in blood donors and its correlation with intravenous drug use, type of blood donor and multiple-prick. This study was conducted on the blood donors of Services hospital Lahore-Pakistan, from November 2016 to December 2016. It included 44 patients and the main aim was detection of Hepatitis Pakistan.

Keywords: Intravenous, Pricks, Hepatitis C, Enzyme-linked Immunosorbent Assay

Determination of Risperidone in Pharmaceutical Products by UV-Spectrophotometry and RP-HPLC: Method Development and Validation

Hammad Yousaf

The present work describes a simple, reproducible, economical and rapid analytical method for the determination of Risperidone and its application in commercially available dosage form. In this respect RP-HPLC and UV/Visible Spectrophotometric methods were developed and validated for estimation of Risperidone in Pharmaceutical Formulations. In HPLC method the separation of analyte was carried by using Octadecylsilane Column C18 (4.6mm x15 cm) and mobile phase having fixed composition of Water and Acetonitrile in the ratio of 65:35 v/v was used at pH 3.0 and at a flow rate of 1.0 ml/min. Detection was carried out at 275 nm. Retention time for Risperidone was found to be 5.097 min, while in spectrophotometric method the λ max of the Risperidone was determined by performing repetitive scans of Risperidone sample solutions in the entire UV region. Only one peak was observed in all scans at wavelength of 237 nm. Standard and Sample solutions were made in 0.2 N HCl. In both the HPLC and UV/Vis. spectrophotometric methods, the mean content of Risperidone in the five different brands of tablets were within the USP limit i.e. 95%-110%. Thus it was proved that the proposed HPLC method can be successfully used for the commercially available risperidone brands. The developed methods were validated in accordance with the current International Conference on Harmonization guidelines and validated against certain parameters like Accuracy, Precision, Specificity, Linearity, Robustness, Limit of Detection (LOD) and Limit of Quantitation (LOQ).

Keywords: Risperidone, RP-HPLC, Validation, UV/Visible, USP

Determination of Sodium (2-(2, 6-dichloroanilino) phenyl) Acetic Acid in Human Plasma by Rapid and Sensitive HPLC Method and UV-Spectrophotometry

Hammad Yousaf

The objectives of current study were to develop and validate a simple, rapid, and sensitive HPLC method for determination of sodium (2-(2, 6-dichloroanilino) phenyl) acetic acid (SDPAA) in human plasma according to US-FDA guidelines and determination of SDPAA by UV-Spectrophotometry. In case of HPLC method, the mobile phase composed a mixture of acetonitrile (ACN) and phosphate buffer (pH 6.8) in a ratio of 40:60 ml (pH 3.5). A Shimadzu HPLC machine (HPLC 10 ATVP) with a column Chromolith-R high resolution RP-18 end capped and a column length of 100mm to 4.6 mm, with a UV detector was used. The peak was observed at wavelength of 281 nm. The sample was injected at a flow rate of 1.5 ml per min. The solvent run time was 8 minutes and the average retention time of the six sample observed was 5.66 minutes. In case of UV-spectrophotometric method, Shimadzu UV-1800 spectrophotometer was used. Mixture of phosphate buffer of pH 6.8:ACN was selected as a solvent for determination of SDPAA at 281 nm. Beer law was obeyed in the range of 2-22 µg/ml. The results of both UV-spectrophotometric and HPLC methods in determination SDPAA, were compared. SDPAA was detected at 281nm and eluted at 5.669 min (without plasma) while the samples extracted from the plasma eluted at 5.667 min. The average % RSD was less than 2%. Accuracy was confirmed with the recovery studies and by three test assays. Accuracy was tested at three %age level that is within 95–99%. The linear range of 0.5-20 µg/ml (for HPLC) showed the regression coefficient (R^2) 0.999 and linear range of 2-22 µg/ml (for UV method) showed the regression coefficient (R^2) 0.998 which were in acceptable range. The developed HPLC method was simple, rapid, reliable, specific and sensitive with ability to determine drug concentrations from human plasma.

Keywords: Acetic Acid, Human Plasma, HPLC

Developing Methods for the Evaluation of Isotonicity of Parenteral Products

Imran Anwar, Muhammad Amer, Saeedu Nazir, Muhammad Adnan, Fizza Bukhari, Misbah Sultana, Humayun Riaz, Taha Nazir

to reduce side effects for the administration of safe infusions. There were three methods namely cryoscopic method, sodium equivalent method and White Vincent method used for isotonicity determination during preformulation studies and manufacturing. But there was no method to evaluate the status of isotonicity of finished parenteral products. Therefore, two methods namely egg membrane method and complete blood count or CBC method were developed and tested to evaluate the status of isotonicity of parenteral products which have been marketed in their finished form. Ten parenteral intravenous large volume infusions were taken randomly as samples from the market and were tested by each of the above mentioned two methods. All the ten samples were found hypotonic by the egg membrane method. But this method was found

suitable only for the large volume parenteral products. Evaluation of the isotonicity of small volume parenterals required maximum number of ampoules or vials so that egg completely sunk in the solution. This method was suitable for aqueous preparations. Same ten samples were evaluated to test the second method. The solutions of the ten samples were found to be hypotonic.

Keywords: Isotonicity, Hypotonic, Egg Membrane Method, Complete Blood Count, Osmotic Pressure, Parenteral Product

Development and Evaluation of Mucoadhesivebuccal Tablet Containing Metronidazole for the Treatment of Periodontitis and Gingivitis

Sobia Razzaq, Sana Hanif, Muhammad Ali Syed, Javed Iqbal, Syed Saeed ul Hassan, Syed Atif Raza, Humayun Riaz Farah Abid

The current study was designed to evaluate mucoadhesivebuccal tablet containing metronidazole (MTZ) for local action aided by Hydroxypropylmethylcellulose K4M (HPMC) and Carbopol 940® (CP) as mucoadhesive polymers with other ingredients like sodium starch glycolate (SSG), polyvinyl pyrrolidone K30 (PVP) as disintegrant and binders respectively. Formulations (F1-F8) were prepared by direct compression method and characterized for different physicochemical parameters. Results showed that the average weight and friability were within USP limits. Maximum mucoadhesive time was observed for F2 (14 hr) containing moderate amount of HPMC and CP used in the study. Up most mucoadhesive strength value was observed with F3 containing highest amount of HPMC used. Results indicated that high amount of HPMC was linked with the moderate to higher mucoadhesive strength and time. Maximum swelling index was observed in F7 (191.3%). Only F1-F3 showed complete in vitro MTZ release within 3 hr. Formulations containing PVP released MTZ incompletely over time while SSG released earlier. Formulation F1 was considered best in terms of MTZ release (100.5%) with diffusion based Korsmeyer-Peppas release kinetics. Therefore, MTZ exhibiting best physicochemical characters in mucoadhesivebuccal tablet was found in F1 containing HPMC and CP in amounts of 37.5 mg and 25 mg, respectively, for local action.

Keywords: Carbopol Tablet, HPMC k4M, Metronidazole Buccal Tablet, Mucoadhesivebuccal Tablet, Korsmeyer-Peppas Release.

Development, Characterization and Evaluation of Anti-Fungal Activity of Miconazole Based Nanogel Prepared from Biodegradable Polymer

Umar Farooq, Akhtar Rasul, Muhammed Sher, Muhammad Imran Qadir, Imran Nazir, Yasir Mehmood, Humayun Riaz, Pervaiz Akhtar Shah, Qazi Adnan Jamil, Barkat A Khan

Topical candidiasis is a known skin fungal infection which is usually treated by conventional dosage forms such as cream, gel, emulgel which are having numerous adverse effects on skin. To overcome such disadvantages, different novel drug delivery systems have been considered. Polymer based nano-particulate

systems have shown good skin penetration after topical application. Therefore, in the present study the main focus was on the pathology, pathogenesis, and consequently topical treatment of candidiasis. Nanogel containing miconazole have been prepared from the natural polymers i.e. gelatin and chitosan. The nanogel of miconazole (100 mg) nitrate was formulated by modified emulsification-diffusion technique and characterized for different parameters. From all the seven nanogel formulations named as F1 to F7, F1 (Gelatin and Chitosan in the percentage of 82.85 and 17.15 respectively) have been selected as model formulations. The reason behind that was as per ICH stability guideline, the formulations F1 was found optimum and stable. Miconazolenanogel formulations F1 also showed the maximum release i.e. 78 % approximately. XRD showed the formulated nanogel was in crystalline shape. In summary, the miconazolenanogel drug delivery systems have two main advantages i.e. they are topical preparation as well as nano sized. It can be postulated that nanogel may be a best approach to treat the fungal skin diseases.

Keyword: Gelatin, Nanogel, Miconazole, Anti-Fungal, Topical

Emerging Immunomodulation Technologies May Potentially Improve the Clinical and Pharmaceutical Health Care

Taha Nazir, Saeed Ur Rashid Nazir, Misbah Sultana, Humayun Riaz, Muhammad Naeem Qaisar, Nida Taha, Muhammad Amer, Azharul Islam

The innovative immunomodulation technologies are excellent tools to synthesis the novel antibodies. The conventional methods are potentially replaced by more précised techniques to obtain the desired antibodies. Particularly the hybridoma technique used to produce the antibodies against targeted antigens. The pathogenic microorganisms, autoimmune agents and other malignant entities can be controlled by using these innovative immunomodules. Moreover, the abundant powerful toxic substances can be handled with such monoclonal antibodies. These analytical acculturated or chimeric murine antibodies have a couple of imperatives and complexities. In order to vanquish these problems, late advancements in inherited building procedures and phage indicate framework have conceded the making of exceedingly recombinant antibodies that are specific. Moreover, highly specified recombinant antibodies are produced by the recent advancements in genetic engineering procedures and phage display procedure. The antibodies chase for novel remedial medications outfitted with upgraded immune protective capacities such as drawing in invulnerable effector capacities, viable advancement of combination proteins, productive tumor tissue infiltration and high-partiality antibodies coordinated against targets. Propelled neutralizer building systems have broad practices in the fields of diagnostics, biotechnology, immunology, and helpful prescriptions. Notwithstanding, there is restricted information with respect to dynamic neutralizer advancement approaches. Consequently, our ability to comprehend the customary polyclonal and monoclonal antibodies and advanced immunizer designing strategies has widened the clinical use imaginative counter acting agents.

Keywords: Immunomodulation, Antibody-Dependent, Cell-Mediated Cytotoxicity, Monoclonal Antibodies, Polyclonal Antibodies, Healthier Future

Enhanced Gastric Retention and Drug Release Via Development of Novel Floating Microspheres Based on Eudragit E100 and Polycaprolactone: Synthesis and in Vitro Evaluation

Umar Farooq

Eudragit E 100 and polycaprolactone (PCL) floating microspheres for enhanced gastric retention and drug release were successfully prepared by oil in water solvent evaporation method. Metronidazole benzoate, an anti-protozoal drug, was used as a model drug. Polyvinyl alcohol was used as an emulsifier. The prepared microspheres were observed for % recovery, % degree of hydration, % water uptake, % drug loading, % buoyancy and % drug release. The physico-chemical properties of the microspheres were studied by calculating encapsulation efficiency of microspheres and drug release kinetics. Drug release characteristics of microspheres were studied in simulated gastric fluid and simulated intestinal fluid i.e., at pH 1.2 and 7.4 respectively. Fourier transform infrared spectroscopy was used to reveal the chemical interaction between drug and polymers. Scanning electron microscopy was conducted to study the morphology of the synthesized microspheres.

Keywords: Polycaprolactone, Microspheres, Gastric

Estimates of The Severity of Covid-19: A Comparison of Pakistan with Other Developed Countries

Yasir Mehmood, Zafar Latif Awan, Adnan Afzal, Muhammad Saleem Akhtar, Fawad Hussain, Muhammad Imran Ashraf, Hammad Yousaf

The number of confirmed cases of COVID-affected patients are 1,123,000 and counting, while more than 59,000 corroborated mortalities have occurred around the globe, as depicted by the data gathered through Johns Hopkins University. More than 228,000 people have reportedly recovered from COVID-19 till April 4 2020. Italy has the second highest deaths of COVID-19 in the world. There is dire need to evaluate the pattern of COVID-19 in Pakistan and to compare it with other developed countries. World Health Organization has developed website to provide latest data in form of new reported cases, mortality and recoveries. In Pakistan, mortality rate was found less than other developed countries and this hypothesis may be wrong that Pakistan neither will not be effected with virus due to climate conditions. The presented study had two objectives. The first was to describe the latest situation of COVID-19 in Pakistan and other developed countries. Second objective was to determine the latest situation about mortality rate in Pakistan and other developed countries. Comparative data was sketched and presented in graphs for 5 countries including Pakistan. All the data was obtained from WHO the websites and Pakistan government officials websites. Data was collected from Jan-2020 to 4 April2020.

Keywords: Pandemic, Countries, Comparison, Mortality, Prevent.

Estimation of Caffeine Concentration in Decaffeinated Coffee and Tea Available in Pakistan

Muhammad Abbas Sadiq, Effat Zohra, Muhammad Adnan Jamil, Muhammad Wasim, Humayun Riaz, Syed Atif Raza, Muhammad Shahzad Aslam, Shahzad Hussain, Osama Javed, Muhammad Ayaz Ahmad

Tea is an agricultural product of the leaves, tea buds and inter-nodes of the *Camellia sinensis* plant. This study was done to estimate caffeine in different types of decaffeinated tea and coffee brands available in Pakistan's market by High Performance Liquid Chromatography. In this study standard calibration curve of caffeine produced a straight line ($R^2 = 0.999$). The 0.2% w/v PQC was used and showed retention time of caffeine at 8.665 minutes and IS at 5.337. It was estimated that 0.1807% caffeine present in the positive quality control which provide the mean of the reliability of the performance of the procedure. Total of six brands comprising of 30 decaffeinated samples were selected for the estimation of caffeine. Among all only four (ABS 3, 24, 27 and 28) produced no peak of analyte representing complete decaffeinated product. Possibly, limited sensitivity of instrument may have produced these results but, these are the brands that contain much lesser amount of caffeine as compare to the other brands. Among all 30 decaffeinated samples only (ABS 19) has observed the maximum 0.03% of caffeine and the minimum quantity of caffeine 0.0001% in one sample (ABS 23) was estimated.

Keywords: Caffeine, Coffee, Tea, Pakistan, High Performance Liquid Chromatography

Evaluation of Phytochemical, Anti-Oxidant and Cardiac Depressant Effect of *Rumex dentatus* by Using Langendorff's Isolated Heart Apparatus.

Alyami, Bandar Ali, Akhtar, Suneela; Alamgeer, Ahmad, Taseer, Alqarni, Ali Omar, Alqahtani, Yahya Saeed, Mahnashi, Mater Hussen, Qasim, Sumera, Irfan, Hafiz Muhammad, Akram, Muhammad Riaz, Humayun, Anwar, Rukhsana

Rumex dentatus has been used traditionally for ailment of cardiovascular diseases. The aim of the present study was to assess cardiovascular effects in isolated perfused rabbit heart. Aqueous and n-butanolic fractions were assessed for their effect on perfusion pressure (PP), force of contraction (FC) and heart rate (HR) of rabbit heart using Langendorff's method. The possible mechanisms of action of extracts/fraction were assessed with and without application of different agonist/antagonist. Phytochemical, toxicity and anti-oxidant activities were also determined. Both extracts at 1mg/mL dose produced a highly significant decrease in FC and HR but PP remained unchanged. Moreover, aqueous fraction of *Rumex dentatus* at 0.001mg/mL dose produced a highly significant decrease in FC and HR but no significant change in PP was observed. Atropine 10⁻⁵ M did not inhibit the cardiac depressant response of both fractions. Furthermore, both fractions blocked the positive inotropic and chronotropic effects of adrenaline and calcium chloride. Phytochemical studies have shown the presence of some phytochemicals. Acute and sub-chronic toxicity studies demonstrated that test extracts are safe and produced no significant changes in haematological and biochemical parameters. Crude extract showed significant antioxidant activity like ascorbic acid. This study revealed that this plant have good cardiac depressant effect.

Keywords: Phytochemical, Anti-oxidant, Langendorff's

Fabrication of HPMC and Hibiscus Esculentus (okra) Gum Based Microspheres Loaded with Sulfasalazine and Dexamethasone

Yasir Mehmood, Humayun Riaz, Kashif Barkat, Hammad Yousaf, Abdul Raheem Mali, Syed Atif Raza

The study was aimed to synthesize and characterize effective sustained release polymeric microspheres of sulfasalazine and dexamethasone by using okra gum and hydroxypropyl methylcellulose (HPMC). The solvent extraction technique was used to synthesize sulfasalazine and dexamethasone loaded okra gum/HPMC microspheres. Pods of Hibiscus esculentus was used to extract okra gum. FTIR, DSC and SEM studies were performed. Kinetic modeling were applied on dissolution release data to evaluate release pattern of drugs from prepared formulations. No interaction was observed between drug and polymers by FTIR study. Molecular dispersion of sulfasalazine and dexamethasone was observed by DSC studies. SEM analysis showed acceptable morphology of microsphere. Dissolution studies showed that drug release was retarded up to 8 h when Okra gum and HPMC were used in combination but contrarily, HPMC and Okra gum showed early release of drug when both were used alone. Okra gum/HPMC microspheres of sulfasalazine and dexamethasone were prepared triumphantly by solvent evaporation method. Recovery, entrapment effectiveness hydration and drug loading of microspheres, influenced by the concentrations of Okra gum/HPMC.

Keywords: Fabrication, Microspheres, Dexamethasone

Formulation Development Using Different Natural and Semi Synthetic Polymers, in Vitro Evaluation of Colon Targeted Sulfasalazine Tablets for Ulcerative Colitis

Yasir Mehmood, Hammad Yousaf, Umer Farooq, Humayun Riaz, Noviyara Saleem, Muhammad Billal Hassan, Rana Khalid Mahmood, Abdul Raheem Malik, Muhammad Sameer Ashaq, Abdulmannan Kashif, Tehseen Zahra, Syed Atif Raza

In this present research work, the aim was to develop colonic targeted matrix tablets of Sulfasalazine for colonitis treatment. Matrix tablets of Sulfasalazine were prepared using microsomal enzyme dependent polymers by wet granulation compression method. The colon targeted tablets were prepared using various polymers in combination. All pharmacopeia tests were performed to ensure its specifications. The colon-targeting tablets prepared via wet granulation method. Different polymers used in controlled release formulation for colon. The compatibility was assessed using FT-IR, XRD and DSC studies for pure drug, polymers and their physical mixtures. The physicochemical properties of all the prepared matrix tablets batches were found to be in limits. The drug content percentage in the optimized formulation H was found to be $99.24 \pm 0.10\%$. Formulations H was containing 2.8% of pectin and 5.7% of HPMC K15M and 11.5% Guar gum and release of drug is about 4% in basic medium (6.8pH) for 3 hrs. This was acceptable range for colon targeting drugs in 3 hrs using medium of 6.8pH. The study concluded that that colon targeted

tablets can target the colon and extend the release of sulfasalazine in colon for many hours and also ensure enhanced bioavailability.

Keywords: Sulfasalazine, Colon, Targeted, Bioavailability.

Hypertension-Related Knowledge, Medication Adherence and Health-Related Quality of Life (HRQoL) Among Hypertensive Patients in Islamabad, Pakistan

Atif Raza, Humayun Riaz

To determine knowledge regarding hypertension, adherence to medication and Health Related Quality of Life (HRQoL), and their associations in hypertensive patients in Pakistan. A cross-sectional study was conducted among 384 hypertensive patients attending a tertiary health care public sector hospital in Islamabad, Pakistan. Data were collected using knowledge questionnaire regarding hypertension, Morisky Medication Adherence Scale, and EuroQol (EQ-5D) scale. The mean systolic and diastolic blood pressures of the 384 patients were 140.39 ± 15.485 and 88.74 ± 10.683 mmHg, respectively. The coefficient of correlation between knowledge regarding hypertension and adherence was 0.638 ($p < 0.001$), showing a positive association. The correlation coefficient between knowledge and HRQoL was 0.709 ($p < 0.001$), suggesting a good association. The correlation coefficient between adherence to medication and HRQoL was 0.545 ($p < 0.001$), which indicated a positive correlation. These results indicate that there are statistically significant associations between hypertension knowledge and HRQoL, hypertension knowledge and medication adherence, and between adherence and HRQoL in the hypertensive patients studied.

Keywords: Hypertension, Knowledge, Medication Adherence, Blood Pressure

Impact of Pharmacist's Intervention on Disease Related Knowledge, Medications Adherence, HRQoL and Control of Blood Pressure Among Hypertensive Patients.

Amer, Muhammad, Rahman, Nisar Ur, Rashid Nazir, Saeed ur Raza, Atif; Riaz, Humayun, Sultana, Misbah, Sadeeqa, Saleha

The present study was aimed to evaluate the effect of educational intervention provided to the patients of hypertension through pharmacist with the goal to improve knowledge about hypertension, adherence to prescribed medicines, blood pressure control and HRQoL (Health Related Quality of Life). A total of 384 patients were assigned randomly into 2 groups including intervention and control groups each having 192 patients. Urdu versions of knowledge questionnaire regarding hypertension, medication adherence scale (MMAS-U) by Morisky and EuroQol scale (EQ-5D) were utilized. Each patient's blood pressure was measured. After educational intervention, an increase was found in mean knowledge score about

hypertension (18.18 ± 4.00), adherence score (5.89 ± 1.90), HRQoL score (0.73 ± 0.12) and Visual Analogue Scale (VAS) score (69.39 ± 5.90) among the IG. The blood pressure control also improved and lower systolic (131.81 ± 10.98 mmHg) and diastolic blood pressures (83.75 ± 6.21 mmHg) were observed among the patients of IG. This study showed that educational programs are useful for patients in increasing patient's levels of knowledge about hypertension, improving adherence to prescribed medication and enhancing blood pressure control. This increase is in turn accountable to improve HRQoL.

Keywords: HRQoL, Hypertensive, Blood Pressure

In-Vivo and in-Vitro Studies to Investigate the Anti-Diabetic Mechanisms Underlying Moringaoleifera Leaf Ethanol Extracts

Hafiz Muhammad Irfan, Mohd Zaini Asmawi, Nurzalina Abdul Karim Khan, Alamgeer, Sajid Bashir, Zahid Rasool, Shafiq-ur-Rehman, Humayun Riaz

Obesity, insulin resistance and cardiovascular complications are endemic global health diseases due to ingestion of high carbohydrate. To prevent such health complications, this study was conducted to report another appealing option that can prevent postprandial hyperglycemia. For in vivo studies, 95% ethanol (v/v) extract of Moringaoleifera and its butanol fraction were given orally once a day for 14-days to streptozotocin-induced diabetic rats. The blood samples were collected to determine plasma insulin, monocyte chemoattractant protein-1 (MCP-1) and glucose-6-phosphate (G6P) level. α -amylase and α -glucosidase enzyme kinetics against fixed concentrations of samples ($100 \mu\text{g/mL}$) was conducted. The M. oleifera ethanol (v/v) extract at 1000 and 500 mg/kg and butanol fraction at 500 mg/kg dose raised the level of G6P and lowered MCP-1 level significantly but failed to increase the level of insulin significantly. The results also indicated non-competitive inhibition of α -amylase, α -glucosidase and a significant increase in glucose uptake by rectus abdominus muscle.

Keywords: α -Amylase, α -Glycosidase, Glucose-6-phosphate, Monocyte Chemo Attractant Protein-1, Moringaoleifera, Skeletal muscle

Indigenous Medicinal Plants of Pakistan Used to Treat Skin Diseases: A Review

Alamgeer, Amber Sharif, Hira Asif, Waqas Younis, Humayun Riaz, Ishfaq Ali Bukhari, Asaad Mohamed Assiri

Plants are providing reliable therapy since time immemorial. Pakistan has a great diversity in medicinal flora and people use these ethno-medicines to deal with many skin problems. This review explores the fundamental knowledge on various dermatological properties of medicinal plants of Pakistan and is aimed to provide a baseline for the discovery of new plants having activities against skin issues. A total of 244 published articles were studied using different research engines like PubMed, Google, Google-scholar and science direct. Review of literature revealed ethno-pharmacological use of 545 plant species, belonging to

118 families and 355 genera, to combat various skin ailments. Out of these, ten most commonly used plant species belonging to ten different families are documented in this review. It was also found out that ethno-medicines are prepared using various parts of the plants including leaves (28.32%), whole plant and roots 13.17% and 10.97% respectively, in the form of powder (23.5%) and paste (22.75%). A total of 13 endangered plant species and ten commercially important plants were recorded. Medicinal plants of Pakistan have therapeutic effects against several skin problems; however most of medicinal plants are still not evaluated scientifically to support their ethno-pharmacological claim on skin. Dermatological pathogens are recommended to study. Further, the conservational programs should be established for endangered species.

Keywords: Medicinal Plants, Skin Disease, Indigenous

Medicinal Plants and Nonsteroidal Anti-inflammatory Drugs (NSAIDs) in Treatment of Arthritis: A Literature Review

Rasheed Kayani R, Shamim R, Sultana Munir S, Sultana M, Nazir SUR, Riaz H, Nazir T, Maaz Ali M, Islam A

Arthritis is an inflammatory disease of diarthrodial joints and is associated with swollen inflamed joints, disruption of joints, and loss of integrity of articular cartilage and synovial joints. The current review intended to examine the data on the epidemiology, causes, clinical diagnosis, and prevention and control of different types of arthritis and on the use of medicinal plants in gouty arthritis. The research team performed a literature review, searching relevant literature databases, including bioRxiv, medRxiv, Google Scholar, Embase, PsychINFO, and PubMed. The search terms were arthritis, diarthrodial joints, use of medicinal plants in gouty arthritis, and synovial joints. The study took place in the main library of the University of Sargodha in Sargodha, Pakistan. The research team identified 135 studies, and eventually 92 unique academic publications were included in the analysis. Arthritis can develop and progress in any musculoskeletal joint, and most commonly occurs in knees, hips, shoulders, and hands. Major risk factors for arthritis include age, obesity, trauma, other diseases, and smoking. Arthritis is classified into various types, including rheumatoid arthritis (RA), osteoarthritis (OA), gouty arthritis, septic arthritis, and psoriatic arthritis (PsA). RA and OA are the most common types worldwide. RA is an autoimmune disease in which the body's immune cells attack the joints. OA develops due to damage of cartilage, tissues, and joints due to age, obesity, or stress on joints. Gouty arthritis develops due to hyperuricemia; deposits of monosodium urate crystals can lead to gouty arthritis. Septic arthritis occurs due to a microbial infection in synovial joints because in synovial joints the basement membrane is absent. PsA develops due to the psoriasis-skin disease. The current review showed that different types of arthritis have different causes and pathogenesis. Pain in joints is a major and common symptom in all types of arthritis. Arthritis is managed pharmacologically and nonpharmacologically. Treatment is different for each class of arthritis according to its cause and symptoms.

Keywords: NSAIDs, Arthritis, Inflammatory

Method Development For 4-Hydroxy-2-Methyl-N-(5-Methyl-2-Thiazolyl)-2h-1,2- Benzothiazine-3-Carboxamide-1,1-Dioxide by Reverse Phase Hplc: New Analytical Technique

Husnul Maab, Hammad Yousaf, Syed Saeedul Hassan, Umar Farooq

In this study, development of a new analytical method for the evaluation of 4-Hydroxy-2- methyl-N-(5-methyl-2-thiazolyl)-2H-1,2-benzothiazine-3-carboxamide-1,1-dioxide (Meloxicam) by reverse phase HPLC was carried out. The basic aim of this research was to develop and validate a simple, precise, accurate and sensitive method for qualitative and quantitative analysis of Meloxicam in pharmaceutical raw material and its dosage forms. The existing reported method (BP) for the analysis of Meloxicam is potentiometric method which is an old, lengthy and tedious method. In the new method of reverse phase HPLC, C18 column was used while the mobile phase was acetonitrile and methanol (70:30). The flow rate of mobile phase was 0.6ml/min and retention time was found to be 1.5min. Separately equal volume of standard solution and sample solutions in HPLC vials were injected in auto sampler compartment of HPLC in six replicates. Chromatogram and peak areas of Meloxicam in standard and sample solutions of different concentrations were recorded. This method was later validated in different ways by which the calibration curve proved to be linear with linearity coefficient of 0.999 over the range of 100 to 600ppm. The precision was equivalent to 0.0003%. The LOD and LOQ were 0.0003ug/ml and 0.001ug/ml respectively. The system also showed accuracy over the range of 95 to 99%. Conclusion: Hence, this method proved to be an alternative to the existing reported method of potentiometric titration because the new method showed accuracy, reproducibility and sensitivity.

Key word: 4-Hydroxy-2-methyl-N-(5-methyl-2-thiazolyl)-2H-1,2-Benzothiazine-3-Carboxamide-1,1- Dioxide (Meloxicam), Acetonitrile, methanol, HPLC.

Nanoemulsions as Novel Nanocarriers for Drug Delivery Across the Skin: In-Vitro, In-Vivo Evaluation of Miconazolenanoemulsions for Treatment of Candidiasis Albicans

Umar Farooq, Akhtar Rasul, Muhammad Zafarullah, Ghulam Abbas, Maria Rasool, Farman Ali, Shabbir Ahmed, Zeeshan Javaid, Zoya Abid, Humayun Riaz, Rana Khalid Mahmood Arshad, Shayan Maryam, Naseem Anna, Kanwal Asif

In the current research, attempt is made to fabricate a nanoemulsion (NE) containing an antifungal agent. The prepared formulation has been expected to enhance skin penetration. It is also studied for in vitro drug release and toxicity assessment. Spontaneous titration method was used for preparation of NE. Prepared NE were characterized for their charge, size, morphology, rheological behaviour, drug release profile, skin permeability. The drug permeation and skin irritation were investigated. The in vitro antifungal activity was inspected using the well agar diffusion method. Miconazole NE showed good penetration in the skin as

compared to marketed products. SEM showed semispherical shapes of the droplets. Zeta potential and zeta sizer showed that size was in nano ranges having positive charge.

Keywords: Nanoemulsion, Gelatin, Miconazole, Topical Delivery System

Nootropic Evaluation of Methanolic Bark Extract of *Murrayakoenigii* (L.) Spreng Against Scopolamine and Diazepam Induced Memory Dysfunction in Mice

Mehreen Siddique, Humaira Majeed Khan, Kanwal Asif, Farah Sayed, Humayun Riaz, Muhammad Sameer Ashaq, Abdul Raheem Malik, Fahad Asim, Muzammil Raza Sanaullah Umair

This study is aimed to investigate the nootropic potential of different doses (400, 500 and 600 mg/kg) of methanolic bark extract of *Murrayakoenigii* (L.) Spreng. in healthy or amnesic mice induced by scopolamine and diazepam. The passive avoidance paradigm (PAP) and elevated plus maze (EPM) were used as behavioral models for memory assessment. Mice were subjected to scopolamine and diazepam induced amnesic models. Different concentrations of methanolic bark extracts of *M. koenigii* were administered orally for 15 days. Post behavioral analysis acetylcholine content was determined in brain extract. Preliminary qualitative phytochemical study of methanolic bark extract of *M. koenigii* expressed the existence of alkaloids, flavonoids, saponins, steroids, phenols, glycosides and tannins. There were significantly decrease in transfer latencies on EPM and increase in step down latencies on PAP. Additionally, 600 mg/kg dose significantly ($p < 0.001$) attenuated the amnesic effect induced by scopolamine and diazepam. The 500 and 600 mg/kg concentrations of methanolic bark extract significantly ($p < 0.05$) enhanced the role of acetylcholine in memory improvement. The carbazole alkaloids present in *M. koenigii* crude bark extract have significant nootropic effect as it increases acetylcholine content in brain at a dose of 500 and 600 mg/kg concentrations. Thus, the methanolic extract of *M. koenigii* bark may prove to be an effective nootropic agent in management of Alzheimer's disease having its underlying mechanisms that involves increasing cholinergic transmission.

Keywords: *Murrayakoenigii* (L.) Spreng, Nootropic Activity, Passive Avoidance, Paradigm Model, Elevated Plus Maze Model, Memory Dysfunction

Novel Dynamics of Virus-Reconciled Drug Activation in Cytomegalo Virus Infection

Taha Nazir, Saeed Ur Rashid Nazir, Misbah Sultana, Humayun Riaz, Muhammad Naem Qaisar, Nida Taha, Muhammad Amer, Ruqaiya Rasheed Kayani

Herpesviruses are huge DNA viruses which are basis of extensive range of ailments starting from the respiratory illness to cancer. All of them share the power to determine a life-long, latent infection, parting the infested individual at continuous threat of reactivation and consequent illness. Humancytomegalovirus (HCMV) is opportunistic deoxyribonucleic acid virus that infects a majority of the adult population

worldwide, and is out and away the foremost necessary and most complicated of all human herpesviruses. The HCMV infects a broad vary of cell varieties throughout natural infection. Animal tissue cells would be the first cell kind to become infected and sure transfer the virus to monocytes that square measure thought to be particularly necessary for the dissemination of HCMV throughout the body. Cytomegalovirus is a herpes virus; it is present in various body fluids when it infects the host. Cytomegalovirus can cause complications in transplants, it can cause severe infections in patients that are immunocompromised, it is also a major cause of hearing impairment and motor defects in new borns, there is no vaccine yet available to treat this infection.

Keywords: Herpes Viruses, Humancytomegalovirus, Infection, Activation

Optimization of Empagliflozin Immediate Release Tablets (10 mg) Using Central Composite Rotatable Design with Response Surface Methodology

Anas M. Hanif, Rabia Bushra, Wajiha Iffat, Sana Ghayas, Shaheen Perveen, Humayun Riaz, Shazia Alam, Syed Imran Ali, Nahlah Elkudssiah Ismail, Zeb-un-Nisa

Empagliflozin is a selective inhibitor of sodium glucose co-transporter II, given as mono therapy or an add-on treatment to reduce the glycated hemoglobin levels in type 2 diabetes. This work deals with designing, formulating and optimizing empagliflozin (10mg) immediate release (IR) tablets by direct compression technique using different excipients. Through central composite rotatable design (CCRD), total nine formulations (EF1-EF9) were generated by changing the composition of binder avicel PH 102® (X1) and superdisintegrantacdisol® (X2). Formulation runs with in suitable weight range and powder properties were subjected to compression. The influence of interaction of excipients on friability (Y1), hardness (Y2) and disintegration (Y3) were analyzed by fitting the polynomial quadratic model with response surface methodology (RSM). Trials EF2, EF7, EF8 and EF9 exhibited acceptable tablet attributes upon physico-chemical testing. Different dissolution models were applied to observe the in vitro drug release pattern in phosphate buffer of pH 6.8. The cumulative drug release of IR tablet batches followed the Weibull kinetics with regression coefficient (r^2) values of 0.983-0.992. Empagliflozin trials were exposed to accelerated storage conditions (40±2°C/ 75±5% RH) for stability testing. Shelf life period of exposed formulations were computed in range of 22 to 25 months. Keeping in view of the results, it is concluded that the employed technique of preparation and optimization are observed to be excellent for developing immediate release empagliflozin (10mg) tablets.

Keywords: Empagliflozin, Optimization, Direct Compression, Response Surface Methodology, Central Composite Rotatable Design

Pattern of Inappropriate Antibiotic Use Among Hospitalized Patients in Pakistan: A Longitudinal Surveillance and Implications

Zikria Saleem, Hamid Saeed, Mohamed Azmi Hassali, Brian Godman, Usama Asif, Mahrukh Yousaf, Zakiuddin Ahmed, Humayun Riaz, Syed Atif Raza

The inappropriate use of antibiotics in hospitals increases resistance, morbidity, and mortality. Little is

currently known about appropriate antibiotic use among hospitals in Lahore, the capital city of Pakistan. Longitudinal surveillance was conducted over a period of 2 months among hospitals in Lahore, Pakistan. Antibiotic treatment was considered inappropriate on the basis of a wrong dosage regimen, wrong indication, or both based on the British National Formulary. A total of 2022 antibiotics were given to 1185 patients. Out of the total prescribed, approximately two-thirds of the study population (70.3%) had at least one inappropriate antimicrobial. Overall, 27.2% of patients had respiratory tract infections, and out of these, 62.8% were considered as having inappropriate therapy. Cephalosporins were extensively prescribed among patients, and in many cases, this was inappropriate (67.2%). Penicillins were given to 283 patients, out of which 201 (71.0%) were prescribed for either the wrong indication or dosage or both. Significant variations were also observed regarding inappropriate prescribing for several antimicrobials including the carbapenems (70.9%), aminoglycosides (35.8%), fluoroquinolones (64.2%), macrolides (74.6%) and other antibacterials (73.1%). Educational interventions, institutional guidelines, and antimicrobial stewardship programs need to be developed to enhance future appropriate antimicrobial use in hospitals in Pakistan. Policies by healthcare and Government officials are also needed to minimize inappropriate antibiotic use.

Keywords: Appropriateness, Antibiotics, Hospitals, Prescribing, Pakistan

Potential Threat of New Delhi Metallo-Beta-Lactamase-1 Enzyme, Multi Drug Resistant and Extensive Drug Resistant (XDR) to achieve the Millennium Development Goals (MGD's) in South East Asian Countries

Taha Nazir, Saeed Ur Rashid Nazir, Azharul Islam, Misbah Sultana, Humayun Riaz, Nida Taha

The rational treatment and standard clinical care have key value in public health. That helps the health care professionals assure successful treatment and minimize the resistant against antibiotics. Whereas, the drug compliance, therapeutical monitoring and pharmacovigilance are main factors to determine the quality of health care system. Hence; the developing parts of the world especially need attention to establish the standards to achieve the Millennium Development Goals (MDG's) of World Health Organization (WHO). Although, the unnecessary use of drugs, irrational pharmacotherapy and wrong medication continuously generating resistance strains Indian subcontinent. However, the identification and characterization of resistant superbugs of New Delhi Metallo-beta-lactamase-1 (NDM-1) enzyme resistant, Multi Drug Resistant (MDR) and Extensive Drug Resistant (XDR), Carbapenem-Resistant Enterobacteriaceae (CRE), Methicillin Resistant Staphylococcus aureus (MRSA) and Vancomycin-Resistant Enterococcus (VRE) strains have posed a potential threats for public health. Moreover, these resistant superbugs may be harbored to other parts of the world. Thus, we need an effective strategy to enforce the health standards and promulgated the drug jurisprudence to improve the overall pharmacotherapy practice. That may potentially assure the standard clinical and pharmaceutical care to achieve the Millennium Development Goals (MDGs). Additionally, an appropriate intervention of Drug Regulatory Authorities, Provincial Health Departments and professional bodies needed to improve the public health care system. Especially, the pharmacy professional and drug experts are needed to deliver their exact scientific and professional role of prescription reviewing, patient counseling, therapeutically drug monitoring, biosafety, clinical services and

pharmaceutical care instead of current irrelevant, non-technical, administrative and clerical work. That will definitely help to minimize the chances of development of resistance against antibiotics and potential health hazards.

Keywords: Superbugs, Drug Resistance, NMD-1, MDR, XDR, MGD's, Pharmaceutical Care, Clinical Pharmacy, Millennium Development Goals

Preparation and in Vitro Characterization of Polyvinylpyrrolidone-Poloxamer Polymeric Synergy for Oral Drug Delivery

Saman Ali, Abid Mehmood Yousaf, Syed Atif Raza, Yasser Shahzad, Ikram Ullah Khan, Tariq Mahmood, Talib Hussain, Mobina Manzoor, Humayun Riaz, Muhammad Jamshaid

The prospect of carrying out this study was to prepare and characterize an optimized polyvinylpyrrolidone (PVP)-poloxamer (PLX) hydrophilic polymeric blend for improved solubility of poorly water-soluble drugs. Levodropropizine (LDP) was used as a model drug in this research. Several LDP-loaded PVP-PLX formulations were fabricated via the solvent evaporation method, and tested for solubility and dissolution of LDP in water. Other physicochemical characterization was accomplished using X-ray diffraction (XRD), differential scanning calorimetry (DSC), scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). Amongst all the formulations tested, the one composed of LDP, PVP and PLX at the ratio of 25/37.5/37.5 (w/w/w, %) gave the highest solubility ($\sim 470.96 \pm 23.84$ mg/ml) and dissolution ($\sim 95\%$ in 15 min) of LDP in the aqueous media. Furthermore, LDP existed in the amorphous state in this formulation with no strong chemical interactions with the components of polymeric blend. The morphological investigations revealed that the particles of this formulation had irregular shapes and surfaces. Thus, the abovementioned optimized hydrophilic polymeric blend, composite or synergist might be a suitable oral delivery system for numerous other poorly water-soluble drugs as well.

Keyword: Polymeric Surgery, Oral Drug, Polyvinylpyrrolidone (PVP)-Poloxamer

Preparation of Smart PVP/HPMC Based IPN Hydrogel, its Characterization and Toxicity Evaluation

Ayesha Aslam, Shahid Shah, Muhammad Ahmed Shehzad, Zunera Chauhdary, Mahmood-ur-Rahman, Muhammad Zafarullah, Ghulam Abbas, Umar Farooq, Haris Khurram, Usman Rashid Chand, Nimra Zulfiqar, Nehaj ul Sakeena

Antibiotics are widely used drugs for numerous infectious diseases and antibiotic resistance is increasing rapidly due to misuses of antibiotics. Our aim was to determine the knowledge, attitude and practices of antibiotics and antibiotic resistance among pharmacy customers in Punjab, Pakistan. A cross sectional survey was conducted on community pharmacies using a self-administered questionnaire. A systematic random sampling approach was used to recruit the participants. Categorical data was represented by percentages. P-value was determined using chi square test. A p-value less than 0.05 was considered statistically significant. A total of 865 participants completed the survey. Amoxicillin (39.9%) was the

antibiotic most commonly used by customers and bacterial infection (64.7%) was the major reason for which antibiotics were being used. About 54.3% had used antibiotics as self-medication. Majority (43.4%) thought that it would be better to stop taking antibiotics when symptoms resolved. About 43.9% used leftover antibiotics for same disease again. About 67.6% regularly read the label before antibiotics. The respondents who claimed that they had antibiotics in purchasing and knew about antibiotic resistance gave significant variations ($p < 0.001$) regarding the side effects of antibiotics and use of antibiotics in pregnancy. Significant variations ($p < 0.001$) were also found in all the attitudes and practices of the respondents. The knowledge and practices of the pharmacy customers regarding antibiotics was almost satisfactory but attitudes are poor. There is a need to be addressed by public education campaigns to increase the health status of the community.

Keywords: Antibiotic Resistance, Antibiotics, Knowledge, Practices.

Prevalence and Treatment of Neurological and Psychiatric Disorders among Tertiary Hospitals in Pakistan; Findings and Implications

Tanveer Ahmed Khan, Shahzad Hussain, Aamer Ikram, Sidra Mahmood, Humayun Riaz, Ayesha Jamil, Amina Amin, Yaseen Ghulam Haider, Marva Sandhu, Atifa Mushtaq, Corrado Barbui, Chris F. Johnson

Mental health and neurological disorders are prevalent in Pakistan. However, there are considerable concerns with their management due to issues of access, availability of trained personnel and stigma alongside paucity of such data. Consequently, there is a need to document current treatment approaches starting with tertiary hospitals in Pakistan where patients with more severe mental and neurological disorders are typically treated. Subsequently, use the findings to help direct future policies and initiatives. Multi-centered, cross-sectional, prospective study principally evaluating current medicine usage among patients attending tertiary hospitals in Pakistan with psychiatric and neurological disorders. In addition, possible factors contributing to the prevalence of these disorders in this population to help with future care. All 23 tertiary care hospitals in the ten major Districts in Pakistan were included, which cover 75% of the population. 57,664 patients were evaluated of which 35.3% were females. Both females and males had multiple brain disorders and multiple co-morbidities. Schizophrenia was the most prevalent disorder overall among both females (25.2%) and males (30.4%). A median of six medicines were prescribed per patient, with antipsychotics and antidepressants the most prescribed medicines. Clozapine was the most prescribed medicine in males (12.25%) and females (11.83%) including for psychiatric disorders, with sodium valproate the most prescribed medicine in epilepsy in males (42.44% of all anti-epileptic medicines) as well as females (46.38%). There was a greater prevalence of both disorders among the lower classes. A greater prevalence of schizophrenia was seen in patients abusing alcohol and smokers. The divorce rate was higher among the studied patients and the prevalence of depression was higher among the widowed population. There were concerns with the quality of prescribing including the extent of polypharmacy as well as possible overuse of clozapine especially in patients with epilepsy, both of which need addressing.

Keywords: Psychiatric Disorders, Neurological Disorders, Schizophrenia, Depression, Drug Abuse, Smoking, Pakistan

Protective Potential of Sugar Beet Pulp Extracts (SBPE) Against Heavy Metal Induced Hepatorenal Toxicity in Rats

Muhammad Sameer Ashaq, Mubbashar Abbas, Muhammad Bilal Hassan Mahboob, Abdul Mannan Kashif, Abdul Raheem Malik, Tooba Mehboob, Naila Tabassam

The current study was aimed to assess renal and hepatic protective potential of sugar beet pulp extracts (SBPE) against toxicity in rats induced by lead acetate (Pb (C₂H₃O)₂). A total of 30 rats were pretreated with methanol and sodium hydroxide SBPE (100mg/kg/day) for 15 days, orally followed by intra-peritoneal lead acetate (40mg/kg/day). All rats were sampled on the 16th day for blood and organs. The results revealed significant (p<0.05*) protective effect by reversing fluctuation in opted biomarkers due to lead acetate such as AST (203±14.24 U/L), ALT (95.6±4.36U/L), CR (1.29±0.09mg/dl), BUN (40.1±2.61mg/dl), MDA (265±18.8n, mol/g) and CAT (21.5±0.75µ/g). The histopathological examination of SBPE treated groups indicated protective ability by alleviating morphological alteration due to heavy metal into more or less normal morphology. Methanol extract of Sugar beet pulp (SBPME) possesses more antioxidant ability against lead-induced oxidative stress than aqueous extract of Sugar beet pulp (SBPAE) in rats.

Keywords: Hepato-Renal Toxicity, Lead Acetate, Sugar Beet Pulp, Antioxidant, Methanol Extract, Aqueous Extract

Relevancy of Nizatidine Release from Floating Tablets with Viscosity of Various Cellulose Ethers

Namra Ibrar

Nizatidine is a gastroprotective drug with a short biological half-life and narrow absorption window. This study aimed at developing floating tablets of nizatidine using various HPMC viscosity grades, namely K4M, E4M, K15 and K200M. Directly compressed tablets revealed an excellent uniformity in hardness, thickness and weight and nizatidine was evenly distributed within the matrix floating tablets. Buoyancy study revealed floating lag time as low as 18–38 s, and tablets remain buoyant for upto 24 h. However, the later depended upon viscosity grade of HPMC and that the higher the viscosity, the less was the total floating time. In vitro dissolution indicated viscosity dependent nizatidine release from the floating tablets. HPMC K4M and E4M based floating tablets released almost 100% drug in 12 h, whilst higher viscosity polymers such as K15 and K200M only released 81.88% and 75.81% drug, respectively. The drug release followed non-Fickian diffusion from tablets formulated with K4M, K15 and K200M, whilst super case II transport was observed with E4M based tablets. More interestingly, K4M and E4M polymers have similar viscosity yet exhibited different drug release mechanism. This was attributed to the difference in degree of substitution of methoxyl- and hydroxypropoxyl- groups on polymer backbone.

Keywords: Buoyancy, Dissolution, floating Tablets, HPMC, Nizatidine, Substitution Level, Viscosity Grades

Statistical Study of Self Medication with OTC and Antibiotics in Three Major Cities of Pakistan

Muhammad Imran Ashraf, Muhammad Shahid Javed, Shazana Rana, Yasir Mehmood, Mudassar Ali Roomi, Asma Inam, Hammad Yousaf

To discover the frequency of self-medicine with antibiotics/OTC amongst population of 3 metro cities of Pakistan (Lahore, Multan, and Islamabad). As we realize that antibiotic resistance has the ability to have an effect on humans at any level of life, in addition to the healthcare, veterinary, and agriculture industries, making it one of the global's most pressing public health issues. There are a couple of motives for resistance and the maximum not unusual are self-medication and pharma industries antibiotic wastage without remedy. The survey used was primarily based on a cross-Sectional examine that's used to collect data on a populace at a single factor in time. The material required for this survey covered Performa containing a list of questions concerning self-medicinal drug with OTC drugs and antibiotics. One hundred patients from every metropolis have been interviewed in line with the Performa/questionnaire. This survey indicated want for energetic involvement of health care experts, specially physicians and pharmacists, in educating and counseling the populace approximately the safe utilization of medication, even though it is hard to eliminate selfremedy practice legal rules can be made approximately the sale of OTC pills and antibiotics so as to maximize the exercise of rational use of medication.

Keywords: Antibiotics, Prescription, Health Care, Rational, Wastage

Synthesis, Analysis and Biological Studies of Transition Metal Complexes of Cefixime

Yasir Mehmood, Sana Ghafoor, Humayun Riaz, Rana Khalid Mahmood, Abdulmannan Kashif, Abdulraheem Malik, Ayesha Tariq, Hammad Yousaf, Syed Atif Raza

Cephalosporin is extensively used broad-spectrum antibiotic, containing β -lactam ring. However, due to overuse of this drug many bacteriological pathogens are now resistant. The study aim to prepare new derivatives of above drug, which will enhance biological activity against pathogens. In current study, cefixime was reacted with essential trace elements to synthesize respective metal complexes. It comprises formation of mixed ligand complexes of cefixime as primary ligand and glycine as secondary ligand with transition metals. The novel compounds were characterized physically like shape, color, melting point, solubility in different polar and nonpolar solvents, pH and Rf value. Spectroscopic characterization like electronic spectra IR spectroscopy and antimicrobial screening against gram positive and gram negative bacterial strain. Biological screening of novel compounds was accomplished against diverse group of pathogens. Some of our novel compounds showed high efficacy against the pathogens as compare to parent composites.

Keywords: Solubility, Compounds, Metals, Ligand

The Evaluation of Impacts of Socio-Psychological Factors on Women Suffering Breast Cancer

Muhammad Sameer Ashaq

The aim of study was to assess the complications due to social and psychological factors on women with breast cancer. This survey was subjected to analyze the current status of women suffering breast cancer in southern Punjab which lacks in awareness about this health issue. The study was organized in the cancer analyzing unit of Minar hospital Multan. Sample size was 120 patients of Minar hospital Multan which belongs to all Pakistan. The selected research questionnaire contains 33 questions related to different effects of socio-psychological impact on breast cancer women. Questionnaire was filled by respondent during face to face interview and meeting as research tools. Research used semi planned, planned and partly planned questionnaire. The results indicated how social and psychological aspects dramatically influence the cancerous women. The observation of consultants, family history, reactions after diagnosis, affordability and socio-cultural barriers showed significant impact on breast cancer women in southern Punjab. They have dual approach towards this health issues, one sector is willing to treat while other is afraid of treatment. It can be concluded from the study that there should be goal oriented approach to convince and aware the poor and illiterate women to counter this health complication and socio-psychological barriers.

Keywords: Socio-Psychological Factors, Breast Cancer, Southern Punjab

The Potentially Recommended Pharmacotherapy for COVID-19

Ur Rashid Nazir, Saeed, Nazir, Taha, Sultana, Misbah, Shamim, Rahat, Riaz, Humayun; Munir, Safia Sultana, Kayani, Ruqaiya Rasheed, Manzoor, Saba, Islam, Azharul

A completely unique coronavirus (2019-nCoV), formally referred to as severe acute respiratory syndrome (SARS-CoV-2), appeared in China. SARS-CoV-2 is an etiological mediator of coronavirus 2 (COVID-19), characterized by pneumonic contagion in human beings. In spite of forceful suppression, this virus has spread worldwide. No specific drugs have been approved by the FDA for treating COVID-19 patients. The study intended to examine the data from studies on clinical management of COVID-19. The research team performed a literature review, searching relevant literature databases. The sources of data included bioRxiv, medRxiv, Google Scholar, Embase, PsychINFO, WanFang Data, and PubMed. The search terms were treatment of the novel coronavirus, management of nCoV-19, chloroquine, and hydroxychloroquine. The study took place in the main library of the University of Sargodha in Sargodha, Pakistan. The study identified 42 unique studies that had reported and confirmed over 1500 cases of nCoV-19 by April 21, 2020. The studies found that clinical management, for patients who presented with symptoms, included supportive care and control measures that comprised mechanical ventilator support and supplementary oxygen. There have been intensive attempts to explore drug therapy for the prophylaxis and treatment of SARS-CoV-2 infection during this COVID-19 pandemic. Several drugs have been identified which including remdesivir, two antimalarials (chloroquine and hydroxychloroquine) and immunosuppressive

agents. The effects of most drug interventions are currently highly uncertain and several drugs and vaccines are under trial for the effective treatment of COVID-19 virus, until an effective treatment will discover social distancing and physical hygiene should be practiced strictly.

Keywords: Pharmacotherapy, COVID-19, SARS-Cov-2

Traditional Medicinal Plants Used for Respiratory Disorders in Pakistan: A Review of the Ethno-Medicinal and Pharmacological Evidence

**Alamgeer, Waqas Younis, Hira Asif, Amber Sharif, Humayun Riaz, Ishfaq Ali Bukhari, Asaad
Mohamed Assiri**

Respiratory disorders are a common cause of malady and demise in Pakistan due to its remoteness, cold and harsh climatic conditions as well as scarce health care facilities. The people rely upon the indigenous plant resources to cure various respiratory disorders. The primary objective of this review was to assemble all available ethno-medicinal data of plants used for respiratory disorders in Pakistan. Pharmacological activity of these plants (based upon published scientific research), distribution, diversity, use, preparation methods, economical value, conservation status and various available herbal products of some plants have also been explored. This study scrutinized various electronic databases for the literature on medicinal plants used in Pakistan to treat respiratory disorders. A total of 384 species belonging to 85 families used to treat respiratory disorders in Pakistan has been documented. Cough was the disorder treated by the highest number of species (214) followed by asthma (150), cold (57) and bronchitis (56). Most of the plants belong to Asteraceae (32) and Solanaceae family (32) followed by moraceae (17), Poaceae (13), and Amaranthaceae (13) with their habit mostly of herb (219) followed by Shrub (112) and tree (69). Traditional healers in the region mostly prepare ethno medicinal recipes from leaves (24%) and roots (11%) in the form of decoction. Among the reported conservation status of 51 plant species, 5 were endangered, 1 critically endangered, 11 vulnerable, 14 rare, 16 least concern, 3 infrequent and 1 near threatened. We found only 53 plants on which pharmacological studies were conducted and 17 plants being used in herbal products available commercially for respiratory disorders. We showed the diversity and importance of medicinal plants used to treat respiratory disorders in the traditional health care system of Pakistan. As such disorders are still causing several deaths each year, it is of the utmost importance to conduct phytochemical and pharmacological studies on the most promising species. It is also crucial to increase access to traditional medicine, especially in rural areas. Threatened species need special attention for traditional herbal medicine to be exploited sustainably.

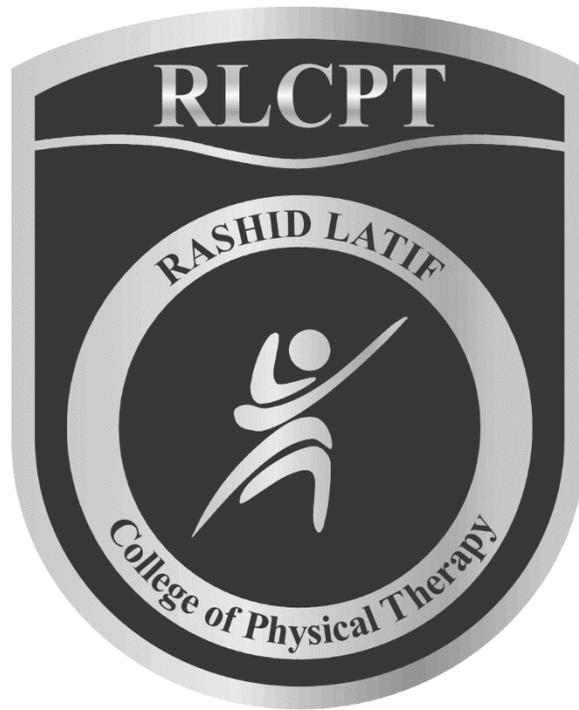
Keywords: Traditional, Pharmacological, Respiratory

Worldwide Role of Clinical Pharmacist in Optimizing Patient Health: A Systematic Review

Humayun Riaz, Syed Atif Raza, Sajjad Ali

In many under developed countries, role of clinical pharmacists is not well established. Whereas, world widely in developed countries pharmacists in clinical settings are playing very vital role in optimizing therapeutic regimens, minimizing drug therapy problems (DTPs) & issuance of drug safety alerts to the healthcare professional for preventing & management of Adverse drug reactions. Thus our systematic review is aimed to evaluate the role of clinical pharmacists in healthcare settings. A comprehensive computerized literature search was carried out to find clinical research articles. Pub med, Medline, Google scholars & science direct was searched extensively. Total 40 research articles were studied for the review. Irrelevant and duplicated articles were removed. Total 23 articles were selected for the systematic review. This systematic review concluded that clinical pharmacists have the great potential to play an active role in the management of chronic illnesses, optimizing therapeutic regimens, minimizing the risk of development of ADRs and make considerable savings in healthcare costs.

Keywords: Clinical Pharmacy, Adverse Drug Reactions, Pharmacists Work Up of Drug Therapy, Drug Therapy Problems



Assessment of Level of Kinesiophobia among Chronic Low Back Pain Patients

Misbah Tahir, Rehana Niazi, Nazeer Mehrvi, Abbas Jamil

The present study was intended to assess the level of Kinesiophobia among chronic low back pain patients and its association with pain intensity. This descriptive cross-sectional study was carried out on 140 patients who were selected through non-probability convenient sampling. Patients of both genders who were receiving physiotherapy were included in study. Patients with trauma, neurological or pathological conditions were excluded. We used Tampa Scale to evaluate Kinesiophobia, and Numeric Pain rating scale to measure pain intensity. Data were analyzed using SPSS 22. Out of 140 patients, there were 60 (43%) males and 80 (57%) females. Age ranged between 40-60 years (mean 50.16 ± 5.889). The mean Kinesiophobia score was 40.13 ± 8.576 and 60.7% had high level Kinesiophobia. No association was found between pain intensity and Kinesiophobia. Kinesiophobia plays an important role in explaining pain and disability among people with low back pain. Therefore, it seems appropriate to document the level of Kinesiophobia in clinical settings to acknowledge the barriers that can affect the patient's conformity towards a recovery.

Keywords: Kinesiophobia, Chronic Low Back Pain, Fear

Prevalence of Patellofemoral Pain Syndrome in Females and Its Impact on Daily Activities

Aqsa Butt, Rehana Niazi, Nazeer Mehrvi, Abbas Jamil,

The present study was intended to find the prevalence of patellofemoral pain syndrome in females and its impact on daily activities. This observational cross-sectional study was done on 162 females of age range 18 to 30 years using non-probability convenient sampling. Data were collected from different institutes of Lahore. Participants were assessed on the basis of the Anterior Knee Pain Questionnaire. To find the impact on daily activities, LEFS was used. Both questionnaires were provided to the participants in hand and they filled the answers on the spot. Out of 162 Participants, 25 (15.2%) had patellofemoral pain syndrome and one had unstable patella. Out of 162 participants, 14 had mild difficulty (8.64%) and 2 had moderate difficulty (1.23%) with lower extremity functions. There was an association between patellofemoral pain syndrome and LEFS (Likelihood ratio 71.071). Patellofemoral pain syndrome is very common among females. Because of the painful symptomatic condition, the individual is unable to perform usual daily activities. As this condition is quite underrated, the therapist should pay close attention to its diagnosis and treatment plan to avoid the osteoarthritic condition of the joint.

Keywords: Patellofemoral Pain Syndrome, Anterior Knee Pain, Kujala Score

Effects of Core Stabilization Exercises on Low Back Pain and Back Muscle Endurance in Patients with Lumbar Disc Herniation

Mohammad Abbas Jamil, Muhammad Salman Bashir, Rabiya Noor, Rehana Niazi, Nazeer Mehrvi, Shahzad Ahmad, Haseeb Ullah Ahmad

The present study was aimed to find out the effects of Core stabilizing exercises on low back pain, disability and endurance of back muscles in Lumbar Disc Herniation patients. A randomized controlled trial was conducted on fifty two patients were Allocated in two equal groups by lottery method will be through random assignment. Group A was treated with controlled conventional treatment and core stabilizing exercises. Group B received only conventional treatment. All this information was collected through a questionnaire having numeric pain rating scale and Oswestry disability index. Also for endurance testing, Biering-Sorenson test and trunk flexion endurance test was used. By using Independent-T test, results of present study showed that after 8-weeks of core stabilization exercises with value of 1.93 for pain, 16.08 for disability, 1.27 and 40.54 for endurance. There was a significantly great low back pain and disability reduction and a significant increase in back muscles endurance in treatment group, with value compared to control group of 4.74 for pain, 34.81 for disability, 2.16 and 17.51 for endurance. The Core Stabilization Exercises produced significant effects to lessen pain and functional disability, also to enhance endurance of back and hip muscles in low back pain patients with lumbar disc herniation.

Keywords: Low Back Pain, Herniated Disc, Physical Endurance, Transversus Abdominis

The Relationship of Perceived Child Vulnerability and Parental Overprotection to Physical Activity in Pediatric Asthma

Tehreem Khawar, Rehana Niazi, Nazeer Mehrvi, Abbas Jamil, Aleena Waheed

The main objective of this research was to determine that does the overprotection of parents contribute to the low physical activity level in children with asthma? What is the prevalence of over-protectiveness in parents of vulnerable children to asthma? The study was carried out on N=60 children aged between 7 to 14 years, with already diagnosed asthma and their respective parents, in an OPD of Children's Hospital and Gulab Devi Chest Hospital Lahore. Parental overprotection was assessed through Vulnerable Child Overprotection Parenting Questionnaire and the physical activity level of children was assessed through physical activity questionnaire. There was a moderate to strong positive correlation ($r= 0.47$, $n= 60$, $p< .001$) between increased parental overprotection, and low physical activity among children and zero correlation of gender and overprotection level. 53.3% of all parents were highly protected and 66.7% of all the children have low physical activity. 40% of the children with low physical activity had parents with excessive overprotection, and only 15% of children whose parents were moderately overprotected had shown mild physical activity proving low physical activity of children is positively correlated and linked to the increasing protective nature of the parents that negatively affects the quality of life with a significant impact on the Physical and Psychological health of children. These findings emphasized that health care providers should make every effort to educate the parents about

behavior management, the possible triggers of asthma, and to guide them about how physical therapy exercises can improve their child's strength and self-confidence.

Keywords: Asthma, Child, Physical Activity, Overprotection

Impact of Diabetes on Patient's Quality of Life with Respect to Duration

Aroosha Abid, Rehana Niazi, Nazeer Mehrvi, Abbas Jamil, Danish Hassan

Diabetes mellitus is a non-communicable disease which increasing globally. It is of three type's type 1 which is insulin dependent; type 2 which is non-insulin dependent and Third type is Gestational diabetes which occurs during pregnancy. According to international diabetes federation 90% of all cases reported type 2. The aim of this study is to evaluate the variant effect of diabetes on patient quality of life with the passage of time. The study was observational, cross sectional survey. It includes various hospitals of Lahore Jinnah, Arif memorial and private clinics. Sample size was 200 by using formula. Sampling technique was non-probability convenience sampling. Data instrument was SF36. Data analysis was done by SPSS 16. It showed that the quality of life of the patient was decreased as the diabetes progress. The patients had diabetes for greater than 15 years showed poorer quality of life as compared to those who had diabetes for less than 5 years. The study concluded that the diabetes mellitus has mild effects on the patient's quality of life if duration is less than 5 years, has moderately effects the quality of life if duration is in between 5 to 15 years and has severely effects the patient's life if it progress to more than 15 years of life.

Keywords: Diabetes Mellitus, Quality of Life, Hospital

Prevalence and Nature of Injuries among Academy and Club Young Professional Cricketers in Lahore

Shahzad Akhtar, Nazeer Mehrvi, Danish Hassan, Ehtisham ul Haq

This study aimed to find the prevalence and nature of injuries among academy and club young professional cricketers in Lahore. The population comprised 149 cricketers representing academies and clubs of Lahore. The players retrieved all injuries from January to December 2018, and data was retrospectively gathered. The findings revealed that 93 injuries were reported by 149 cricketers with a prevalence of (62.4%).

Keyword: Cricket, Injury, Academy, Club

Learning Style Preference of DPT Undergraduate Students

Soyba Nazir, Rehana Niazi, Danish Hassan, Nazeer Mehrvi, Aleena Waheed

Every individual has its own preferred way of learning new skill and it becomes its learning style. Researchers conducted on students to know their preferred way of acquiring information showed unique

styles of every student. There is more information of learning styles of students associated with different fields, with very little focus on physical therapy students. The Objective of the study was to determine the preferred learning style of DPT undergraduate students across different universities of Lahore, Punjab, Pakistan. This is a Non experimental cross-sectional survey had been conducted. Data collection with questionnaire named “Index of Learning style (ILS)” had been used. The results shows that the Learning style of DPT undergraduate students judged on ILS and the first category which was active/reflective, the more of the students (54.1%) were activists having mild preference for reflective type of learning. In the second category which was sensing/intuitive, the more of the students (64.1%) were sensing having mild preference for sensing type of learning. In the third category which is visual/verbal, the more of the students (77.6%) were visual and they had both mild and moderate preference for visual type of learning and the last category which is sequential/global, the more of the students (54.6%) had sequential type of learning having mild preference for global one. Study concluded that Students had preferred learning styles which were activist, visual, sensing and sequential. By knowing the learning styles of students, teaching environment for maximum and efficient learning could be modified.

Keywords: Index of Learning Styles, Doctor of Physical Therapy, Visual/Verbal, Sensing/ Intuitive, Sequential/Global, Felder-Silverman Learning Style Model

The Effects of COVID-19 Lockdown on Physical Activity and Quality of Life among Students from Different Socioeconomic Backgrounds

Ehtisham Ul Haq, Wishal Edwin, Nazeer Mehrvi, Rehana Niazi

Studies have shown that public emergencies, like the ongoing COVID-19 pandemic and self-quarantine can have negative effect on the mental and physical health. This is due to the radical shift in the social and physical habits among the non-infected population. Therefore, through this study we aimed to find the association of physical activity (PA) levels and the quality of life (QoL) among the students belonging to different socioeconomic status (SES). We recruited 154 students (31.82% male and 68.18% female) from different universities across Pakistan to participate in this observational study and asked them to fill an online questionnaire. To determine the SES we used Hollingshead Index, for PA levels Beacke’s physical activity questionnaire was used and to determine QoL we used WHO BREF version. The results suggested that the analysis we performed to find the association of PA ($p = 0.567$) and QoL ($p = 0.082$) among different SES group were both statistically insignificant. There was no striking difference among the SES groups of the students. Contrary to this, the association of physical activity levels in correlation to gender ($p = 0.035$) was statistically significant. We found that female population was more physically active as compare to male population, which could be due to the engagement of females in housework and males adapting the sedentary lifestyle. This study provides evidence that students need to maintain a regular pattern of exercise in order to maintain their social, mental and physical health.

Keywords: Quality of Life, Socioeconomic Status, Physical Activity Levels, Covid 19

The Effects of Open Chain Kinetic (OKC) Exercises and Closed Kinetic Chain (CKC) Exercises in Improving Dynamic Balance and Range of Motion in Patients with Knee Osteoarthritis

Ehtisham Ul Haq, Zainab Hassan, Nazeer Mehrvi, Wishal Edwin

Objective of the study was to compare the effects of open chain kinetic (OKC) exercises and closed kinetic chain (CKC) exercises in improving dynamic balance and range of motion in patients with knee osteoarthritis. This randomized controlled trial was conducted at Chughtai Medical center Lahore and a sample of 46 patients was recruited and was randomly allocated in two groups. One group performed OKC exercises and the other group was asked to perform CKC exercises, while both of the groups received a common baseline treatment prior to corresponding intervention. Two sessions a week were given for a period of one month. Goniometry and Y-balance scale were used to assess ROM and dynamic balance pre and post treatment, respectively. Data was analyzed by SPSS and statistical tests applied at a 95% level of significance which determined the effects of both of the treatment regime. In this study, the intra-group analysis illustrated that the increase in range of motion and improvement in dynamic balance was statistically significant in both groups with $p\text{-value} < 0.05$, whereas, the inter-group analysis showed that both interventions were clinically effective in treating the patients of knee osteoarthritis with $p\text{-value} > 0.05$ during the treatment session of four weeks. It was concluded that patients with OKC exercises have shown equal improvement in ROM and dynamic balance compared to those who have been treated with CKC exercises.

Keywords: Osteoarthritis, Open Kinetic Chain Exercises, Close Kinetic Chain Exercises, Dynamic Balance, Static Balance

Effectiveness of Mulligan Sustained Apophyseal Glides (SNAGs) and Maitland Mobilization for the Treatment of Cervicogenic Dizziness

Dua Ahmad, Rehana Niazi, Nazeer Ahmad, Abbas Jamil, Aleena Waheed

The cervicogenic is non-specific and encompasses symptoms that originate from cervical spine dysfunction. Patients with this type of dizziness often complain of dizziness that involves imbalance or disequilibrium occurring in conjunction with neck pain, stiffness, and/or headache. Manual therapy is an intervention commonly advocated in the management of dizziness. The aim of this study is to compare and evaluate the effects of Mulligan sustained natural apophyseal glides (SNAGs) and Maitland mobilizations in reducing cervicogenic dizziness. Randomized control trial study was carried out on the sample of 32 population, with 16 participants in each group. Results showed that Post-treatment dizziness handicap inventory score of Snag was 23.13 ± 6.28 and Maitland was 44.63 ± 6.80 the difference was statistically significant. Similarly 4 weeks after treatment mean dizziness score of Snag was 0.63 ± 1.20 whereas in Maitland group was 16.00 ± 1.93 the difference was statistically significant ($p\text{-value} < 0.001$). Post-treatment neck disability score of Snag was 4.44 ± 1.63 and Maitland was the difference 14.00 ± 3.81 was statistically

significant. Similarly 4 weeks after treatment mean dizziness score of Snag was 0.00 ± 0.00 whereas in Maitland group was 5.38 ± 1.89 . The difference was statistically significant (p -value=0.001). SNAGs were overall more effective than Maitland for all three outcome measures. We conclude from this study is that both SNAGs and Maitland are valuable in reducing dizziness, pain, and disability in patients with cervicogenic dizziness. SNAGs demonstrated more effectiveness to Maitland mobilizations.

Keywords: Snags, Maitland Mobilization, Cervicogenic Dizziness

The Relationship between Fear Avoidance Belief and Low Back Pain in Pregnant Females

Afsheen Khalid, Rehana Niazi, Nazeer Mehrvi, Abbas Jamil, Ehtisham ul Haq

This study aimed to investigate the relationship between fear-avoidance beliefs and pain in pregnant women. This descriptive cross sectional study was conducted on 204 pregnant women with low back pain. Data collection tools included are Fear-Avoidance Beliefs questionnaire (FABQ) and McGill Pain Questionnaire. Data analysis was performed in SPSS version 25 using descriptive statistics. Subjects mean age was 26.89 ± 5.51 years. Mean and SD of Fear Avoidance Beliefs (FAB) for work was 22.83 ± 9.9407 and (FAB) for physical activity was 20.44 ± 1.34 . In addition, McGill Pain Questionnaire was moderate in the majority of participants [178 (87.3%)]. The results of this study indicated that fear-avoidance and catastrophic beliefs, in women with low back pain can be predicted. According to the results of the study, FAB varied with the severity of pain. In addition, increased pain intensity was associated with elevated score of FAB.

Keywords: Pain, Pregnancy, Low Back Pain, Work, Physical Activity

Relationship of Fatigue with Insomnia among Pregnant Women

Hafiza Nida Rasheed, Rehana Niazi, Nazeer Mehrvi, Abbas Jamil, Ehtisham ul Haq

Sleep disorders and fatigue are most common and regular complaints experienced by pregnant women. Fatigue is a feeling of consistently decreased energy level while Insomnia is a frequent sleep disturbance which can be primary or due to co-morbid conditions. This cross sectional study was conducted to find association between fatigue and insomnia during pregnancy. Data from 196 females was collected at district head quarter hospital Kasur and Arif memorial teaching hospital Lahore. From study population, during 1st trimester, 19% women had fatigue. Out of these 19 percent, 2% women had fatigue during 1st trimester, 31% had sub threshold insomnia, 21% had clinical insomnia of moderate severity and 2% had severe clinical insomnia. During 2nd trimester, 6% women had fatigue while 21% had sub threshold insomnia, 15% had clinical insomnia of moderate severity and 2% had severe clinical insomnia. During 3rd trimester, 25% participants had fatigue while 48% had no clinical significant insomnia, 22% had sub threshold insomnia, 26% had clinical insomnia of moderate severity and 3% had severe clinical insomnia. When insomnia with fatigue was compared the chi square statistics was significant i.e. 42.754, $p < .001$. This

study showed that there is moderate association between fatigue and insomnia.

Keywords: Pregnancy, Fatigue, Insomnia

Efficacy of Post Isometric Relaxation versus Reciprocal Inhibition Technique on Hamstring Muscle Flexibility among Students of Johar Institute of Professional Studies Lahore

Asma Aleem, Muhmmad Tariq Irfan, Ayesha Razzaq, Rooh ul Husnain Khizar, Mehboob Ali

To expand the muscular extensibility, alternation of muscle energy techniques have been upheld, yet proof of present to help the general value of a specific methodology. Two strategies of muscle energy techniques have been explored in the osteopathic writing that differs principally in the group of muscles focused on. The objective of the study was to find out the efficacy of post isometric relaxation and reciprocal inhibition technique on hamstring muscle flexibility among students. The quasi experimental study was for comparison of two relaxation techniques with 50 healthy students. Furthermore, on the basis of selection criteria were divided in to two groups with 25 in each group. Hamstring length was assessed using AKE test. For intervention Group A performed post isometric relaxation and Group B performed reciprocal inhibition technique. Knee joint range of motion was assessed pre-intervention and post-intervention. Numeric Pain Rating Scale (NPRS) and Universal Goniometer were assessment tools accessed for all patients before and after 4 weeks of physical therapy intervention. Paired sample T-test and independent sample T-test were applied to find association between the variables of hypothesis. In both groups, the pre-intervention and post-intervention measurements by statistical analysis found that there is significant improvement in hamstring muscle flexibility with $P \text{ value} \leq 0.05$ for both right and left sides. The current study found out that both post isometric and reciprocal inhibition are equally beneficial in the treatment of tight hamstring muscles.

Keywords: Post Isometric Relaxation, Reciprocal Inhibition, Universal Goniometer

Is Sarcopenia and Fall Efficacy Predictor of Locomotive Syndrome?

Aleena Waheed, Rehana Niazi, Nazeer Mehrvi, Abbas Jamil, Madiha Syed, Arslan Chughtai

Locomotive syndrome is the geriatric condition related to decline in mobility, due to decrease structural and functional ability of locomotive organ. Having proportion of aged population in our community, evaluation of this syndrome in order to prevent and treat it is necessary. Furthermore, Sarcopenia is common theme among concept of locomotive syndrome and geriatrics with loss of muscle mass, so, it can lead to these. And in the view of loss of strength and decline in mobility there is increased risk of fall and fear of fall. This study aimed to find out prevalence of locomotive syndrome and its relation with sarcopenia and fall efficacy among geriatric. The cross-sectional descriptive study of sample size of 87 participants with age of 60 years and above, were taken to evaluate locomotive syndrome, sarcopenia and fall efficacy by observational tools GLFS-25, Sarc-F and Tinetti FES. Furthermore, the analysis was done,

using frequency statistics and Pearson's Correlation by SPSS version 25.00. By using frequency statistics, found out prevalence of the locomotive syndrome among aged population is 66.7%, whereas it shows strong correlation with sarcopenia (+0.870), fear of fall (+0.798) and fall efficacy (-0.798) by using Pearson's correlation. Regression analysis showed that sarcopenia act as predictor locomotive syndrome whereas fall efficacy doesn't. This study concluded that to have poor quality of locomotive function associated with sarcopenia and fear of fall. In addition, Sarcopenia and fear of fall, individually increase the chances in decline in locomotive ability. So concern should be shown by aged care health professionals in order to prevent this complexity.

Keywords: Gait, Elderly, Sarcopenia, Fall

Physical Therapist Knowledge towards Physical Activity and Its Promotion

Shafiqah Ishaq, Rehana Niazi, Ehtisham-ul-Haq, Munaza Arwa, Rida

Physical activity is widely accepted as a major constituent of the prevention and management of several chronic diseases. A low level of physical activity is a major modifiable risk factor for cardiovascular diseases, diabetes, obesity, depression, bone and joint diseases, and some cancers. Physical activity is correlated with lowering risk of falls and can help older mature get back to normal. The aim of study was to find out physical therapist knowledge towards physical activity and its promotion. An observational cross sectional study carried out on a sample of 74 physical therapist, using non-probability random sampling. An open ended questionnaire used as well as IPAQ-S used to measures the frequency, duration, and level of intensity of physical activity over the last 7 days across all contexts and can be used to calculate metabolic equivalents for respondents. The mean age was 28.37 with Standard deviation of 3.015. Spearman rank correlation was applied to find the relationship between physiotherapist's knowledge of physical activity and their role in physical activity promotion and results indicated that positive correlation between physical activity knowledge of physiotherapist and role in promotion. The study revealed that there is positive correlation between Physiotherapists knowledge of physical activity (Definition, dimension and benefits while negative correlation between physical activity manifestations, recommendations for children and adults) and its promotion.

Keywords: Physiotherapists, Physical Activity, Knowledge, Promotion

Effect of Physical Therapy in Prevention of Postoperative CABG Complications; A Randomized Controlled Trial

Komal Javed, Rehana Niazi, Rooh ul Husnain Khizar, Aleena Waheed, Samim Khalil

The present study shows that how effective chest and limb physiotherapy is at preventing postoperative CABG complications. Either the severity of complications remains the same in both groups or Complications has improved in group receiving physical therapy interventions. A Randomized Controlled Trial was conducted. 98 Postoperative-CABG patients were randomized into two equal groups (49 each),

using random sampling. Group A (Experimental) was treated with chest and limb physiotherapy and a spirometer and Group B (Control) was treated with a spirometer only. Questionnaires were used to assess the patients. Using an independent sample t-test, the results of the present study showed that the mean difference of O₂ saturation between the experimental and control group after physiotherapy was significant i.e. 1.3082 and the p-value was 0.00 (0.05). The mean difference in total gait and balance score between the experimental and control group after physiotherapy was significant i.e. 2.65306 and the p-value was 0.000 (0.05). The mean stay in the ICU of the experimental group was 5.65 ± 1.25 , which was less than the control group i.e., 6.47 ± 1.68 and the p-value was 0.005. The adequacy of chest and limb physical therapy in the prevention of post-operative CABG complications has proved significant. A marked improvement in O₂ saturation, mobility of patients, and stay in ICU was seen. Despite the fact that the rates of atelectasis and other pulmonary problems are statistically insignificant, physiotherapy improved their outcomes.

Keywords: Cardiac Rehabilitation, Breathing Exercises, Coronary Artery Bypass Grafting

Impact of Frailty on Geriatric Patients Presenting to Hospital with Fractures and Its Association with Their Functional Activities

Samim Khalil, Rehana Niazi, Abbas Jamil, Ehtisham-ul-Haq, Ifra Zulqarnain

The present study investigated the impact of frailty on geriatric population presenting in the hospital with fractures and how this frailty is associated with their functional status. An observational (cross-sectional) study was performed on a sample of 97 geriatric population of age 65 and older, using non-probability convenient sampling. Participants were assessed on the basis of FRAIL questionnaire for frailty and GFI (Groningen Frailty Index) for their functional activities status. The mean age of the subject was 73.63 ± 6.91 , among which 53 participants (54.6%) were male and 44 participants (45.4%) were female. Prevalence of fragility fractures in frail participants was 79.4% and pre-frail participants were 20.6%. 64.9% frail participants and 2.1% pre-frail were having impaired functional activities. 56.7% participants were having fitness between 0-6 out of 10 and 22.7% were having fitness from 7-10 ($p=0.047$). Frailty index has a significant impact on fractures and is associated with the functional status of participants. Mostly patients were not able to perform their ADLs and those who can perform were having limited functional activities.

Keywords: Fractures, Bones, Geriatrics, Frailty, Bone Fragility, Functional-Status

Effects of Chest Physiotherapy in Removal of Retained Tracheobronchial Secretions among Mechanically Ventilated Patients in Intensive Care Unit

Ifra Zulqarnain Awan, Rehana Niazi, Nazeer Ahmed, Soyba Nazir, Komal Javed

Mechanical ventilator is a machine used to help the patient breathe when he/she cannot breathe on his/her own due to severe illness. Chest physiotherapy includes various techniques like percussion, postural drainage, vibrations and suctioning of secretions which are used to clear secretions, improve oxygenation

and prevent pulmonary complications. To determine the effects of chest physiotherapy in removal of retained tracheobronchial secretions among mechanically ventilated patients in Intensive Care Unit. Quasi experimental study was carried on a sample of 110 mechanically ventilated patients, using non probability convenient sampling. Subjects peak inspiratory pressure, tidal volume, pulse oximetric saturation, amount of secretions removed by suctioning, respiratory sounds and saw tooth pattern were assessed before treatment and after treatment. The treatment technique used was percussion. By using paired sample T-test, results of present study showed that the difference in pre-test and post-test values of Ppeak, Vt, SpO₂ were statistically significant (p-value=0.000). Mean score of secretions volume removed during suctioning pre-test were 73.66±92.60 and post-test were 87.18±103.86. The analysis showed that there is association between pre-test and post-test respiratory sounds and saw tooth pattern (p-value=0.000). This study showed that after chest physiotherapy, more secretions were removed by suctioning, there were improvement in oxygen saturation and tidal volume, significant change in peak inspiratory pressure. Respiratory sounds and Saw tooth pattern were absent after chest physiotherapy.

Keywords: Mechanical Ventilation, Secretions, Intensive Care Unit, Postural Drainage

Comparing Effectiveness of Natural Apophyseal Glides and Grade II Maitland Mobilization in Nonspecific Neck Pain

Ehtisham Ul Haq, Junaid Gondal, Hammad Latif, Aqsa Arsalan

The objectives of study were to compare effectiveness of two completely different mobilizations techniques in decreasing the neck pain and disability. A comparative experimental single blinded randomized control trial study design was used. The study was single centered; data was to be collected from physiotherapy department of mayo hospital Lahore. By using the simple random sampling technique (computer generated random number table) 34 patients with non-specific neck pain were randomly allotted to receive mulligan mobilization NAGS in conjunction with Conventional Physiotherapy (group A, n=17) and grade II Maitland mobilization in conjunction with Conventional Physiotherapy (group B, n=17). Group A received mulligan mobilization natural apophyseal glides for 12 sessions during 4 weeks (3 sessions per week), whereas Group B received 12 sessions of grade II Maitland mobilization during 4 weeks (3 sessions per week). The results shown that NAGS group had NDI mean score 3.29± .772 with P value <.05 while Maitland mobilizations mean score was 5.35±.786 with p value < .05 after completed four weeks of treatment. These calculated results shows that Mulligan mobilization technique (NAGS) is better than grade II of Maitland mobilization in non-specific neck pain to decrease pain and restoration of function. It was concluded in study that mobilization of Mulligan (NAGS) proved more effective in comparison to mobilizations of Maitland in Grade II, in progressing pain rating score and NDI scores of non-specific neck pain patients.

Keywords: Nonspecific Neck Pain, Maitland Mobilizations, Mulligan Mobilizations, Natural Apophyseal Glides



Diagnostic Evaluation of Autism Spectrum Disorders, A Health Professional Survey

Khadija Saleem, Muhammad Sikander Ghayas Khan, Aayeshah Firdous, Iqra Naseer, Amna Rashid, Sabgsdia Saleem, Alia Naseer

Since the prevalence and awareness of autism spectrum disorders (ASD) is growing day by day, it is crucial to correctly allocate the diagnosis of ASD. According to the guidelines, there should be a multi-agency strategy group for the diagnosis of ASD. To find out the diagnostic practices of ASD among different Health Professionals. Place and duration of study: Riphah International University, Lahore campus. The study was conducted from October 2017 to March 2018. Data were collected from 116 professionals which included Speech-Language Pathologists, Pediatricians, Psychiatrists, Psychologists, and Occupational Therapists by using the Original Research Article Saleem et al.; JPRI, X(X): xxx-xxx, 20YY; Article no. JPRI.75378 2 questionnaire. A cross-sectional survey was carried out by using the technique of convenient sampling. The researcher collected the data from Riphah International University in person and some professionals were sent questionnaires online. The majority of professionals provide diagnostic services i.e. 84.4% as a part of a multidisciplinary team whereas 15.6% are sole practitioners for giving diagnosis; 51.1% collaborate with other professionals to make a consensus diagnosis and the most frequently used tool by professionals for diagnosing ASD is Childhood Autism Rating Scale CARS (76.7%) and Diagnostic and Statistical Manual of Mental Disorders V/IV (DSM V OR IV) criteria (67.8 %). The professionals in the current study are using a multidisciplinary approach for diagnosing ASD and a small number are sole practitioners. The most frequently used tool for diagnosing ASD are CARS and DSM V OR IV criteria. However, very few practitioners use the diagnostic tool Autism Diagnostic Observation Schedule ADOS and Autism Diagnostic Interview-Revised ADI-R. The professionals who provide a diagnosis of ASD are Speech and Language Pathologists, Psychologists, pediatricians, psychiatrists, and Occupational therapists.

Keywords: Diagnostic Tools, Diagnostic Practices, Autism Spectrum Disorders

Education Quality Measure of Undergraduate Students of Speech and Language Pathology in Pakistan

Sadaf Hameed, Nayab Iftikhar, Aayeshah Firdous, Muhammad Azzam Khan, Sabahat Khan, Atia-Ur-Rehman, Mishal Butt, Tallat Anwar Faridi

Undergraduate of Speech and Language Pathology study the basics of the mechanism of human communication, and pathology faced by humans in Speech, Language, and Swallowing. To measure the quality of education of undergraduate students of speech and language pathology. The study was observational and cross-sectional, with data collected using a purposive sampling technique. Students from both the public and private sectors from various institutes and universities across Lahore took part in the study. The results indicated that 40 students (61.50%) felt a "need for self-improvement" in terms of self-perception in academia. In terms of atmosphere perception, 44 (67.70%) of students had "a more positive attitude." In terms of learning perception, 58 students (89.20%) reported having a "more positive perception

of the education they receive." According to perceptions of course organizers, 51 (78.50%) of students believe they are "moving in the right direction." In terms of social self-perception, 54 students (83.10%) rated themselves as "Sociable." In the study, students of all years had different perceptions of learning, course organizers, and self-perceptions in academia, atmosphere, and society, but none of these perceptions differed based on gender or institutes. First-year students had a more positive perception of academics, self-perception, course organizers, academic atmosphere, and social and self-perception than students of other years.

Keywords: Education, Quality, Speech, Language, Pathology

Experiences of Police Officers during Covid-19

Uzma Dogar, Anum Rabbani

The Flu infection has been influencing humanity over a time of the past numerous decades bringing about a substantial loss of life comprehensively, This Flu infection strain has the particular name "Novel Corona Virus or COVID-19. W.H.O declare in March, 2020, the COVID-19 episode a pandemic. The COVID_19 pandemic made social change and adjusted standards for all public, however, its impacts on people on call (police officers) have been especially significant. There are unique threats to the well-being of police officers due to the event. Police issues have been investigated in the past, and their personal experiences with the current Corona epidemic have not yet been investigated. There is no research has been carried out on the experiences of police officers in COVID-19. This study aims to explore the lived experiences of police officers during the Covid-19 pandemic. A sample of 10 participants between the age range of 30 to 45 years was recruited. The impact of covid-19 and the experiences of the participants were explored using semi-structured interviews. An exploratory research design and Purposive sampling technique were used in this study. Using interpretative phenomenological analysis (IPA), the data were analyzed. The police officers faced resistance from the community. People were careless and the majority do not believe in its existence especially people from the countryside do not believe it. They experienced limited resources, lack of equipment, resistance to law and order, and health problems for themselves and their loved ones. They faced physical and mental health problems. They experienced Stress and strain, burned out, tension, depression, anxiety, and fear. They also experienced problems in a sexual relationships and disturbed family life.

Keywords: Covid-19, Pandemic, Police Officers, Experiences

Barriers in Collaborative Practice among SLP/Ts and Special Educationists Working in Special Education Settings

Jamshaid Haider Malik, Atia-Ur-Rehman, Rabia Qamar, Rooma Imtiaz, Aysha Saghir Muhammad, Sehrish Bari

To investigate the needs for speech and language therapy services in special education settings. To specify that the particular speech language and communication needs of an individual cannot be sufficiently met by

one clinician alone. A comprehensive survey questionnaire was employed to attain a clear view of the similarities and differences between the groups of professionals, their understandings of terminology, spoken language indicators of SLCN, associated academic needs, behavioral challenges, and professional barriers to meeting the children's needs. Fluctuations in the response pattern for both groups were observed when it came to an understanding of the latest terminologies associated with SLCN, SLP/Ts were predominantly more aware of the terms than special educationists. Special education teachers were unexpectedly more aware of the academic and behavioral features related to speech and language difficulties. However, training, advice, as well as resource availability, saw special educationists lacking whereas SLP/Ts showed a consistent pattern of having received the necessary training and resources. A special education environment is designed to fulfill an individual's needs, whether they be physical, sensory, cognitive, or communicative and to achieve that goal, a compatible team of healthcare professionals and special educators is crucial. In this particular scenario, there is an impending need for both speech-language pathologists/ therapists and special educators to understand the prerequisites of each other's role and more importantly how they can assist to provide better Individualized Education Plans (IEPs), improve peer and staff interactions, prevent undesired behavioral interactions, evolve the academic experience and the therapeutic intervention necessary to enhance the quality of life of an individual with speech-language and communication needs.

Keywords: Speech-language, Communication Needs (SLCN), Special Education Teachers, Special Education Settings, Multi-Professional Collaboration.

Frequency of Voice Changes during Covid-19 Infections: A Retrospective Study

**Janet Shanem, Muhammad Sikander Ghayas Khan, Muhammad Azam Khan, Aayeshah Firdous,
Sadaf Hameed, Arooba Asmat, Shabana Majid, Sabahat Khan, Tallat Anwar Faridi**

Communication is defined as the phenomenon found specifically in animal species. It was However, refined and modified only by the human species. Language and speech are two basic areas that fall under the umbrella of communication. With these processes also comes the impending danger of abnormal speech and language, leading to the development of their disorders. Objectives: Reporting the frequency changes in the voice of patients who are positive for covid-19. Methods: The application of a cross-section study type of retrospective nature was steered. Details were extracted from 2 trust hospitals in Lahore, UOL Teaching Hospital and Arif Memorial Hospital. Convenient-based sample accumulation technique was applied for data assembly from subjects. The Voice Handicap Index (VHI), was used for the evaluation of patient-perceived voice changes. Results: Data from 379 patients with Covid-19 infection was compiled. Shaky and weak voice, unclear voice, and change in voice observed at the end of the day were all highlighted as voice changes in subjects. Out of 379, 263 experienced shaky and weak voices to some extent which meant 69.4% of the participants experienced this. 241 out of 379 experienced problems with voice clarity and complained about not being able to speak clearly, meaning 63.6% faced this issue. 242

experienced a change of voice over time in an entire day, indicating 63.9% experienced this. Conclusion: Weak voice or having a shaky voice, having a voice that was not clear enough to be understood by others, and feeling a change in voice quality over the day were considered pointers of voice change. Collecting and analyzing the data, the investigation concluded that voice changes were observed in individuals during Covid19 infection.

Keywords: Voice Changes, Covid-19, Weak Voice

Parental Perspective Regarding Consanguineous Marriages as the Cause for Speech and Language Disorders in Pakistan

Iqra Irshad, Muhammad Azzam Khan, Bareera Saeed, Amna Rashid, Atif Ikram, Amreen Raheem, Fahad Masood, Atia-Ur-Rehman

Consanguineous connections are portrayed as connections between close relatives. These relationships are generally preferred in the majority of Asian and African nations, particularly in the Muslim nations. Nonetheless, these sorts of marriages have a higher risk of congenital anomalies and disorders in children. To determine the parental perspective regarding consanguineous marriages as the cause of speech and language disorders in children. The cross-sectional study was conducted through different hospitals and centers in Lahore, Pakistan (Mayo Hospital, Services Hospital, Autism Resource Center, and The University of Lahore Teaching hospital). The questionnaire was used and comprised of questions. Data was collected through a standardized questionnaire after taking the consent and was distributed among the consanguineous parents who have children with speech and language disorders. Parents were asked to complete the questionnaire. The data was collected using the online questionnaire as well. Results score was recorded for every respondent. The study showed that the majority of the people thought that consanguinity cannot lead to speech and language disorders in children. According to my research, although there is a higher frequency of speech and language disorders recorded among consanguineous marriages than in non-consanguineous marriages majority of the people had a trend and preference for cousin marriages.

Keywords: Consanguinity, Cousin Marriage, Parental Attitude, Speech Problems, Language Disorders, Perception, Pakistan

Opinion of Speech Language Pathologist/Therapist about Common Communication and Swallowing Difficulties in Children with Cerebral Palsy

Rabbiya Imtiaz, Hafsa Noreen, Atia U Rehman, Muhammad Sikander Ghayas Khan, Nayab Iftikhar, Saba Yaqoob

Children with cerebral Palsy experience a variety of speech, language, and swallowing difficulties. The nature and severity of these difficulties depend upon the type of motor impairment diagnosed in each child.

The objective of this study is to find out the opinion of speech pathologists/therapists regarding the common communication difficulties in children with cerebral palsy. The study included 212 speech-language therapists. Respondents were BS, MS, and diploma holders with the experience of 1 year or more dealing with children with cerebral palsy. Data was collected using a questionnaire developed by Literature Review and Expert Opinion Using Content Validity Index. It constituted 21 questions on different aspects of speech, language, and swallowing difficulties to gain therapists' opinions on the frequency of specific difficulties observed in their interactions with children having cerebral palsy. For results, Frequency and Percentages were calculated for the responses. Results indicated that Children with CP have a problem in attention deficit, problems understanding words, writing difficulties, Orofacial weakness, and also have articulation problems. It is concluded that Children with CP have communication and swallowing difficulties associated with impairments in oral motor function, expression and comprehension, and the functioning of oral and pharyngeal swallowing stages in children with cerebral palsy.

Keywords: Cerebral Palsy, Oral Motor Functioning, Pathologist, Expression, Comprehension, Deglutition

Awareness of Dyslexia among Primary School Teachers in Public and Private Setting in Lahore City, A Cross Section Survey

Iqra Mahnoor, Gulzar, Azzam Khan, Atia Ur Rehman, Saba Yaqoob, Aqsa Noor, Arjumand Sattar

The purpose of the study was to examine the awareness of primary school teachers in public and private settings in Lahore about dyslexia and to explore the factors that might be related to a better understanding of it. It was a comparative cross-sectional study with a total sample size of 100 teachers. Fifty public and fifty private primary school teachers in the mainstream of Lahore were administered the questionnaire. A questionnaire was constructed based on the existing literature and data was analyzed using SPSS. The results indicated that teachers' understanding of dyslexia varies greatly and there are gaps in their knowledge as well as misconceptions about this topic. The findings showed that there is a lack of awareness concerning the strategies and intervention programs for pupils with dyslexia. Finally, this dissertation makes recommendations concerning teachers' preparation as well as future research directions.

Keywords: Dyslexia, Mainstream, Primary School Teachers

Evaluating the Causative Factors that Lead to Rejection of Hearing Aids Among Young Adults Having Moderate to Severe Degree of Sensorineural Hearing Loss

Hafiz Muhammad Usama Basheer, Atia Ur Rehman, Humaira Waseem, Wajeaha Zaib

Hearing loss in young adulthood causes real stigma and a state of denial. The crucial clinical management to sustain hearing loss is hearing aid fitting, but most adult people reject it or do not use it. Many factors,

including social, personal, and device problems, lessen the usage of hearing aid. The objective of this study was to evaluate the causative factors which can lead to the rejection of hearing aids. This was a cross-sectional survey carried out in 9 cities of Punjab, Pakistan, using a convenient sampling technique during the summer of 2018. A total of 171 participants were included who were young adults ranging from 19-40 years. A questionnaire with 11 factors and a further 35 sub-reasons was given to the participants. Questions were close-ended in yes or no. Data were analyzed through frequency and percentages tabulation with SPSS software. Results showed that hearing aid value/speech clarity was the most problematic reason for patients to reject hearing aid. The given factor had four sub-reasons ('noisy situation,' 'poor benefit,' 'poor sound quality, and 'not suitable for the type of hearing loss). A total number of n=154 (90.05%) marked yes for facing poor sound quality followed by poor benefit n=141 (82.45%), not suitable for the type of hearing loss n=121 (70.76%), and noisy situation n=118 (69.00%), thus making hearing aid value the leading cause of rejection. The second leading cause was financial factors followed by situational factors, appearance, fit and comfort, device factors, psychosocial factors, ear infections, care and maintenance, attitude, and family pressure to use a hearing aid. The most prevalent cause of not taking up a hearing aid is the hearing aid value followed by financial factors, situational factors, appearance, fit, and comfort.

Keywords: Young Adulthood, Hearing Aids, Hearing Impairment, Rejection, Factors

Awareness of Parents of Hearing-Impaired Children About the Importance of Speech-Language Therapeutic Interventions

Nazia Sheikh, Bareera Saeed, Atia Ur Rehman

The importance of parental involvement of hearing-impaired children in their child's speech therapy cannot be denied. The current study aimed to determine parental awareness and involvement in the Speech language therapeutic interventions of hearing-impaired children. This was a cross-sectional study design, and a purposive sampling technique was used. Data were collected from 45 parents (male=32, female=13) of hearing-impaired children whose children received speech therapy from special education centers and schools in Gujranwala. The duration of the study was nine months, from June 2019 to February 2020. A related questionnaire was developed with the literature, and expert opinions (Cronbach's $\alpha=0.894$) were used to assess parental awareness and involvement in speech therapeutic interventions. Data entered and analyzed by SPSS version 23. Descriptive statistics were used to describe the demographic variables (age, gender) of the participants. Frequency and percent was used to assess the awareness and involvement of the parents of hearing-impaired children. The parental awareness survey showed that a total of 15 (33.3%) parents, both mother, and father, strongly agreed, and 24 (53.3%) agreed that speech therapy would be beneficial for their child, and results related to parents' involvement showed that 21 (46.7%) parents, both mother, and father, agreed, and 15 (33.3%) strongly agreed on their child's active involvement in speech therapy plans. The study included that most parents understand the importance of parental awareness and involvement in the therapeutic intervention of hearing-impaired children.

Keywords: Hearing Impairment, Parental Awareness, Parental Involvement, Therapeutic Intervention

Effectiveness of Linguistic Base Approach and Traditional Articulation Therapy to Improve Articulation Among Children (8-12 years) with Mild to Severe Hearing Loss

**Atia-Ur-Rehman, Muhammad Sikander Ghayas Khan, Hafsa Noreen,
Muhammad Azzam Khan**

Articulation errors are speech disorders, commonly found in children with hearing impairment. Traditional Articulation Therapy and Linguistic base Therapy are the most common therapies to intervene in errors. To evaluate the effectiveness of Linguistic base therapy and Traditional Articulation Therapy on articulation errors of children with mild to severe hearing loss. This comparative study was conducted at Hamza Foundation Academy for Deaf, Lahore, Pakistan from January 2018 to August 2018 on 10 patients with articulation errors. The sample was divided into two equal groups A & B (Group A, 5 individuals for linguistic base therapeutic approach and Group B, 5 individuals for Traditional Articulation Therapy). All patients were aged 8-12 years, had mild to severe hearing loss and used digital hearing aids. TAAPU (Test for assessment Articulation and Phonological Urdu) was used for pre and post-test for assessment of articulation. After the assessment, the Linguistic Based Approach and Traditional Articulation Therapy were applied to both groups. Both therapies were applied for 3 months, 3 sessions per week; session time was 30-40 minutes, (30 to 35 sessions per patient) the same test was conducted after therapy for post-assessment. There was a significant difference ($p < 0.001$) in the scores of Traditional Articulation Therapy (mean 104 ± 3.67) and Linguistics (mean 154 ± 3.63). The magnitude of the differences in the means (mean difference = -50.20 , 95% CI: -55.52 , -44.87) was large (eta squared = 0.9).

Keywords: Deafness, Hearing Loss, Articulation Disorders, Speech Disorders, Linguistics, Phonetics

Perception and Experiences of Undergraduate Students regarding Online Classes in Pandemic

Farwa Batool, Bareera Saeed, Atia-Ur-Rehman, Humaira Waseem

Education has undergone significant transformations, with the emergence of e-learning, in which instruction is done remotely and via digital platforms due to the coronavirus pandemic. To explore the experiences and perceptions of undergraduate university students on online classes under the coronavirus pandemic situation in Pakistan. A qualitative study was conducted at the University of Lahore. A total of 16 students were selected. The information obtained from the Participants was in the form of audio recordings which were finally transcribed. Students' views and experiences were interpreted by using Interpretative Phenomenological Analysis (IPA). Five super-ordinate themes that emerged from the data were difficulty in online classes, acceptance of online classes, policy for online learning, learning experiences, and outcomes of online classes. Some students have difficulty in online classes because of internet issues, network issues, or environmental issues. Some face difficulty understanding because of the interruption of voice. Some have difficulty performing practical work. Result themes show that different factors and

problems which were student-facing during online classes. Evidence base study showed that online learning has immense importance during pandemic COVID conditions in Pakistan. Formal education is being revolutionized by online classes, which have opened up new opportunities for cultural and scientific outreach. These courses include a collection of lessons for a web browser or mobile device that can be conveniently accessed anywhere. In online settings, students may have more distractions and less oversight, which can reduce their motivation

Keywords: Coronavirus, Virtual Learning, Online Classes, Undergraduate Students, Qualitative Study

Understanding the Context of Education in an Urban Slum: A Case of Babu Sabu, Lahore

Mehek Naeem, Naeem Zafar, Atia-ur-Rehman, Waseem Akram

Article 25 A of the Constitution of Pakistan stipulates that free and compulsory education must be given to all children between the ages of 5 and 16. However, there are gaps in its implementation leaving out pockets such as children in slums. Non-government organizations (NGOs) play an essential part in bridging the said gaps. This study explored the context of education in a slum area located at Babu Sabu Interchange, Lahore where an NGO PAHCHAAN (Protection and Help of Children against Abuse and Neglect) is providing non-formal education to children via community engagement. The current study explored the context of education in a slum where intervention is already implemented through/using the case study method. A survey from all the households in this area (N=26) and a focus group discussion with six mothers were conducted. The results showed a positive attitude of the mothers towards the education of their children, as 65.4% of the participants strongly agreed that it is essential to get children enrolled in schools. The findings from the focus group discussion highlighted several challenges such as the lack of financial resources, the distance of the school from the slum area, the lack of acceptance of over-aged children, and a difficult admission procedure. Bullying and cursing were, however, the leading cause of dropping out of regular schools. This preliminary study highlights the importance of taking a strategic approach towards “education for all,” looking at deep-rooted issues so that no child is left behind.

Keywords: Education Challenges Children, Education, Slums

Impact of Online Classes during COVID-19 Pandemic Situation on Undergraduate University Students Pakistan

Farwa Batool, Bareera Saeed, Atia-Ur-Rehman, Humaira Waseem

The COVID-19 detected in schools, colleges, and universities closed the entire world. More than 1.2 billion kids were not in the classroom worldwide. Consequently; education has altered considerably, among the characteristic increase of relearning, whereby education is under-taken distantly as well as upon digital platforms. The research recommended that online education has been revealed to raise maintenance of

knowledge, moreover acquire not as much time, denotation alter coronavirus comprise cause might be now to reside. To find out the impact of online classes on the COVID-19 pandemic situation among undergraduate university students of Allied Health Sciences, The University of Lahore. A cross-sectional study design was conducted for this research. The study was conducted at The University of Lahore, Lahore campus, department of Health Professional technologies. The sample size was 67. Data was analyzed and evaluated with the help of the statistical package for social sciences SPSS-V20. A total of 67 students participated in the research. Participants' age range was 19 to 25 years. 70% of females and 29.9% of males participated in this research. 41.8% of participants reported that they are facing difficulties in online classes while 3% of participants were slightly disagreeing with it. 53.7% of participants were disagreeing with learning satisfaction in online classes while 29.9% were strongly disagreeing. This study concluded that despite gaining immense popularity today, digital technology has still not been embraced by students for use in teaching. Students are still more inclined toward the face-to-face teaching rather than e-teaching

Keywords: Covid-19, Pandemic, Online Classes, Virtual Classes, Undergraduate Students

Association Between Screen Timing and Delayed Language Development Among Toddlers and Preschoolers

Hafsa Basit, Atia-Ur -Rehman, Humaira, Waseem, Farzeen Sarwar, Nazia Yousaf

The exact cause of language delay remains unknown but multiple predisposing factors can cause delay. During the current situation, the use of screen media increases among the person of every age. Screen timing can be one of the factors contributing to language delay. To assess the relationship between screen timing as well as delayed language development among toddlers and preschoolers. A cross-sectional study was conducted at tertiary care hospitals in Lahore for 4 months. 201 participants were selected using the purposive sampling technique. The linguistic abilities of participants have been assessed through the Ages and Stages Questionnaire-3rd Edition. Data about screen timing were collected from the kid's parents through interview-based questions. Data were analyzed using SPSS Version 21.0. The mean score of participants on a scale of screen timing was 12.5572, (SD= .94232) and on a scale of language, the assessment was 44.681, (SD= 25.46307). The correlation between screen time and delayed language development was significant (0.05). 49.3% of participants had 2-4 hours of screen time, 65.2% of participants used both tablets and TV, 61% of the population started using screen media before the age of one year, 54% of the population watched only videogames and cartoons, and 65% of parents never involve during the screen timing of their child. It was concluded from the current study that screen time is negatively related to language development as well as can be one of the factors which can cause and worsen language delay.

Keywords: Screen Timing, Screen Media, Tv, Language Delay, Kids

Advantages of Smart Phone Hearing Aids Over Traditional Hearing Aids

Methods

**Kaleem Abbas, Atia-Ur-Rehman, Waris Ali, Ambreen Sadaf, Humaira Waseem,
Noman Tahir**

Hearing is the process by which the ear transforms sound vibrations in the external environment into nerve impulses that are conveyed to the brain, where they are interpreted as sounds. A hearing aid is a small electronic device that you wear in or behind your ear. It makes some sounds louder so that a person with hearing loss can listen, communicate, and participate more fully in daily activities. A hearing aid can help people hear more in both quiet and noisy situations. To find out the Advantages of smartphone hearing aids over traditional hearing aids.

Keywords: Audiologist, Hearing Aids, Satisfaction

Effects of Sensorimotor Problems on The Performance of Activities of Daily Living in Children with an Autism Spectrum Disorder

Sheza Ahmed, Atia ur Rehman, Humaira Waseem, Ambreen, Sadaf, Rabia Ashiq, Sybil Rose Hafsa Basit

Sensory-motor problems are the main clinical features of autism spectrum disorder (ASD). Due to sensory-motor problems, individuals with autism spectrum disorder face difficulties in performing their daily living skills. The objective of this study was to determine how sensory-motor problems affect the performance of activities of daily living in children with an autism spectrum disorder. The study was conducted in Rehab care school for special children and Hamza Montessori School for special children. Data was collected by using a purposive non-random sampling technique for 4 months. A cross-sectional study design was used. 60 patients from both genders were included. Sample selection criteria included children with autism spectrum disorder with an age range of 4-15 years. A sensory profile questionnaire based on Ayers sensory integration theory and the Standardized Barthel index scale were used to determine the impact of sensory-motor problems on the performance of activities of daily living the results showed that visual processing disorders were highly affecting the performance of activities of daily living. It was concluded that most children with autism spectrum disorder have sensory-motor problems. The performance in activities of daily living is affected by sensory-motor problems, especially visual processing problems. Visual processing shows that children have difficulty performing activities like dressing, eating, and toileting.

Keywords: Autism Spectrum Disorder, Activities of Daily Living, Sensory-Motor Problems

Acoustic and Speech Perceptual Evaluation of Health-Related Quality of Life among adults with Chronic Supportive Otitis Media

Tahira Nomani, Atia Ur Rehman, Munaza Hayat, Farhan Akbar, Muhammad Adnan Anwar, Salma Ambreen, Shahab, Muhammad Saad Faisal

Chronic Suppurative Otitis Media, patients suffer from hearing loss causing communication problems and social withdrawal. To assess the acoustic and speech perceptual evaluation of the health-related quality of life among adults with Chronic Suppurative Otitis Media. This cross-sectional study was performed in ENT/Audiology Departments of District Headquarter Hospital, Hafizabad, and Saqib Bashir General Hospital, Hafizabad, from March 2015 to September 2018, after the approval of the synopsis. A convenient sampling method was used to induct 101 patients with Chronic Suppurative Otitis Media meeting inclusion criteria. Pure tone audiometry and speech audiometry were performed. A statement-based questionnaire COMOT-15 was used to measure the scoring difference in cases. The mean age of patients was 33±10 years and 53 (52.47%) were male. Out of 101 patients, the speech deficit was moderate in 7 (6.93%) patients, moderately severe in 19 (18.81%), severe in 42 (41.58%) and speech deficit was profound in 33 (32.67%) patients. There were 10 (9.90%) patients with a conductive type of hearing loss, and 91 (90.09%) with a mixed type of hearing loss. Chronic Otitis Media Outcome Test-15 (COMOT-15), overall score was between 41-50 in 11 (10.89%) patients, 51-60 in 62 (61.38%) patients and Chronic Otitis Media Outcome Test-15 (COMOT-15) overall score was between 61-70 in 28 (27.72%) patients. This study showed that speech deficit was severe to profound in the majority of patients with Chronic Suppurative Otitis Media. A mixed type of hearing loss is the commonest type of deafness and very high scores were observed on the COMOT-15 scale, which reflects a significant impairment in quality of life.

Keywords: Chronic Suppurative Otitis Media, Pure Tone Audiometry, Speech Recognition Threshold, Quality of Life.

Effectiveness of the Social Communication Emotional Regulation and Transactional Support (Scerts) Model-Based Intervention in Language Development and Fostering Social Communication in Children with Autism Spectrum Disorder

Hafsa Fiaz, Atia Ur-Rehman.

Social Communication Emotional Regulation Transactional Support (SCERTS) model is based on studies and has manuals for assessing children and designing individual treatment plans. However, limited research has been done to evaluate the efficacy of this model. This study attempts to evaluate the impact of SCERTS model-based intervention on children with autism spectrum disorder (ASD) in Lahore to determine the usefulness of SCERTS in promoting language development and improvement in social skills in children with ASD. This quasi-experimental study was conducted at Roots and Wings autism center, located in Bahria Town Lahore, for nine months. Children with a formal diagnosis of autism spectrum disorder, with

an age range of 3 years to 6 years old. Before intervention and subsequently, after that, the children were evaluated with the portage checklist in the domain of language and socialization skills. Participating children demonstrated improvement in their language and social skills after the intervention, as assessed by portage. SCERTS-based intervention can facilitate children with an autism spectrum disorder to improve their language and social communication skills.

Keywords: Quasi-Experiment, Social Communication, Language Development, Autism Spectrum Disorder, Secrets Model.

Emotional and Behavioral Difficulties among Children and Adolescents with Cochlear Implants

Madiha Tufail, Hafza Munaza Hayat, Atia Ur Rehman, Munawar Ahmed Malik, Farwa Batool Sabih, Arshad Mehmood Naz

In most industrial nations, the rate of pediatric cochlear implantation (CI) has improved to the point where it is now the biggest response to profound and, gradually more, severe babyhood deafness. To find emotional and behavioral difficulties among children and adolescents with cochlear implants Centre Pakistan Cochlear Implant Program in Bahria Town Lahore. It was a cross-sectional study with 68 children and adolescents with cochlear implants, (37 males and 31 females), participated. All participants were 6 to 17 years old and were using cochlear implants for more than 2 years. Data were collected from parents or guardians of participants through the Strength and Difficulties Questionnaire parental or guardian version (4-17 years), from Audiology Centre Pakistan Cochlear Implant Program in Bahria Town Lahore. Data were analyzed by SPSS version 20.0. An independent sample t-test was conducted to assess differences between male and female participants, a p-value less than 0.05 was considered significant. It was found that there was a significant difference in mean psychosocial difficulties, emotional problems, and conduct problems among male and female children and adolescents with cochlear implants. But there was no significant gender difference in participants in hyperactivity, peer problems, and pro-social behavior. That male and female had significant differences in emotional and behavioral difficulties. Males had higher mean psychosocial difficulties and more emotional and conduct problems than females.

Keywords: Children, Adolescents, Cochlear Implants, Emotional, Behavioral Difficulties

Factors Affecting the Speech Nasality in Children with Cleft Palate

Arooba Asmat, Atia-Ur-Rehman, Humaira Waseem, Insbat Asmat, Hafiz Muhammad Usama Basheer, Azmat Rehmat, Menail Zaheer

A Cleft palate is a congenital deformity affecting the speech production skills of children born with it. Pakistan has the 4 largest number of cleft births in the world. Gender values, family history, and age greatly affect speech nasality in children with cleft palate. To determine the factors affecting speech nasality in children with cleft palate. A total of 120 children with cleft palate, ages ranging from 8 to 12 years were

selected by cross-sectional purposive sampling method, selected from Clapp General Hospital, Lahore. Demographic data were collected in terms of age, gender, family history, and cousin marriage, by modifying Temple Street Scale. SPSS version 21.0 was used for data analysis. The descriptive analysis of age revealed that the highest frequency of speech nasality was at 9 years (35%). The gender distribution indicates an increased percentage of speech nasality (62.5%) in males than females. The frequency of children having family histories was 99 (82.5%). The frequency of consanguineous marriages was higher (83.3%) than the non-consanguineous (16.7%). It was concluded that gender, age, and genetics greatly affect the speech nasality of individuals with cleft palate. So, these points must be considered seriously because prevention is better than cure.

Keywords: Cleft Palate, Speech, Nasality, Temple Street Scale, Consanguineous, Genetics

Effect of Social and Self Stigma on Hearing Aid Rejection

Hafiz Muhammad Usama Basheer, Atia Ur Rehman, Humaira Waseem, Arooba Asmat, Fatima Zafar, Asma Zulfiqar, Sehrish Razzaq

Hearing loss creates emotional and behavioral imbalance thus leading to stigma. The stigma, whether social or self, leaves a great impact on the uptake of hearing aids. For a proper provision of hearing aids to the patients, it is necessary to deal with stigma. To determine the effect of social and self-stigma on hearing aid rejection. A cross-sectional study was conducted among 52 individuals. All were young adults with an age range of 19-40 years. These all had moderate to severe sensorineural hearing loss and were recommended with hearing aids. A self-structured questionnaire with seven items was given to the participants. Data were analyzed through SPSS version 21.0 and presented through frequency and percentages and were collected from different cities of province Punjab, including Lahore, Qasoor, Pakatan, Chishtian, Burewala, Lodhran, Okara, Multan, and Bahawalnagar by using a convenient sampling technique. It was found that 70% of the participants rejected hearing aids due to social and self-stigma. It was concluded from the study that social and self-stigma causes fear of not using a hearing aid.

Keywords: Stigma, Hearing Aid, Hearing Impairment

Prevalence and Risk Factors for Occupational Voice problems in Teachers

Atia Ur-Rehman, Seema Arif, Hafiza Munaza Hayat, Ali Kamran, Sana Shakeel

Several teachers are teaching all over Pakistan among private and public institutes. Voice problem is specified to be one of the major occupational risks of teachers the teachers frequently use their voice with high intensity in a noisy environment for a long time and without voice rest. To determine the prevalence and risk factors for occupational voice problems in teachers. A cross-sectional survey was conducted on 120 teachers, through a pre-tested questionnaire at 10 different schools and colleges in Gujranwala district

Pakistan. Results showed that the prevalence of voice problems was greater in female teachers as compared to male teachers. Among the risk factors, the long duration of the job was more dominant. Teachers develop voice problems during professional life due to risk factors that included personal issues, noisy environment, and psychosocial factors.

Keywords: Voice Problems, Prevalence, Symptoms, Risk Factors, Voice Disorder

Comparison Between the Satisfaction Level of Digital and Analog Hearing Aid Users

Naima Khan, Atia Ur Rehman, Waris Ali, Humaira Waseem

Hearing loss is the most common disability, affecting more than 250 million people in the world. A hearing aid helps to amplify the residual hearing. To carry out the comparison between the satisfaction level of digital and analog hearing aid users. This comparative study was conducted at various private clinics and hospitals in Lahore from November 2017 to April 2018. A total of 100 patients were included of which 50 were digital hearing aid users and 50 patients were analog hearing aid users. In our study (52%) digital hearing aid users used the hearing aid for more than eight hours a day and most analog hearing aid users (40%) used it for four to eight hours a day. 66% of digital hearing aid users had no difficulty whereas 40% of analog hearing aid users had moderate difficulty when they wanted to hear better. 58% of people were not bothered at all by digital hearing aid users and 12% were not bothered by analog hearing aid users. It is concluded from this study that digital hearing aid users seem to be more satisfied with their hearing aids as compared to analog hearing aid users. So whenever possible people with hearing impairment should be fitted with digital hearing aids to get better results and hence improve their quality of life.

Keywords: Satisfaction, Digital Hearing Aid, Analog Hearing Aid

Assessment of the Level of Communication Anxiety of the Children with Repaired Cleft Lip and Palate

Farzeen Sarwar, Atia-Ur-Rehman, Humaira Waseem, Saba Yaqoob

Generally, it is assumed that children with cleft lip and palate do not perform psychologically well in their environment and society due to communication anxieties. To assess the level of communication anxiety of the children with repaired cleft lip and cleft palate. In cross-sectional research conducted at CLAPP hospital Lahore, 134 participants with repaired cleft lip and cleft palate were included through the Purposive sampling technique. Children with an age limit between 6-18 years were included. Children with other craniofacial abnormalities were excluded and repaired cleft lip and palate were included. Data were collected by the Communication Anxiety Inventory scale. Data were analyzed with the help of the SPSS 21 version. Out of 134 children, there were 61 boys and 73 girls. 49 (36.5 %) lie in 6-12 years of age and 85(63.4%) patients lie in 13-18 years. The average score of communication anxiety in dyadic was

16.51+2.856. 58.9% communication apprehension in the dyadic domain. The average score of communication anxiety in small groups was 18.44+2.588. 65.85% communication apprehension in small groups. The average score of communication anxiety in public speaking was 17.46+2.31. 62.35% communication apprehension in the public speaking group. It is concluded that there are significant differences in communication apprehension of the children having repaired cleft lip and cleft palate.

Keywords: Anxiety, Craniofacial Abnormality, Repaired Cleft Lip, Cleft Palate, Communication

Relationship among Sensory Issues and Repetitive Behaviors in Children with Autism Spectrum Disorders

Ambreen Sadaf, Atia-Ur-Rehman, Humaira Waseem, Sybil Rose, Umair Ahsan, Kaleem Abbas, Wajeeha Abdul Ahad

Sensory issues and Repetitive Behaviors are the key features of Autism Disorder Syndrome (ASD). This is a neurodevelopmental condition marked by social communication impairments and the occurrence of restricted and repeated behavioral habits and desires, including irregular responses to sensory stimuli. To reconnoiter the link between sensory and repetitive behaviors in children with an autism spectrum disorder. The research took place at Rehab Care School and Hamza Montessori School. Data were collected using a non-random sampling methodology over 4 months. Data were collected. Development of cross-sectional analysis was used. Seventy-five patients were drawn from both sexes. We included children with a 4–15-year age autism spectrum disorder. Sensory profile to assess the effect of sensory issues on the actions of the infant, a checklist was developed based on the Winnie Dunn Sensory Integration Theory (SIT) and a repetitive behavior scale. There was a substantial relationship between the sensory issues and the repetitive behaviors, as the sensory issues increase the repetition of behavior also increases. Mostly occurring behaviors due to the occurrence of sensory issues were self-injurious and compulsive behaviors of kids with ASD. Most kids with autism spectrum disorder have sensory issues. It was concluded. The sensory issues are related to repetitive behaviors.

Keywords: Sensory Profile, Repetitive Behavior, Autism Spectrum Disorder, Sensory Integration Theory

Relationship of Anxiety and Repetitive Behaviors Among Autistic Children

Rabia Qamar, Atia Ur Rehman, Tahira Ashraf, Azam Khan, Saba Yaqoob, Arooj Fatima, Ambreen Gill

Children with Autism Spectrum Disorder are vulnerable to anxiety. Repetitive behaviors are a core feature of autism spectrum disorder (ASD) and have been associated with anxiety. This study examined repetitive behaviors and anxiety in two groups of children with autism spectrum disorder, those with high anxiety and those with lower levels of anxiety. To compare the mean Repetitive Behavior score among Autistic

Children with and without Anxiety. It was a case-control study. The data were collected from Hamza Montessori School for special children, Lahore. The study duration was 5 months. Purposive sampling was used to select only autistic children in the study. The calculated sample size was 12 however due to the requirement of the minimum sample size, 30 subjects were taken in each group. Data will be analyzed and evaluated with the help of the Statistical Package for social sciences (SPSS) version 20.0. In findings, between anxious and non-anxious groups SCAS-P total and its subscale scores reported significantly different. Due to higher scores on a specific anxiety subtype, it represented that the level of anxiety was not accounted for. Only the p-value of repetitive behavior skills was significant in the anxious group. Our study concluded that in children with ASD there is a differential relationship between repetitive behaviors of anxious and non-anxious. Our information proposes analysts and clinicians ought to think about the part of tension when understanding and treating RRBs in youngsters with ASD.

Keywords: Autism, Anxiety, Repetitive Behavior

Estimation of Resonance in Individuals with Repaired Cleft Palate by Using Temple Street Scale

Asmat Arooba, Atia Ur-Rehman, Malik Munawar Ahmed, Mahmood Arshad, Asmat Insbat

The objective was to estimate resonance in individuals with repaired cleft palate by using Temple-Street-Scale by cross-sectional sampling study. Data was collected from Clapp General Hospital, Lahore. This study was conducted by modifying Temple Street Scale after consent focusing on nasality, and nasal emission. A total of 60 individuals with repaired cleft palate, ages ranging from 8-15 years with evidence of resonance disorders were recruited for the study. Results showed that the percentage of ages of an individual with repaired cleft palate was high rate at 12 years (22%) which was high in males. The percentage of hyper-nasality (90%) at mild-moderate (26.7) level was higher than other resonance problems with a consistency of 67%. The frequency of nasal emission was 83% with a consistency of 63%. The frequency was notable among individuals with repaired cleft palate, having different levels, consistency, and frequency. So, it was concluded that individuals with cleft palate must follow proper speech-therapy sessions after repairing the cleft for a better prognosis.

Keywords: Cleft Palate, Nasality, Resonance, Temple-Street Scale

Comparison of Health-Related Quality of Life in Children with Normal Hearing and Those with A Cochlear Implant at Age of 4-6 Years

Noreen Anwar, Munazza Hayat, Atia Ur-Rehman, Tayyaba Dawood, Adnan Anwar, Waris Ali

Hearing impairment during early life years has profound negative consequences on linguistic output, educational, psychosocial, and physical functioning. Auditory perception plays a key role in the development of the child. Severely hearing-impaired children receiving cochlear implant (CI) before the

Keywords: Normal Hearing, Hearing Loss, Quality of Life, Cochlear Implant

Compare the Level of Satisfaction among Smart Phone and Traditional Hearing Aids Users

Kaleem Abbas, Sadia Nawaz, Affaf Ijaz, Waris Ali, Atia-Ur-Rehman, Hammad Ashraf Mustafai, Humaira Waseem, Baber Ali, Rimsha Tariq

Hearing is crucial for human life, it undertakes an important job in dissertation and linguistic development, which is the fundamental device for the advancement of human correspondence. People with hearing impedance may endure extreme misfortune in their social, mental, and proficient lives, dread, misery, disengagement, and family strains as a result of the absence of consideration influencing those with hearing disorders. To compare the level of Satisfaction between smartphone hearing aids and traditional hearing aids users. A **cross-sectional** study was conducted among Hearing aid users with smartphone hearing aids and traditional hearing aids using the purposive sampling techniques (Satisfaction with amplification in daily life) was used to measure the satisfaction level between smartphone hearing aid users and traditional hearing aids users. 100 applicants with moderate to severe sensorineural hearing loss of age range from 18 years to 35 years recommended for hearing aids fitting were included in this research by their consent. Data for this research was collected from Sialkot, Lahore, Narowal, and Gujranwala, Pakistan. The data of 100 participants were analyzed through SPSS version 25. O and P-value less than 0.05 was considered significant. A total number of 100 participants were included which there were 50 males and 50 females. Out of 100, 53(53%) participants belong to the age group of (26+35) years and 47(47%) participants belong to the age group of (18+26) years. For the participants who were using traditional hearing aids, where the level of satisfaction was 48.0 ± 3.915 and the level of satisfaction in the participants who were using smartphone hearing aids was 53.95 ± 4.17 . Smartphone hearing aids users were more satisfied than traditional hearing aids users. It was concluded that smartphone hearing aids users to have more satisfaction levels as compared to traditional hearing aids users.

Keywords: Audiologist, Audible Range, Hearing Loss, Smartphone Hearing Aids, Traditional Hearing Aids.



Department of Nutritional Sciences

Hyperhomocysteinemia as an Independent Risk Factor for Coronary Heart Disease-Comparison with Conventional Risk Factors

R. Muzaffar, M. A. Khan, M. H. Mushtaq, M. Nasir, A. Khan, I. Ul Haq, J. Muhammad

The present study was designed to evaluate the strength of association of raised plasma homocysteine concentration as a risk factor for coronary heart disease independent of conventional risk factor. It was a case control study conducted at Punjab Institute of Cardiology Lahore. A total of 210 subjects aged 25 to 60 years comprising of 105 newly admitted patients of CHD as cases and 105 age and sex matched healthy individuals with no history of CHD as control were recruited for the study. Fasting blood samples were obtained from cases and controls. Plasma homocysteine was analyzed by fluorescence polarization immunoassay (FPIA) method on automated immunoassay analyzer (Abbott IMX). Total cholesterol, triglyceride and HDL cholesterol were analyzed using calorimetric kit methods. The concentration of LDL cholesterol was calculated using Friedewald formula. The patients were also assessed for traditional risk factors such as age, sex, family history of CVD, hypertension, smoking and physical activity, and were compared with control subjects. The collected data was entered in SPSS version 24 for analysis and interpretation. The mean age in controls and experimental groups were 43.00 ± 8.42 years and 44.72 ± 8.59 years with statistically same distribution (p -value = 0.144). The mean plasma homocysteine for cases was 22.33 ± 9.22 $\mu\text{mol/L}$ where as it was 12.59 ± 3.73 $\mu\text{mol/L}$ in control group. Highly significant difference was seen between the mean plasma level of homocysteine in cases and controls ($p < 0.001$). Simple logistic regression indicates a strong association of coronary heart disease with hyperhomocysteinemia (OR 7.45), which remained significantly associated with coronary heart disease by multivariate logistic regression (OR 7.10, 95%CI 3.12-12.83, $p=0.000$). The present study concludes that elevated levels of Plasma homocysteine is an independent risk factor for coronary heart disease independent of conventional risk factors and can be used as an indicator for predicting the future possibility for the onset of CVD.

Keywords: Coronary Heart Disease, Homocysteine, Risk Factor, Cardiovascular, Diseases, Family History

Association of Dietary Factors with Plasma Homocysteine and Coronary Heart Disease Outcome

Rizwana Muzaffar, Muhammad Athar Khan, Muhammad Hassan Mushtaq, Muhammad Nasir, Mamoona Chaudhry, Muhammad Fayaz Khan, Amjad Khan

The aim of the present study was to investigate the association between serum levels of vitamins B12, B6, folic acid and hyperhomocysteinemia with the risk of coronary heart disease (CHD). A case control study was carried out involving 105 newly diagnosed coronary heart disease patient of both gender (age range 25–60 years) and 105 age and sex matched normal healthy individuals at Punjab Institute of Cardiology, Lahore. Fasting blood samples were collected from both cases and controls. Sera were analyzed for folic acid, vitamin B6 and B12 using high performance liquid chromatography (HPLC). Plasma homocysteine was analyzed by fluorescence polarization immunoassay (FPIA) and traditional risk factors were also

assessed. Mean plasma homocysteine level in cases ($22.33 \pm 9.22 \mu\text{mol/L}$) was significantly higher ($P = 0.0001$) than controls ($12.5 \pm 3.73 \mu\text{mol/L}$). Mean serum folic acid concentration, serum vitamin B6 and vitamin B12 were significantly lower in cases than the mean levels in controls ($P < 0.05$). When compared to controls the data revealed significantly greater deficiency of folic acid, vitamin B6 and B12 in coronary heart disease patients. Statistically significant inverse correlation was observed between folic acid, vitamin B6, B12 and plasma homocysteine concentration ($r = -0.463$, $r = -0.431$ and $r = -0.294$, respectively). Nutritional deficiency of folic acid, vitamin B12 and B6 were common in coronary heart disease patients with an inverse correlation of plasma homocysteine concentration with these vitamins. Substantial deficiency of these vitamins along with hyperhomocysteinemia could be further aggravating the risk of CHD in Pakistani population.

Keywords: Coronary Heart Diseases, Homocysteine, Dietary Factors, Vitamin B6, Vitamin B12, Folic Acid

Correlation Between Homocysteine and Lipid Levels in Patients with Ischemic Heart Disease

Rizwana Muzaffar, Muhammad Athar Khan, Muhammad Zahid Latif, Muhammad Hassan Mushtaq, Muhammad Nasir

To determine the correlation between homocysteine and lipid profile in patients with ischemic heart disease. This cross-sectional study was conducted on patients of ischemic heart disease aged 25-60 years admitted in coronary care unit of Punjab Institute of Cardiology Lahore after ethical committee approval from 1st November 2014 to 31st October 2014. Fasting venous blood samples were obtained from the participants to measure the plasma homocysteine levels and lipid profile. The patients were also assessed for traditional risk factors such as age, sex, family history of CVD, hypertension, smoking, dyslipidemia and physical activity. The data was analyzed through SPSS version 22. Coefficient of correlation (r) was calculated to establish correlation between the variables. Total 105 patients were included. The mean age of the study population was 44.7 ± 8.59 years. Among 105 participants 79 (75.2%) were males. The value of coefficient correlation (r) for total cholesterol and Homocysteine was 0.189 ($p = 0.006$), for triglycerides and homocysteine was 0.12 ($p = 0.082$), and for LDL-C and homocysteine was 0.295 ($p = 0.000$) showing weak positive correlation among the variables. On the other hand, the value of coefficient correlation for homocysteine and HDL-C represent a moderate negative correlation between these variables. The study revealed that homocysteine has significant but weak correlation with Total C, Triglycerides, and LDL-C showing that in patients with high homocysteine level the level of these biomarkers is also found to be raised and vice versa. On the other hand, homocysteine has moderately weak correlation with HDL-C i.e., in patients with high level of homocysteine, the level HDL-C was found to be decreased.

Keywords: Homocysteine, Lipid Profile, Ischemic Heart Disease, Cardiovascular Diseases

Consumption of Milk and Milk Products Among Young People of Pakistan

Zoha Sohail

Consumption of milk and milk products between 10-24 years of age is chief important; a crucial bone development age and during recent years consumption of milk and milk products had been decreased among young people. Current study was aimed to investigate the consumption of milk and milk products among young people of Pakistan. Study design was Cross-sectional; two hundred individuals aged 10-24 years were selected via convenient sampling. Self-structured questionnaire with a combination of closed and open ended questions was used for data collection. Study provided that 152(76%) sample consumed milk once daily 298 ± 234.90 ml and 48(24%) did not consumed milk. Results concluded that the consumption of milk and milk products among young people was low as compared to the recommended dietary allowances; thus a need to provide knowledge regarding the importance of milk consumption to assist in reducing bone health disorders.

Keywords: Bone Health, Recommended Dietary Allowances, Milk Consumption, Young People

Effect of Morus Alba (White Mulberry) Leaf on HbA1c of Patients with Type II Diabetes Mellitus

Zoha Sohail, Nighat Bhatti, Saima Naz, Amna Iram, Saghir Ahmad Jafri

Diabetes mellitus is a wide spread metabolic disorder characterized by hyperglycemia. In Pakistan, many traditional or medicinal plants are being used to treat ailments or disorders, both in children and adults. To date, there has been no research study done to investigate the effect of Morus alba (white mulberry) leaves on blood glucose levels of individuals with type II diabetes mellitus in Pakistan. The present study was conducted to determine the effect of Morus alba (white mulberry) leaf powder on glycated haemoglobin (HbA1c) of patients with type II diabetes mellitus. The study design of this study was a randomised controlled trial. Eighty patients with type II diabetes mellitus were randomly selected from the Fatima Memorial Hospital and were equally divided into two groups - control group and experimental group. Patients in the control group were asked to follow their regular hypoglycaemic medications, while patients in the experimental group were administered with 500mg of Morus alba leaf tablet twice a day, 15 minutes before breakfast and dinner, along with their regular hypoglycaemic medications. HbA1c of patients in both groups were assessed on day zero before the study and on the ninetieth day at study completion. HbA1c of patients in the control group at baseline was 8.92% and 8.91% at final, whereas HbA1c of patients in the experimental group at baseline was 9.13% and 8.59% at final. The results of this study concluded that Morus alba leaves had a significant effect in lowering high blood sugar levels.

Keywords: Deoxynojirimycin-1, Diabetes Mellitus, Morus Alba, HbA1c



The Magnet Model: A Solution to Nursing Empowerment in Pakistan

Faisal Nadeem

Pakistan is a developing country which has modest health resources while health resources are not used efficiently in private and public health settings. Interventions should be used efficiently considering resources to give maximum health benefits to population at large level. There is also need of logical and research based approaches that decrease burden of disease, having cost effective analysis with equity basis in the society. Therefore, multiple scientific approaches are essential in clinical settings to deal with different health issues.

Keywords: Priority Setting, Equity, Health Care Disparities, Nonmaleficence

Priority Setting from the Lens of Justice in the Existing Health Care Industry of Pakistan

Faisal Nadeem

Nursing is a challenging job and empowering employees at both individual and organizational level is becoming important. Empowerment encourages employees to take initiatives and react to job related challenges in creative ways. Empowered employees are enthusiastic, well-organized at work and job satisfied. According to Moore, a blend of Structural-empowerment and Magnet-model empowers workforce through opportunities, resources, information and support by formal and informal power, however, transformational leaders lend a hand to attain organizational vision.

Keywords: Job Satisfaction, Power, Empowerment, Resources, Support, Opportunity, Information, Transformational Leadership

Florence Nightingale's Environmental Theory and its Impact on Patients Heath Care Case Study

Faisal Nadeem

Theoretical framework is the essence of nursing practice; it serves as an organizing paradigm for a body of knowledge. This manuscript will describe a clinical picture which was analyzed through Environmental Theory of Florence Nightingale; this theory comprises 13 environmental canons that are described in detail. The most important canons are; ventilation, light, noise, cleanliness of rooms/walls, bed and bedding, personal cleanliness, and taking food. She emphasizes the importance of modification of environmental canons to refurbish patient healthiness in the best natural ways. The same importance is reflected in the respected clinical picture. Therefore, a great need is felt to incorporate Nightingale's pioneer work that provides a base to practice nursing holistically even in this modern era. Following recommendations can be made from this scenario; (a) Improving hospital/house infrastructure with good ventilation and light (b) hospitals should be noiseless/smokeless (c) raising awareness regarding environmental hygiene at

community level through mass media, community nurses and health visitors. Healthcare practices can be improved in developing countries by taking these measures.

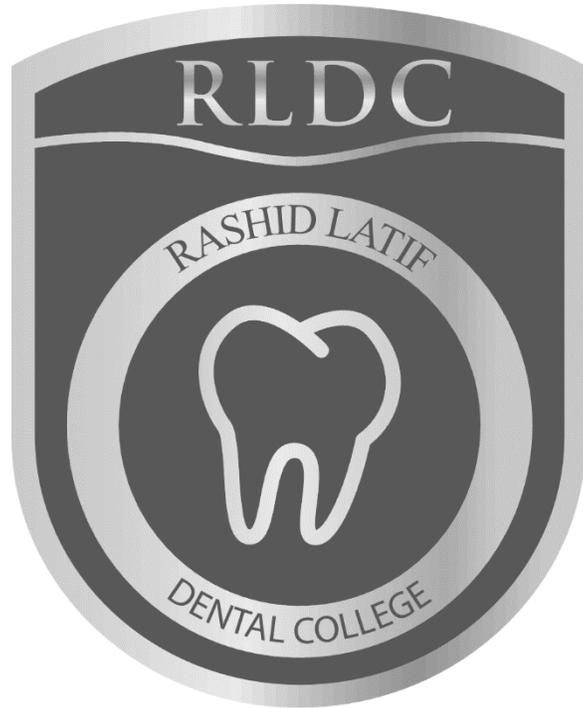
Keywords: Florence Nightingale, Environmental Theory, Practical Application at Clinical Area, Theory, Theory Analysis

What to follow; Problem Based Learning or Traditional Teaching?

Faisal Nadeem

Many pedagogies in nursing education are developed to boost students' critical thinking skills. Problem – based learning (PBL) is the widely used methodology to enhance nursing students' Critical thinking skills and to solve the practical problems in the clinical and academic areas Independently. Globally many studies have examined the effects of PBL on nursing students' Learning outcomes and others have studied the association among the outcomes. In this review Paper the author used non-equivalent, quasi-experimental, pre and posttest design was used. ANCOVA (statistical test) was used to compare the outcomes of variables. The interventional group (PBL) gained a higher score in terms of critical thinking compared to control group (traditional lectures). In addition to self-directed learning students problem solving ability scores were also high. However, the statistical difference in scores between these two groups was not significant. In this review paper the author has reflected on the importance of PBL and the associated hindering factors for the nursing students

Keywords: Problem-Based Learning, Critical Thinking, Self-Directed Learning, Problem-Solving



Divine Proportions Assessment in Edentulous Patients Before and After Complete Denture Insertion

Faiza Awais Qureshi

The objective of the present study was to evaluate the ratios between bones of the skull and face of edentulous patients, before and after complete denture insertion through cephalometry and evaluate the presence of divine proportion between bones. This was done to evaluate the fact that after esthetically restoring the vertical dimension whether the proportions between skull bones are near or far from divine proportions. If there is existence of divine ratio then this proportion can be used for complete denture fabrication in vertical and horizontal planes to evaluate esthetics. Thirty edentulous patients 15 males and 15 females, fulfilling the inclusion criteria were selected. Patients' complete dentures were fabricated by conventional method. Two standardized lateral cephalometric head films were made of every patient, first without denture in mandibular rest position and second with denture in maximum intercuspation. The means of five different ratios before and after denture insertion were analyzed statistically by using paired t test. The difference between the mean ratios of face and skull bone with the golden ratio (1.618) was also calculated. The ratio R2 (N- Me/ANS-Me) which is related to total anterior facial height and lower anterior facial height, were closer to golden ratio after the insertion of complete denture. Furthermore R3 (Or-Me /ANS-PNS) also showed ratios closer to divine proportion.

Keywords: Divine Proportions, Complete Denture Fabrication, Cephalometry, Golden Ratio

Prevalence of TMJ Disorders Among Dental Students and Its Relation to Malocclusion

Faiza Awais Qureshi

The objective of the present study was to evaluate the correlation between temporomandibular joint (TMJ) problems and types of malocclusions in dental students. It was a cross sectional study. Total 200 dental students both males and females, fulfilling the inclusion criteria were selected from Lahore Medical and Dental College, Lahore. The age ranged from 17 to 30 years with the mean age 21.38 (\pm SD 2.281) years. Non-probability purposive sampling was used for subjects selection. Informed verbal consent was taken. The most common type of malocclusion existed among dental students in this study was Class II malocclusion followed by Class I and then Class III. Similarly clicking was found to be the most common TMJ problem out of all that were evaluated. Correlation between symptoms of TMJ pain with clicking and head and neck pain was significant ($P < 0.05$). Most of the students who had TMJ pain also had clicking, deviation and limited mouth opening. Joint noises were mostly in the form of clicking, 4 students also had crepitus. It was concluded that there was no significant correlation between TMJ problems and malocclusion types. However, among the symptoms, a significant correlation between TMJ pain, clicking, and restricted mouth opening was found.

Keywords: TMJ Disorders, Malocclusion, TMJ Dysfunction, Facial Pain, Occlusal Dishormany

Occlusal Schemes During Eccentric Jaw Movements in Dental Students of Lahore Medical and Dental College, Lahore

Faiza Awais Qureshi

Occlusion plays an important role in the health of stomatognathic system. Study was done to find out the occlusal schemes and to study the nature of occlusal contacts during maximum intercuspation to protrusive and lateral excursions. A total of 104 dental students were selected and their occlusal schemes were classified. Participants occlusal interferences i.e; centric, protrusive, mediotrusive and laterotrusive were also recorded using shim stocks, diagnostic instrument and by visual assessment. Horizontal and vertical overlap of anterior teeth was also measured. Among 104 participants studied, 61.5% were found having canine guided occlusal scheme, 29.8% having group function whereas 8.7% had the combination of both. Majority participants do not have any occlusal interference 79.8%, whereas 20.2% were having interferences out of which the group function occlusal scheme had maximum number of interferences, 10 (9.6%). Insignificant relationship was obtained between presence of interferences and occlusal schemes, $P > 0.05$. The type of interference most commonly seen was the protrusive interferences (37.5%). The type of occlusal scheme commonly observed is canine guided occlusion, however there were no occlusal factors that were significantly associated to any particular occlusal scheme.

Keywords: Laterotrusive, Canine Protected Occlusion, Canine Guided Occlusion Group, Function Occlusion, Occlusal Schemes

Comparison of Effectiveness of Mineral Trioxide Aggregate and Calcium Hydroxide in Apexification Procedure

Hanna Abdul Majeed

An incompletely formed apex (open apex) is one of the most common features seen in immature permanent teeth after dental trauma. Different materials have been tried for Apexification procedure, the most common are calcium hydroxide and mineral trioxide aggregate (MTA). The objective of this article was to compare the effectiveness of Mineral Trioxide Aggregate and Calcium hydroxide in creating apical closure. This is a comparative study of 80 patients with Open Apex teeth. They were randomly allotted into two groups (Group A and Group B). In Group A (40 patients), calcium hydroxide was used as an apexification material, While in Group B (40 patients) apical plugs were produced with mineral trioxide aggregates (MTA) followed by obturation. In Group A, 30 patients showed complete absence of lesion while in Group B, 37 patients showed complete healing. Ten patients showed no healing in Group A, because of improper packing of material into the canal, while only three patients showed no healing in Group B because of poor delivery of MTA to the apex. The results showed that 75% teeth had complete healing in Group A and 92.5% had complete healing in Group B. The results of the study concluded that MTA is significantly better than Ca (OH)₂ in Apexification of non- vital immature permanent teeth.

Keywords: Mineral Trioxide Aggregate, Calcium Hydroxide, Apicalclosure.

Assessment of Confidence Level Amongst Undergraduate Dental Students in Performing Various Restorative Procedures

Hanna Abdul Majeed

This study was done to assess the confidence level of final year undergraduate dental student in terms of their perception at diagnosis of different types of carious lesion, incipient caries, arrested caries, interpretation of radiograph, applying pit and fissure sealants, PRR, use of Mylar strip, and applying rubber dam. This subjective cross-sectional study was conducted at CMH Institute of Dentistry. An anonymous questionnaire was distributed among final year dental students. The questionnaire utilized scaled response to determine the level of confidence for diagnosing various carious lesions, rubber dam application, PRR, applying pit and fissure sealants, use of Mylar strip, performing endodontic treatment. Confidence level was categorized using a 3-point modified Likerts scale as 1=not at all confident, 2=neutral 3=confident. Data were entered and analyzed in SPSS version 20. Counts and percentages were measured for various parameters of respondent's confidence level. The students expressed their confidence in performing basic dental and restorative procedures however low confidence level was expressed in students in performing endodontic treatment in anterior and posterior teeth.

Keywords: Pit Fissure Sealants, PRR, Mylar Strip, Rubber Dam

Prevalence of Temporomandibular Joint Disorders and Associated Morbidity Among the Patients Attending Clinic

Hanna Abdul Majeed

A Cross-sectional Observational study was conducted to evaluate the prevalence and association of temporomandibular joint (TMJ) disorders with mal-occlusion types, age and gender in patients attending the Outdoor Dental Clinic. A Total 200 of patients from both genders, selected to see prevalence of Temporomandibular joint (TMJ) disorders with mal-occlusion types in relation to age and gender. The mal-occlusion was assessed by Angle Classification, High prevalence of Temporomandibular joint problems was found among female (62.5%), as compared to the male (37.5%). Majority of patients (71%) were between 20-40 year of age. Clicking was the most prevalent problem reported in both genders (females 59.0%, males 41.0%). Association of Temporomandibular joint problems with malocclusion, age and gender was found using Chi Square test. Statistically in significant association of Temporomandibular joint problems with respect to age and gender and malocclusion was found. Head and neck muscle pain had significant association with age. (p0.005). Highest prevalence was reported in age group >40 year. TMJ problems had no significant association with mal-occlusion types, age and gender, however head and neck muscle pain showed a significant association with age.

Keywords: TMJ Disorders, Mal-Occlusion, Occlusal Imbalance, Click Sensation, Muscle Pain, Age Correlation, Gender Correlation

Safe Protocol of Resuming Routine Dental Procedures in A Tertiary Care Hospital Setting Post Covid-19 Lockdown

Hanna Abdul Majeed

The outbreak of the COVID-19 pandemic greatly affected dentistry. Dental procedures are considered one of the modes of transfer of COVID-19 infection due to generation of aerosols. To prevent transmission of this virus through dental procedures, guidelines were issued by the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC) and Ministry of Health of each country. The aim of this study is to establish a safe protocol for performing dental procedures in crisis capacity situation of personal protective equipment (PPE). A strategy for performing the dental procedures was formulated in accordance with the guidelines provided by the Ministry of Health, Pakistan before vaccination of HCPs against COVID-19. These guidelines also accorded the strategies provided by the WHO and CDC. 40 health care professionals (HCPs) participated in the study and were divided in two groups. Group A performed non-aerosol generating procedures (non-AGPs) and group B performed aerosol generating procedures (AGPs). A total of 6372 aerosol generating procedures were performed from 1 August 2020 to 31 March 2021. The safety of this protocol was established by the number of HCPs contracting COVID-19 infection. Only 1 HCP contracted COVID-19 infection or reported any symptoms preceding the AGPs from group B following the formulated strategy. Reported strategy based on the dental system in Pakistan is considered safe to be implemented worldwide during the COVID-19 pandemic.

Keywords: Ministry of Health, Pakistan, Centers for Disease Control and Prevention, Personal Protective Equipment, Health Care Professionals, COVID-19

Influence of Risk Habits on Demographic Factors and Its Impact on Oral Sub Mucous Fibrosis

Sadia Manzar, Farhat Kazmi

Aim was to establish a correlation and evaluate paradigm shift of demographic parameters in oral submucous fibrosis patients due to use of areca nut and tobacco. This cross-sectional study was conducted in OPD of Tertiary Care Teaching Hospital from 1 November 2019 to 31 October 2021. All patients with compliant of limited mouth opening and diagnosed clinically with oral submucous fibrosis were included in study. Biographical data was collected based on age, gender, literacy rate, socioeconomic conditions and habit of consumption of areca nut-based products and tobacco. Data analysis was done using SPSS 25, multiple comparisons of variables were done using Chi2 and Regression analysis. Prevalence of OSMF was 0.45%, with mean age of 29.26 + 14.12 years. Areca nut alone is consumed more by females (44.12%) whereas combination of tobacco and areca nut use was higher in males (87.76%). Risk habits were found to be highest in uneducated/primary education (63.01%) and in low socioeconomic group (59.03%). Comparing the last two decades, there is paradigm shift in age of contracting OSMF towards younger age. Significant finding of areca nut use by females also draws attention for control measures. Harmful effects

of areca nut and tobacco products should be highlighted and included in educational and community programs.

Keywords: Oral Submucous Fibrosis, Potentially Malignant Disorders, Areca Nut

Dental Anxiety, Smoking and Snuff Use Among Dental Patients

Zeeshan Aslam

Aim was to establish a correlation and evaluate paradigm shift of demographic parameters in oral fibrosis patients due to use of areca nut and tobacco. This cross-sectional study was conducted in OPD of Tertiary Care Teaching Hospital from 1 November 2019 to 31 October 2021. All patients with complaint of limited mouth opening and diagnosed clinically with oral submucous fibrosis were included in study. Biographical data was collected based on age, gender, literacy rate, socioeconomic conditions and habit of consumption of areca nut-based products and tobacco. Data analysis was done using SPSS 25, multiple comparisons of variables were done using Chi2 and Regression analysis. Prevalence of OSMF was 0.45%, with mean age of 29.26 + 14.12 years. Areca nut alone is consumed more by females (44.12%) whereas combination of tobacco and areca nut use was higher in males (87.76%). Risk habits were found to be highest in uneducated/primary education (63.01%) and in low socioeconomic group (59.03%). Comparing the last two decades, there is paradigm shift in age of contracting OSMF towards younger age. Significant finding of areca nut use by females also draws attention for control measures. Harmful effects of areca nut and tobacco products should be highlighted and included in educational and community programs.

Keywords: Oral Submucous Fibrosis, Potentially Malignant Disorders, Areca Nut, Dental Anxiety, Smoking, Snuff

Oral Lichen Planus and Hepatitis C Virus Infection; A Symbiotic Relationship or Amere Co-Incidence?

Zain Akram

Lichen planus (LP) is a common idiopathic chronic inflammatory immune mediated mucocutaneous disease that effects stratified squamous epithelia and appendices. A couple of reports have suggested positive association of HCV infection and oral lichen planus (OLP) and most of the studies are usually confined to Mediterranean and south European countries. Due to high incidence and suspected alliance between these two diseases in Pakistan, the following study was conducted with the view that it may help clinicians to set guidelines for HCV testing of lichen planus patients. Approximately 11500 patients from general population coming to dental diagnostics department of Fatima Memorial Hospital, Lahore (from March 2015-February 2016) were screened clinically for OLP and by ELISA for HCV infection. Out of these 11500 patients 103 were selected one of them incidental and the other pre-diagnosed or both incidental and both pre-diagnosed. These patients were unaware but had either one or both OLP and HCV infection which was confirmed clinically and by ELISA respectively. Majority of patients presenting for

other dental complaints were unaware of these diseases process going on in them and was mostly an incidental finding by the clinician. Either one or both OLP and HCV infection were more conjoint in females comprising 77.7% of the total subjects. OLP alone was most common finding comprising 66.67% of the cases. HCV infection alone was present in 15.53% whereas 16.50% subjects showed presence of both OLP and HCV infection. The current study could not detect statistically significant relationship between OLP and HCV infection in Pakistani population which could be due to genetic variation or may be geographic relationship.

Keywords: Association, Hepatitis C Viral Infection, Oral lichen Planus

Quality And Readability of Online Information Available for The General Public on Orofacial Granulomatosis

Zain Akram

Orofacial granulomatosis (OFG) is a relatively rare entity. The purpose of the study was to evaluate ease of access and understandability of language available for individuals affected by OFG. Although the incidence of the disease is very low in Pakistan, patients with symptoms of OFG rarely report to clinics due to social stigma. A vivid selection process was chosen for the study. The study was conducted online; google scholar; website. Four different search terms were used, orofacial granulomatosis; cheilitis granulomatosa; and; Melkersson Rosenthal Syndrome; to seek information on orofacial granulomatosis. The first 100 results from each term were shortlisted and evaluated further. This resulted in 58 websites relevant to the search that were then categorized according to affiliation, specialisation, content type as well as content presentation. Three grading assessments were utilized to assess the quality of this online information; the Journal of the American Medical Association (JAMA) benchmarks, the Patient Education Materials Assessment Tool for Printable Materials (PEMAT-P) and the presence of Health on the Net (HON) seal. In order to assess the readability of the content in the websites, the Flesch Reading Ease Score (FRES) and Simple Measure of Gobbledygook (SMOG) were used. The overall quality of online information on orofacial granulomatosis is difficult to comprehend and act upon as assessed by the PEMAT. The HON seal was visible on only 5 (9%) websites. In terms of readability, only one (2%) website was fairly easy to read. The online information on orofacial granulomatosis is qualitatively poor and does not serve its purpose in true sense. There is a need to devise better, high quality online readable information for patients and the public to understand.

Keywords: Orofacial Granulomatosis, Cheilitis Granulomatosa, PEMAT

The Impact of Drug Therapy on Minor Oral Surgery Procedures

Khadeeja Saleem

Some advanced and slightly more invasive treatments require the use of certain drugs before, during and after the treatment like local anesthetics, vasoconstrictors, anxiolytics, analgesics and antibiotics. All of

these can possibly interact with medications a patient is already taking and can also interfere with the current dental treatment and create complications. This article aims to provide necessary information about commonly encountered systemic diseases and associated treating medications, their mechanism of action, possible complications and their management.

Keywords: Vasoconstrictors, Anxiolytics, Complications

Analyzing The Teaching Skills of Interns to Assess the Quality of Teaching

Zain Akram

In Pakistan, interns are often involved in teaching tasks. Aim is to analyze the level of teaching skills of interns, so appropriate measures can be taken if required to improve the standard of teaching. The Medical Education Teaching Readiness Questionnaire (METRQ) was used to assess how different experiences contributed to respondent's knowledge, skills and attitudes of medical teaching. Fifty first year interns in dentistry were requested to fill out the questionnaire and the results were analyzed statistically using SPSS 21. Forty (80%) interns thought the acquisition of basic teaching skills such as planning 'what to teach' was extremely important, however they were not prepared well enough to teach. Observing their teachers was extremely helpful for skill development for 38 (76%) respondents while receiving feedback on their own teaching was helpful for only 1 (2%) respondent. Most of the parameters judged as teaching characteristics such as enthusiasm, motivation, competence etc. took a dip at the time of graduation. The same characteristics showed markedly better values after gaining some teaching experience during internship. METRQ can act as an important tool to conduct needs assessment for designing teacher-training programs or for assessing the current status of individuals who are teaching in the health professions. Teacher training programs are the need of the hour so teaching quality and in turn the quality of education can be improved.

Keywords: Aptitude, Cross Sectional Studies, Needs Assessment, Teacher Training

Mouth Guards; Awareness About Mouth Guards in Dental Community of Lahore

Mohammad Annas

Dento-alveolar injuries are quiet frequently reported and sports remain as one of the major cause. In Pakistan contact sports like boxing, hockey, football etc are actively played at all levels. It is the need of the hour to prevent the dental and dento-alveolar injuries resulting from these. The aim of this study was to assess the level of awareness about mouth guards in final year students, PG trainees, and faculty of University College of Dentistry and private dental practitioners of Lahore. Also the results shall be utilized to assess the need of awareness programs that can be of help to the dentist and help serve the community. Cross-sectional descriptive study was carried out. 87% responded to questionnaire distributed from a sample of 200. Results show that the students had the least knowledge (63%) whereas 100% of the assistant

professors and above had knowledge of mouth guard. general dentists and the senior faculty was the one with higher percentages which recommended mouthguards 53% and 80% respectively. Results lead to the conclusion that there is a need to improve the competency level of the dentists regarding mouth guards, their benefits, fabrication etc. so they can educate the patients, promote the use of mouth guards and limit the incidence of injuries. Further research projects need to be funded to highlight the importance of mouth guards and their use should be encouraged.

Keywords: Dento-alveolar Injuries, Contact Sports, Mouth Guards

Violence Against Dental Surgeons: An Analytical Cross-Sectional Study

Mohammad Annas

Violence and aggression against physicians has been reported commonly in Pakistan but there is still dearth of documented literature available on this global dilemma. A pre-validated, online questionnaire was formed on 'Google forms' and distributed among 640 dentists of average age 30 years. This questionnaire consisted of demographic data, multiple basic questions about workplace abuse and violence that dentists have felt or experienced during their duty hours and work set ups. It also included the experience of violence against dentists by offenders and their experience regarding institutional and hospital support provided in these situations. A total of 524 dental surgeons participate in the research. It was discovered that most (85%) of the dental surgeons have faced some sort of abusive events in the past one year. Similarly, 62% of the study population had suffered moderate events whereas; approximately 38% had faced severe violent incidents. Dentists mostly face verbal abuse, followed by emotional, physical and sexual. The abuser is mostly the patient or his / her relative. Violence or abuse is considerably common in the field of dentistry and dentists have negative perception about institutional support regarding this matter.

Keywords: Public Health, Awareness, Dentistry, Human Rights, Violence

Comparison of Clinical Attachment Level Gain Using Scaling Root Planning Versus Adjunctive Azithromycin on Chronic Periodontitis.

Moeez Ansari

The objective of the study was to compare the mean clinical attachment gain in patients of chronic periodontitis after scaling and root alone versus Azithromycin as an adjunct to scaling and root. Total Sixty patients fulfilling the selection criteria were randomly allocated to SRP and SRP+Az groups. In groups, conventional scaling and root planning was done. In the SRP group placebo capsules were prescribed, while in the SRP+Az group, Azithromycin (500mg) once daily was prescribed for 3 days. Clinical attachment level (CAL) was measured initially and after 5 weeks. Data was analyzed in SPSS version 19.0 using independent sample t-test. Both groups showed gain in CAL compared to baseline. However, SRP+Az group showed significantly more gain in CAL in comparison to SRP group (P value < 0.05). Use of Azithromycin adjunctive to SRP is an effective treatment modality in chronic periodontitis patients.

Keywords: Anti-Bacterial Agents, Azithromycin, Chronic periodontitis, Clinical Attachment Level,

Periodontal Debridement, Scaling and Root Planning

Phytochemical Compound and Non-Cytotoxicity Effect of Sting Bee and Stingless Bee Honey Against Normal Human Gingival Cell Lines

Moez Ansari

Both honeybees (*Apis* spp.) and stingless bees (*Trigona* spp.) produce honeys which normally taken orally, have high nutritional and therapeutics value. Until recently, phytochemical comparison of both honey is still scarce and elucidating cytotoxicity effects on human gingival fibroblast cells (HGF) in oral cavity is of interest. Kelulut honey (KH), acquired from the stingless bees and acacia honey (AH) from the sting bees honey samples were underwent GC-MS analysis to ascertain their composition. HGF were exposed to various concentrations of KH and AH from the lowest 0.015% to the highest 5% by MTT assay for 24h, 48h and 72h. GC-MS analysis determined various beneficial compounds such as flavonoids, furans, pyrans, levo glucose and hydroxyl methyl furfural from both of honey samples. MTT assay showed that the HGF cells demonstrated good viability up to percentages (v/v) as high as almost 2% in both honeys. The IC₅₀ values for both honey for all time frames fall at above 2%.

Conclusion: Both honeys showed good survivability of HGF cells up to 2% of concentration.

Keywords: Phytochemical; Honey; Cytotoxicity; Human Gingival Fibroblas

Salivary Mmp-9 Levels in Chronic Periodontitis Patients with Type-II Diabetes Mellitus

Moez Ansari

The aim of this study was to identify whether the levels of matrix metalloproteinase-9 are increased due to type-II diabetes mellitus in chronic periodontitis patients. It was an observational, analytical, case-control study. Thirty subjects were recruited in the test group, who were suffering from type-II diabetes mellitus and chronic periodontitis, and 30 subjects in the control group, who were subjects with chronic periodontitis but systemically healthy. Periodontal parameters, including the plaque score, gingival bleeding index, probing pocket depth and clinical attachment level of the subjects, were measured, saliva samples of all of the subjects were collected and salivary matrix metalloproteinase-9 levels were analyzed by an enzyme-linked immunosorbent assay (ELISA) technique. Overall, the matrix metalloproteinase-9 levels of the diabetic patients with chronic periodontitis were increased almost twofold (156.95 ± 29.80 ng/mL) compared to the levels in the controls. Similarly, the periodontal parameters were far worse in diabetics with chronic periodontitis compared to the controls. The average gingivitis score for the test subjects was $78.45 \pm 8.93\%$, compared to $29.32 \pm 12.96\%$ in the controls. For the test subjects, the average clinical attachment level was 5.86 ± 0.58 mm, and it was 4.66 ± 0.32 mm for the controls ($p < 0.001$). It was ascertained that there is a two-fold increase in the levels of salivary matrix metalloproteinase-9 in the test group compared to the control group. In addition, the level of periodontal apparatus destruction was greater in the test group. This proved that type-II diabetes mellitus influences the levels of

matrixmetalloproteinase-9 in humans and elevates them, causing further periodontal destruction.

Keywords: Chronic Periodontitis, Diabetes Mellitus; Matrix, Metalloproteinases

Zika Virus: Raising Awareness to Prevent a Pandemic

Alam MK, Arshad AI

Zika virus is a flavivirus which is transmitted through Aedes female mosquito species or sexually. “Mild dengue” like symptoms are noticed which usually subside shortly and uneventfully. In 1969 ZIKV was isolated in West Malaysia for the first time. Since then no case has been reported in Malaysia. WHO has declared a global threat of an epidemic spread after the outbreak in Brazil. Rain forest climate regions are at a constant state of emergency as pools of water are abundantly formed as a result of rain showers throughout the year which provides a habitat for mosquitos. We try to raise awareness and alert health governing bodies and institutions to take necessary steps to prevent and eradicate the potential pandemic threat. Counseling of females who are planning to conceive is required to minimize the threat to newborn babies. Travellers visiting the equatorial regions should be screened and counseled to detect and prevent viral infection transfer and to avoid complications on a larger scale.

Keywords: Zika Virus, Pandemic, ZIKV

Is Outcome Based Cleft Research Leading Somewhere?

Anas Imran Arshad

Globally, approximately one out of every 700 live-births is affected by a cleft lip and/or palate. This occurrence rate makes it one of the most common congenital orofacial birth defect. The literature on this subject indicates that the cleft lip and palate has a multifactorial origin, but both genetics and environmental factors play a vital role and have been extensively studied individually and in conjunction. A multidisciplinary involvement of healthcare professionals is absolutely necessary to successfully manage and treat cleft lip and palate, and primary surgical repairs are required to restore function and structure. Clinical management is a result of sound clinical diagnosis and a predictable treatment outcome measures.

Keywords: Outcome, Cleft

Role of Serum Ceruloplasmin as Tumor Marker in Early Diagnosis of Oral Squamous Cell Carcinoma

Saadia Manzar

To compare serum Ceruloplasmin (CP) levels in histopathologically diagnosed oral squamous cell carcinoma (OSCC) patients with healthy controls and to determine its role as tumor marker of early diagnosis and malignant transformation of OSCC. Sample size of 90, comprising: control group A, 45

healthy subjects; group B, 45 histopathologically diagnosed OSCC patients were included. After obtaining informed consent from all patients, serum CP levels were estimated by using immunoturbidimetric analysis for quantitative determination of CP level on the serum samples. The mean values of CP were compared using ANNOVA and One-way ANNOVA test. Independent T-Test was applied to subgroups of OSCC to analyze the OSCC disease progression. CP levels were significantly increased in histopathological grades of OSSC in comparison to control group (p-value < 0.001). However, there was no significant difference between CP values of well differentiated and moderately differentiated histopathological grades of OSCC. Serum CP levels can help to diagnose early stages of OSCC, thus establishing it as non-invasive tumor marker of malignant transformation. However, role of serum CP levels to establish progression of disease is still ambiguous.

Keywords: Oral Squamous Cell Carcinoma, Ceruloplasmin, Malignant Transformation, Well-differentiated Squamous Cell Carcinoma, Immunoturbidimetric Analysis

Pharyngeal Obturator Prosthetic Rehabilitation of Velopharyngeal Insufficiency

Asif Ali Shah

Congenital or acquired defects of soft palate cause physical, functional and psychological disabilities. Surgical closure or prosthetic rehabilitation are the two treatment modalities. If surgery is contraindicated, prosthetic rehabilitation is the alternative treatment option. Pharyngeal obturator prosthesis provides adequate closure of the velopharyngeal insufficiency. In this case report, a young patient is treated for velopharyngeal insufficiency with pharyngeal obturator as the patient had refused to undergo surgical closure. The prosthesis was successfully fabricated and was evaluated for proper functioning. It improved speech, deglutition and psychological well-being of the patient.

Keywords: Pharyngeal Obturator, Velopharyngeal Insufficiency, Hypernasality, Maxillofacial Prosthodontics

Effective Modes of Conceptual Teaching and Learning in Pakistan an Undergraduate Medical Students Perspective

Shabbir Hussain

There are more than 50 medical colleges in Punjab, and the traditional mode of teaching is teacher dominant 'while students are passive learners. The curriculum prescribed by the University of Health Sciences (UHS) emphasizes more on theoretical knowledge of subjects along with extensive memorization, but less stress on concept building and development of learning skills. Study was done to assess the students' perception regarding effective teaching, concept building and learning strategies. Methods: The study involved a total of 378 male and female students from MBBS, BDS and DPT sessions and a structured questionnaire was given to each student after taking consent, and teaching modalities were rated

using Likert scale. Results: Out of 378 students, 62% were females, while 38% were males, and among these 43%, students were residing in hostels, while 57% were day scholars. Illustration of concepts using white board was rated 61.2%, interactive sessions/tutorials 46.1%, demonstrations by teacher 34%, power point presentation lectures using multi-media 25% while small group discussion was rated 6.5%. White board teaching was considered as most effective tool for development of concept and learning (61.2%), followed by interactive sessions (46.1%). Power point presentation lecture was rated as 2nd least effective method (25%), while small group discussions was rated as least effective modality (6.5%).

Keywords: Conceptual Teaching, Medical Students, Modes of Learning

Interferon Induced Oxidative Stress in Chronic Hepatitis

Shabbir Hussain

Objective of our study was to assess oxidant status of patients with chronic hepatitis C and the effect of pegylated interferon alpha plus ribavirin combination treatment on oxidative stress. Serum and saliva samples of thirty patients of HCV on IFN therapy and thirty age and sex matched controls were selected for the current study. MDA and Isoprostanes were assayed to assess oxidative stress caused by therapy. Results: The samples obtained from HCV patients showed statistically significant ($P=0.014$) higher level of MDA in serum ($3.29\pm 0.465\text{nmol/ml}$) and saliva ($0.182\pm 0.0065\text{nmol/ml}$) of patients in comparison with normal individual's serum ($0.91\pm 0.027\text{nmol/ml}$) and saliva ($0.0215\pm 0.005\text{nmol/ml}$). An overall highly significant increasing trend was also observed between HCV patients and controls ($p=0.000$, $p=0.011$) as the mean levels of Isoprostanes and 8-OHdG in control's serum ($0.79\pm 0.036\text{pg/ml}$, $0.034\pm 0.001\text{ng/ml}$) and saliva ($0.001\pm 0.0005\text{pg/ml}$, $0.0013\pm 0.0004\text{ng/ml}$) and patient's serum ($4.319\pm 3.09\text{pg/ml}$, $1.06\pm 0.046\text{ng/ml}$) and saliva ($0.29\pm 0.019\text{pg/ml}$, $0.026\pm 0.0014\text{ng/ml}$) were observed respectively. Conclusion: Patients of HCV who received the IFN therapy show increased lipid peroxidation and oxidative stress. Levels of MDA, 8-OHdG and Isoprostanes in serum and saliva of subjects were higher when they were compared with the controls, which helped us to bring about a conclusion that IFN may serve as a reason for increased lipid peroxidation and oxidative stress in hepatitis C patients under treatment.

Keywords: HCV, IFN, Isoprostanes, Lipid peroxidation, MDA

Alveolar Bone Response of Diabetic Rats to Orthodontic Tooth Movement

Shabbir Hussain

Background: There alveolar bone response while orthodontic tooth movement (OTM) is influenced by many hormonal conditions such as diabetes mellitus (DM). Aim: To find out and compare the response of alveolar bone of diabetic rats with healthy rats while undergoing experimental tooth movement in terms of mean osteoclastic count, total areas covered by osteoblasts and total resorptive areas. Methodology: This study involved 40 male wistar rats that were divided into 2 groups with 20 rats in each group. Group A

was control group with healthy normoglycemic control rats, and group B was diabetic group with rats having experimental diabetes. The orthodontic appliance was placed between incisor and first molar to initiate experimental tooth movement for 3 weeks. After 3 weeks rats were sacrificed and histology sections were seen under microscope to observe the alveolar bone response in terms of mean osteoclastic count, total areas covered by osteoblasts and total resorptive areas. Results: The results revealed that total alveolar bone resorption surfaces and mean count of osteoclasts was significantly more while total areas covered by osteoblasts was significantly less as compared with controls. Conclusion: Diabetes mellitus resulted in increase in alveolar bone resorption and decrease in osteogenesis while undergoing experimental orthodontic tooth movement in rats.

Keywords: Diabetes Mellitus, Alveolar Bone, Bone Remodeling

Role of Erk in Oral Cancer Progression in Pakistani Population

Farhat Kazmi

Oral cancer is highly prevalent in Pakistan and is becoming a global health priority. More than 90% of oral and oropharyngeal cancers are squamous cell carcinoma. The purpose of this study was to assess the role of the ERK pathway in oral cancer diagnosis and progression in the Pakistani population. A total of 53 samples comprising of 25 well-differentiated grade I OSCC and 25 samples of poorly differentiated grade III OSCC and 03 normal healthy samples were included in the study. All samples were processed for RNA extraction, and Real-Time PCR followed by RT PCR. The data so obtained are separately recorded for each gene, and the value was entered in the SPSS. ERK 112 showed increased expression level with the proliferation of the tumor cells. Mean Ct values for Normal was $38.1 \pm 0.111/\text{RFU}$, Grade I $20.43 \pm 1.081/\text{RFU}$, & Grade III. $9.11 \pm 1.25 1/\text{RFU}$ Grade III has a significantly higher level of expression as compared to the healthy group (with $p < 0.01$). No significant difference could be observed in the samples of healthy tissue as compared to grade I. This study provides valuable data regarding the expression of ERK among the Pakistani population. Genetic alterations have a significant role in the initiation and progression of OSCC. Tfe can say our data demonstrate a basis for the molecular diagnosis of OSCC and this information can be beneficial in future.

Keywords: Oral cancer, oral squamous cell carcinoma, MAPKinase, ERKJ, ERK2

Assessing Knowledge, Attitude and Practices for Oral Squamous Cell Carcinoma Among Health Care Profession

Farhat Kazmi

Oral Squamous Cell Carcinoma (OSCC) is a growing public health problem and carries high morbidity and mortality rates worldwide. Proper awareness among health care professionals (HCP) is the most significant factor for ensuring early diagnosis and treatment. The present study aimed to assess the knowledge, attitude, and practices (KAPs) of OSCC among dental and medical undergraduate students along with

general practitioners and specialists of both disciplines. A total of 332 participants filled a close-ended online questionnaire. Responses to the questionnaire were analyzed using descriptive and analytical statistics. Of the 450 health care professionals approached, 332 filled the questionnaire with a response rate of 73.77%. It was observed that the mean knowledge index was higher among dental participants (10.96 ± 1.85). The attitude index was higher at medical side (6.89 ± 1.11), and the practice index was also higher among the dental participants (4.95 ± 0.91). Most of the health care professionals had knowledge regarding risk factors associated with OSCC. HCPs indicated their lack of training as the main barrier for conducting a comprehensive examination for OSCC. Interestingly, the vast majority of HCPs expressed their interest to have further educational and training sessions regarding this malignancy. The study puts forward, the need for intensive training and workshops for awareness and improvement of the abilities of the HCPs, (including dental and medical undergraduate students along with practitioners and specialists) to diagnose OSCC.

Keywords: Awareness, Knowledge, Attitude, Practices, Oral Cancer.

Prevalence of Xerostomia and Associated Systemic Risk Factors in Riyadh, Saudi Arabia: A Cross-Sectional Study

Farhat Kazmi

Xerostomia is a feeling of dry mouth and may result in poor oral hygiene, dental caries, mucosal lesions and burning mouth syndrome. Medication, systemic diseases and stress are common etiological factors of xerostomia. The present study investigated the prevalence of xerostomia and explored the possible risk factors associated with this condition among Saudi population. Methods: The present cross-sectional study was conducted on 418 participants visiting at Maxillofacial clinic, at secondary care hospital, Riyadh. Demographic data and complete medical history were obtained from participants. All participants were requested to fill the Xerostomia Inventory (XI) questionnaire. Comparisons between mean scores of XI-inventory and categorical variables like gender, comorbid conditions were made with students t-test or Wilcoxon test. Chi-square or Fischer's Exact test were used for comparison between categorical variables like gender and responses to XI-items (No/Yes). P value of < 0.0001). The participants with systemic illness showed a significantly higher mean Xerostomia Inventory (XI) score as compared to the healthy patients. In our study population common comorbid conditions were hypertension and diabetes. The prevalence of xerostomia increases with increasing age and it has strong positive co-relation with chronic systemic diseases.

Keywords: Dry Mouth, Xerostomia, Systemic Diseases, Prevalence

Role of Serum Ceruloplasmin as Tumor Marker in Early Diagnosis of Oral squamous Cell Carcinoma

Farhat Kazmi

This study was conducted to compare serum Ceruloplasmin (CP) levels in histopathologically diagnosed

oral squamous cell carcinoma (OSCC) patients with healthy controls and to determine its role as tumor marker of early diagnosis and malignant transformation of OSCC. Sample size of 90, comprising: control group A, 45 healthy subjects; group B, 45 histopathologically diagnosed OSCC patients were included. After obtaining informed consent from all patients, serum CP levels were estimated by using immunoturbidimetric analysis for quantitative determination of CP level on the serum samples. All the data was collected on predefined pro-forma and analyzed using SPSS version 26. The mean values of CP were compared using ANNOVA and One-way ANNOVA test. Independent T-Test was applied to subgroups of OSCC to analyze the OSCC disease progression. CP levels were significantly increased in histopathological grades of OSSC in comparison to control group (p-value < 0.001). However, there was no significant difference between CP values of well differentiated and moderately differentiated histopathological grades of OSCC. Serum CP levels can help to diagnose early stages of OSCC, thus establishing it as non-invasive tumor marker of malignant transformation. However, role of serum CP levels to establish progression of disease is still ambiguous.

Keywords: Oral Squamous Cell Carcinoma, Ceruloplasmin, Malignant Transformation, Well-differentiated Squamous Cell Carcinoma

Gene Therapy for Cleft Lip and Palate

Anas Imran Arshad

Extensive studies have established a mutual association between genetic predominance and environmental factors, leading to cleft lip and palate (CLP). Currently, CLP is being treated using a multidisciplinary approach. Gene therapy has a promising future and is under development for the treatment of various diseases. What about CLP? Recently a statement denying the near future possibility of achieving a cure through somatic cell gene therapy (SCGT) was made.¹ However, there is extensive research going on currently, regarding the identification of new alleles associated with CLP mutations.

Keywords: Gene Therapy, Cleft

Systemic Manifestations of The Periodontal Disease: A Bibliometric Review

Anas Imran Arshad

This bibliometric review aimed to identify and analyze the top 100 most-cited publications on the systemic manifestations of periodontal disease (PD). A literature search was performed using the Web of Science (WoS) 'All Databases', without any restriction of language, publication year, or study design. Of 4418 articles, the top 100 were included based on their citation count. After downloading the full texts, their bibliometric information was extracted and analyzed. The citation counts for the top 100 articles ranged from 156 to 4191 (median 217). The most productive years were 2003 and 2005, with 20 articles on the list. Majority of the articles were published in the Journal of Periodontology (n = 25). The top 100 articles were generated primarily from the USA (n = 61). Most of the publications were clinical trials (n = 27) and

focused on the cardiovascular manifestations of PD (n = 31). Most of the articles were within the evidence level V (n = 41). A total of 58 studies received funding and the most frequently used keyword in the top articles was “periodontal disease” (n = 39). The current citation analysis presents insights into the current trends in the systemic manifestations of periodontal disease.

Keywords: Citation Analysis, Bibliometric Analysis, Top Cited Periodontitis, Systemic Complications

Citation Classics on Dental Caries: A Systematic Review

Anas Imran Arshad

A systematic search was performed for the identification and analysis of the 100 most often cited articles on dental caries and to highlight the changing trends in the field of dentistry over time. The search was performed without any restriction on the study design, publication year, or language using the Web of Science (WoS) group of Clarivate Analytics enabling the search through “All Databases.” Information regarding each article was then extracted, which included its authorship, counts of citation (in other databases), citation density, current citation index (2019), publication year, country of publication, journal of article, evidence level based on study design, and keywords description. The count of citation for each article varied in each database, that is, 175 to 2,003 in WoS, 89 to 1,981 in Scopus, and 126 to 3,492 when searched in Google Scholar. The highest number of articles (n = 10) related to dental caries were published in 2004. A total of 301 authors made valuable contributions to this field, out of which J.D. Featherstone had coauthored 6 articles. A significant negative correlation ($p < 0.01$) was found between the age of the article and the citation density ($r = -0.545$). However, a no significant correlation ($p = 0.952$) occurred between the age of publication and the citation count ($r = 0.006$). The results of this systematic review provide a critical appraisal of the context underpinning scientific developments in the field of dental caries and also highlighted trends in clinical management and research.

Keywords: Citation Classics, Dental Caries, Systematic Review, Citation Analysis, Streptococcus Mutans, Bibliometrics

Antibiotics: A Bibliometric Analysis of Top 100 Classics

Anas Imran Arshad

Citation frequencies represent the most significant contributions in any respective field. This bibliometric analysis aimed to identify and analyze the 100 most-cited publications in the field of antibiotics and to highlight the trends of research in this field. “All databases” of Clarivate Analytics’ Web of Science was used to identify and analyze the 100 publications. The articles were then cross-matched with Scopus and Google Scholar. The frequency of citation ranged from 940 to 11,051 for the Web of Science, 1053 to 10,740 for Scopus, and 1162 to 20,041 for Google Scholar. A total of 513 authors made contributions to the ranked list, and Robert E.W. Hancock contributed in six articles, which made it to the ranked list. Sixty-six

scientific contributions originated from the United States of America. Five publications were linked to the University of Manitoba, Canada, that was identified as the educational organization, made the most contributions (n = 5). According to the methodological design, 26 of the most cited works were review-type closely followed by 23 expert opinions/perspectives. Eight articles were published in Nature journal, making it the journal with the most scientific contribution in this field. Correlation analysis between the publication age and citation frequency was found statistically significant (p = 0.012).

Keywords: Citation Classics, Top-Cited Articles, Antibiotics, Bibliometric Analysis, Antibacterial, Antimicrobials

Delayed Management of White Eye Blowout Fracture: It's Never Too Late

Anas Imran Arshad

A classic presentation of a pediatric facial trauma resulting in an orbital blowout fracture is an absence of sub conjunctival haemorrhage, an up gaze diplopia, and general malaise caused by the oculocardiac reflex (OCR). This clinical presentation is termed as a white eye blow out fracture. These fractures in pediatric patients tend to entrap soft tissues including extraocular muscles leading to limitation in ocular movement. To prevent a neurocranial injury, early surgical intervention is highly advised in symptomatic cases. This case report presents a pediatric patient who was involved in a motor vehicle accident and sustained a head injury and an orbital roof fracture. Limitation of extraocular movement, vertical dystopia, OCR and diplopia were observed which suggested a trap door type fracture. To access the surgical site, a coronal approach was performed which facilitated the release of soft tissues entrapped into the orbital roof. Outcomes: Presence of clinical signs and symptoms like limitation of extraocular movement, vertical dystopia, OCR and diplopia are indicative of immediate surgery but concomitant head injury may hinder the urgency of the orbital fracture repair. Although, the surgical correction was delayed satisfactory post-surgical outcomes were achieved with immediate improvement in extraocular movement, diplopia and resolution of OCR. Management of orbital roof fractures is a multidisciplinary approach which requires a prompt execution of treatment plan, good understanding and co-operation between neurosurgery, ophthalmology and maxillofacial team is a necessity for successful outcomes.

Keywords: Orbital Roof Fracture, Trapdoor Fracture, Muscle Entrapment, Pediatric

Association Of Socio-Demographic and Clinicopathological Risk Factors with Oral Cancers: A 19-Year Retrospective Study

Anas Imran Arshad

To determine the association of socio-demographic and clinic-pathological risk factors with oral cancer in Kelantan, Malaysia. A 19-year cross-sectional survey was performed in Hospital Universiti Sains Malaysia (HUSM), Malaysia. Medical record of 301 oral cancer patients was retrieved from the Medical Records office. The majority of the oral cancer cases were male (62.8%), non-smokers (57.5%), non-alcohol

consumers (83.4%), non-betel quid chewers (96.7%), and belonged to Malay ethnicity (68.8%). At the time of diagnosis, most of the patients were at stage II (38.9%). Approximately one-third (30.6%) of the total OC patients experienced loco-regional/distant metastasis, whereas no metastasis was detected in around two-thirds of cases (69.4%). A combination of surgery and radiotherapy was the most commonly employed treatment modality (27.2%). At the time of this study, the survival status of most of the patients was alive (69.1%). The most frequently encountered oral cancer in the Kelantanese population was oral squamous cell carcinoma (70.1%), with the tongue being the most frequently involved oral cavity site (35.5%). More than three-fourths of the cases were alive at follow-up, which included the cases that did not undergo any form of treatment.

Keywords: Mouth Neoplasms, Carcinoma, Squamous Cell, Tongue Neoplasms, Salivary Gland Neoplasms

Safe Protocol of Resuming Routine Dental Procedures in A Tertiary Care Hospital Setting Post Covid-19 Lockdown

Saadia Manzar

The outbreak of the COVID-19 pandemic greatly affected dentistry. Dental procedures are considered one of the modes of transfer of COVID-19 infection due to generation of aerosols. To prevent transmission of this virus through dental procedures, guidelines were issued by the World Health Organisation (WHO), Centers for Disease Control and Prevention (CDC) and Ministry of Health of each country. The aim of this study is to establish a safe protocol for performing dental procedures in a crisis capacity situation of personal protective equipment (PPE). A strategy for performing the dental procedures was formulated in accordance with the guidelines provided by the Ministry of Health, Pakistan before vaccination of HCPs against COVID-19. These guidelines also accorded the strategies provided by the WHO and CDC. 40 health care professionals (HCPs) participated in the study and were divided in two groups. Group A performed non-aerosol generating procedures (non-AGPs) and group B performed aerosol generating procedures (AGPs). A total of 6372 aerosol generating procedures were performed from 1 August 2020 to 31 March 2021. The safety of this protocol was established by the number of HCPs contracting COVID-19 infection. Only 1 HCP contracted COVID-19 infection or reported any symptoms preceding the AGPs from group B following the formulated strategy. Reported strategy based on the dental system in Pakistan is considered safe to be implemented worldwide during the COVID-19 pandemic.

Keywords: Ministry of Health, Pakistan, Centers for Disease Control and Prevention, Personal Protective Equipment, Health Care Professionals, COVID-19

Comparison of Dental Caries and Gingival Bleeding Status Among Diabetic and Non-Diabetic Type 2 Children

Saadia Manzar

To compare the dental caries and gingival bleeding status among diabetic and non-diabetic type 2 children. The current study was conducted in the OPD of Dentistry at the tertiary care hospital setting between the months of January 2021 and June 2021. A total of 400 children aged 6–18 years enrolled in the research. Children with Type 2 Diabetes Mellitus (T2DM) were included in the study group, whereas children without T2DM were included in the control group (non-diabetic group). Among non-diabetic subjects, there were 191 (47.8%) males and 209 (52.2%) females respectively and among diabetic subjects, there were 198 (49.5%) males and 202 (50.5%) females respectively. Prevalence of teeth with dental caries among non-diabetic subjects was found to be 87% (350) whereas among diabetic subjects, it was found to be 93% (371). According to the findings; diabetics were more likely than non-diabetics to have dental caries and periodontal disease. There was a high prevalence of dental caries and missing teeth in diabetic participants, which led to an overall higher mean DMFT score.

Keywords: Gingival Bleeding, Dental Caries, Diabetic, Non-Diabetic, Children

Evaluation of Efficacy of Post-Operative Antibiotic Prophylaxis in Mandibular Fractures

Saadia Manzar

To evaluate the efficacy of post-operative antibiotic prophylaxis in mandibular fractures. It was a randomized controlled trial carried at Department of Oral & Maxillofacial Surgery, tertiary care hospital setting, Lahore from January 2021 to June 2021. After accepting to be enrolled in the study 50 patients with mandible fractures were randomly assigned into two groups Group A and Group B respectively. From admission until 24 hours post-operatively, all patients were given prophylactic antibiotic. The patients were then evaluated for evidence of infection at 6 weeks post-operatively. The age incidence varied from 18-60 years. The maximum number of patients belongs to age group 20-30 years. In a total of 50 patients, 45 male and 5 female patients were enrolled for the study. 4 of 25 patients in group A (16%) and 3 of 25 patients in group B (12%) reported with infection during follow-up. No statistically significant difference in the incidence of infection was noted between the groups in this study it was concluded that 1-day post-operative antibiotic is adequate to prevent post-operative infection in uncomplicated mandible fractures. The extended use of post-operative prophylactic antibiotic does not affect the incidence of infection in uncomplicated mandible fracture.

Keywords: Mandibular Fractures, Post-Operative Antibiotic, Efficacy



Community Medicine

Assessment of Hygienic Practices of Street Food Vendors Serving in Lahore

Syma Arshad

The term “street food” refers to food and beverages prepared and/or sold by vendors in streets for immediate consumption or consumption at a later time without further preparation. The objectives of the study were to assess the hygiene practices of street food vendors and to observe the safety measures adopted by them. It was a cross-sectional descriptive study in which 100 street food vendors serving in Union Council No 79, Lahore were included. Data was collected through questionnaire, which was entered into computer using SPSS 19.0. Among 100 street food vendors, 65% studied up to primary level and 48% were more than 30 years old. 69% had family monthly income $\leq 10,000$ rupees. Surroundings of 73% street food vendors were dirty where food was sold, 78% had clean utensils and 85% had no cracked or broken crockery in which food served. 55% street food vendors had long fingernails and 14% had sores on their hands. 77% were smoking during working. 100% street food vendors did not wash their hands in between handing food and money and 91% with soap after using toilet. 100% street food vendors were not vaccinated against typhoid/hepatitis. Majority had sore free hands but more than half had long fingernails. Hand washing in between food handling and money and after using toilet with soap, were found entirely unsatisfactory. All street food vendors must have fitness/ health certificates and concerned department must monitor it carefully

Keywords: Hygiene, Street Food, Vendors, Practices, Food Borne Diseases

Maintenance of Anti-Retroviral Therapy (Art) to HIV Patients and Their Preventive Practices Against Covid-19 Pandemic - A Syndemic Perspective from A HIV Center in Pakistan

Syma Arshad

To see the implementation of designed strategy for uninterrupted supply of HIV treatment at time of COVID-19 pandemic along with the knowledge and preventive practices regarding COVID-19 among HIV positive patients to have baseline data for future interventions to control HIV-COVID-19 syndemic. It was Cross sectional study. The HIV Center at Benazir Bhutto Shaheed Hospital, Karachi Pakistan, from Mar to May 2020. A total of 100 patients who visited the center for medicines were interviewed. Participants were inquired about the availability of Antiretroviral Therapy (ART) during lockdown, discontinuity in treatment suffered during this pandemic, their preventive behaviour against COVID-19, most adopted prevention and source of information for this behavior. Among all the participants 72% had achieved viral suppression. As far as multi month dispensing was concerned 10% received ART for one month, 64% for 2 months and 18% for 3 months as per the strategy devised by Pakistan AIDS control in collaboration with UNAIDS. Out of total only 11% developed symptoms but later on tested negative on PCR test. Most commonly adopted

personal protection adopted was face mask among 68% participants followed by hand washing and social distancing. All the participants were of the opinion that they received sufficient information regarding COVID-19, its prevention and mode of spread. The source of information was TV 60%, HIV center 30% and both TV and HIV center 10%. It was found that all the patients got uninterrupted supply of anti-retroviral medicines. Despite sufficient knowledge regarding the disease they could not comply with prevention fully because of their occupational requirements.

Keywords: Anti-Retroviral Therapy, Covid-19, Human Immune Deficiency Virus, Lockdown

Knowledge, Attitude and Practices (Kap) of Oral Hygiene among School Children

Syma Arshad

Poor oral health can have a profound effect on the quality of life. Pain, tooth abscess, endurance, eating and chewing difficulty, embarrassment over the form of teeth or missing, discolored, or broken teeth can all have a negative impact on people's everyday life. In the current study respondents practiced oral hygiene habits such as brushing twice a day for 2 to 3 minutes. Almost 88 % were aware of the unhealthy gingival condition and the effects of plaque formation. Approximately 53.14 % were aware of gum illnesses, and 50.14% believed that gum diseases might be avoided if proper oral hygiene practices were followed. Nearly half of the youngsters (52.15%) said they would only go to the dentist if they were in pain, despite the fact that the majority (79.4%) said regular dental checkups were vital. Fear was stated as the primary reason for not attending the dentist (67.28%). The study concluded that the most frequent oral hygiene device used for cleaning teeth is a toothbrush with toothpaste; it was discovered that a larger proportion of students cleansed their teeth in the morning. The primary reason for seeing a dentist was for dental discomfort. Further studies related to knowledge, attitude and practice (KAP) of the students about oral health can be encouraged.

Keywords: Oral Health, Knowledge, Attitude, Practice, Questionnaire, Students

Psycho-Social Determinants of Acne in Rural Community of Lahore

Syma Arshad

Acne is a common human skin disease, characterized by areas of skin with seborrhea, comedones, papules, pustules, nodules and possibly scarring. Acne affects mostly skin with the densest population of sebaceous follicles. These areas include the face, the upper part of the chest, and the back. To determine the association between various psycho-social factors and acne.

Population based Case-Control Study in Galvera Village, Lahore from May 2019 to July 2019 was done. A total of 100 persons (50 cases and 50 controls) were recruited in the study. Interviews were conducted

through questionnaire 4th year MBBS students of Rashid Latif Medical College, Lahore under direct supervision of Department of Community Medicine, Rashid Latif Medical College (RLMC). Data was analyzed through SPSS version 25. Overall 48% were males and 52% were female in the study. Among acne cases, mostly were males (70%), above the age of 30 years (80%) and educated (88%). In bivariate analysis, Acne was found more related with aggression (OR 2.302, 95% CI=1.021-5.190), anxiety (OR 3.857, 95% CI=1.670-8.911), constipation (OR 6.143, 95% CI=2.323-16.242), depression (OR 3.019, 95% CI=1.315-6.929), dusty environment (OR 2.528, 95% CI=1.112-5.744), stress (OR 4.644, 95% CI=1.981-10.883), high fat diet (OR 3.551, 95% CI=1.541-8.181), immediate rest after dinner (OR 3.841, 95% CI=1.610-9.161), introvert personality (OR 3.407, 95% CI=1.401-8.285), irregular timings of meal (OR 8.273, 95% CI=3.357-20.388), junk food (OR 4.896, 95% CI=2.044-11.728), lack of personal hygiene (OR 4.472, 95% CI=1.355-14.755), lack of regular intake of fruits (OR 5.310, 95% CI=1.913-14.745), lack of regular intake of vegetables (OR 4.162, 95% CI=1.744-9.935), lack of regular prayers (OR 2.455, 95% CI=1.097-5.494), lack of rest after lunch (OR 2.333, 95% CI=1.027-5.300), undue late night working (OR 6.612, 95% CI=2.762-15.831), high carbohydrate diet (OR 3.622, 95% CI=1.559-8.418), dandruff (OR 2.279, 95% CI=1.017-5.108), exposure to sunlight (OR 6.000, 95% CI=2.528-14.240), habit of skin scratching (OR 8.500, 95% CI=3.412-21.177), intake of carbonated drinks (OR 3.622, 95% CI=1.559-8.418), lack of cleansing before sleep (OR 4.125, 95% CI=1.792-9.497) and less intake of water (OR 4.644, 95% CI=1.981-10.883). However after multivariate analysis while controlling all other listed risk factors, acne was found more related with constipation (OR 4.012, 95% CI=1.067-15.084), dusty environment (OR 2.639, 95% CI=1.035-6.732), stress (OR 3.288, 95% CI=1.022-10.580), irregular timings of meals (OR 5.809, 95% CI=1.359-24.830), undue late night working (OR 3.584, 95% CI=1.251-10.271), exposure to sunlight (OR 5.194, 95% CI=1.677-16.092), habit of skin scratching (OR 6.334, 95% CI=2.378-16.873), lack of cleansing before sleep (OR 3.109, 95% CI=1.203-8.034) and less intake of water (OR 4.518, 95% CI=1.250-16.324) Acne was found significantly associated with constipation, dusty environment, stress, irregular timings of meals, undue late night working, exposure to sunlight, habit of skin scratching, lack of cleansing before sleep and less intake of water

Keywords: Acne, Psychological Factors, Social Factors, Urban, Community

Skills and Attitude of Students Which Affect Fostering of Critical Thinking in Undergraduate Medical Students

Syma Arshad

To identify the skills and attitude of students which affect fostering of critical thinking in undergraduate medical students. Modified Delphi Study. University of Lahore from October 2018 to April 2019. Delphi Study was carried out to develop consensus. Participants were selected through purposive sampling. A draft questionnaire was developed on Google Forms and sent to 05 experts for Pilot Study, construct validation and cognitive pre-testing. Wait Time, rating on Likert Scale and Consensus criteria of 80% were defined before the start of study. Data was analyzed using SPSS 25. A new questionnaire was sent to participants in each round. The study enrolled 27 experts out of which only 14 participated in all the 03 rounds. Experts

initially identified 18 factors related to individual skills and attitude of students. Consensus was achieved for 14 out of final 16 factors. Pre-medical education through Matric / FSc, rote memorization, lack of logical and rational thinking, no active participation in interactive sessions and strategic learning by students hamper fostering of critical thinking. Students from O / A level possess better critical thinking skills because of their training to criticize and question during their class activities. Individual skills / attitude of students affect fostering of critical thinking among undergraduate medical students. They should be addressed primarily in pre-medical schools for better critical thinking abilities in medical school.

Keywords: Critical Thinking, Matric / FSc, O / A Level, Undergraduate Medical Students

Screening of Foeniculum Vulgare L, Coriandrum Sativum L, Pegnum Harmala L. and Achilleae Millefolium L collected from Baluchistan against Fungi causing Onychomycosis

Syma Arshad

Onychomycosis is referred to as fungal nail infection or toe nail infection generally caused by Trichophyton, Candida albicans, Microsporum and Aspergillus species. The Aim of the study was to investigate antifungal potential of four medicinal flora of Balochistan namely, Foeniculum vulgare L., Coriandrum sativum L., Pegnum harmala L. and Achilleae millefolium L. against causative fungal strain of nail infection. Different fractions were prepared using different solvents such as hexane, chloroform and ethyl acetate and antifungal activity was determined through agar well diffusion method against fungal strain candida albicans. For the qualitative determination of phytochemical composition different tests were carried out including tests for alkaloids, terpenoids, carbohydrates, glycosides, proteins, steroids, saponins, phenols and tannins. The highest inhibition zone were observed in aqueous 80% crude methanolic extracts of Foeniculum vulgare L. i.e 26 mm and Coriandrum sativum L. 30mm respectively. Aqueous layer of the crude extract of both plants showed potent activity that were 24 mm and 25mm for Foeniculum L. vulgare and Coriandrum sativum L., the ethylacetate fractions showed inhibition zone 19mm and 18mm in Foeniculum vulgare L. and Coriandrum sativum L. Chloroform and hexane fractions showed least activity against fungi causing onychomycosis. An Antifungal activity highest inhibition zones were observed in aqueous 80% crude methanolic extracts of Pegnum harmala L. i.e 39 mm and Achilleae millefolium 34 mm respectively. Aqueous layer of the crude extract of both plants showed potent activity that were 32 mm for Pegnum harmala L. and 25mm for Achilleae millefolium L. The chloroform fractions showed inhibition zone 19mm in Pegnum harmala L. while 16mm in Achilleae millefolium L. Hexane and ethyl acetate fractions of Pegnum harmala L. and Achilleae millefolium L. showed least activity against fungi causing onychomycosis.

Keywords: Onychomycosis, Phytochemical Composition, Candida Albicans, Agar Well

Psycho-Social Determinants of Acne in Rural Community of Lahore

Maaz Ahmad

The present case-control conducted in Lahore rural community determined the association of various psychosocial factors on the development of Acne which is a common human skin disease and characterized

by areas of skin with seborrhea (scaly red skin), comedones (blackheads and whiteheads), papules (pinheads), pustules (pimples), nodules (large papules) and possibly scarring. A total of 100 persons (50 cases and 50 controls) were recruited in the study. Selection was made on laid down criteria from adult population living in rural community of Lahore after taking due consent. Interviews were conducted through a pretested questionnaire by 4th year MBBS students of Rashid Latif Medical College, Lahore under direct supervision of Department of Community Medicine, Rashid Latif Medical College (RLMC). Data was collected, compiled and analyzed through SPSS version 25. In bivariate analysis, Acne was found more related with aggression, anxiety, constipation, depression, dusty environment, stress, high fat diet, introvert personality, irregular timings of meal, junk food, lack of personal hygiene, lack of regular intake of fruits, lack of regular intake of vegetables, lack of regular prayers, lack of rest after lunch, undue late night working, high carbohydrate diet, dandruff, exposure to sunlight, habit of skin scratching, intake of carbonated drinks, lack of cleansing before sleep and less intake of water. More research is required to elaborate impact of remaining psychosocial factors

Keywords: Acne, Case-Control, Community, Psychosocial

Role of Aegle Marmelos Extract in the Management of Haemorrhoids as Compared with Daflon: A Randomized, Active Controlled, Multicentre Study

Maaz Ahmad

The present study experimentally investigated the amazing healing effect of Aeglemarmelos extract in followed by 4 tablets per day upto one week. Main outcome measures was measurable relief in symptoms and signs and patient tolerance. It was found that clinical severity of inflammation, congestion, tenesmus, hematochezia and oedema diminished in both groups, but more quicker in the Aegle group by the end of 24 hours. Symptoms improved in both groups from day 1 to day 7

Keywords: Aeglemarmelos Extract, Randomized Control Trial, Daflon, Hamorrhoids

Cholesterol Lowering Effect of Citrus Paradisi (Grape Fruit) Peel Extract in Hypercholesterolemic Patients in an Urban Community: A Randomized Control Trial

Maaz Ahmad

The present study experimentally investigated the cholesterol lowering effect of Citrus paradisi peel extract in hypercholesterolemic patients in an urban community at Lahore through a double blind, placebo-controlled, multicentre, randomized control trial. Hypercholesterolemia is the major cause of atherosclerosis which is the most common cause of cardiovascular diseases accounting for 31% of

all deaths worldwide. The study included randomly selected 200 hypercholesterolemic male patients of age group 40 to 70 years, non-smokers, not inhabit of doing exercise daily, and who consented to the trial. Selected patients were placed in 2 groups i.e trial (CPE) group and Placebo group. In trial group, patients were treated with Citrus paradise group (10 mcg in 2 divided doses) for 6 weeks. In placebo group similar looking preparation was given to the patients for the same period. Evaluation of lipid profile was the outcome measure. There was significant reduction in the levels of cholesterol, triglycerides and low density lipoprotein whereas significant improvement in high density lipoprotein level in the citrus paradisi group as compared with placebo group ($p < 0.001$). Regarding blood profile, no adverse event was observed. Citrus paradisi extract significantly reduced cholesterol level in patients with hypercholesterolemia

Keywords: C. Paradise Peel Extract, Hypercholesterolemia, Low Density Lipoproteins

Effect of Apple peel extract on the production of Ig G Immunoglobulins in immune suppressed mice

Maaz Ahmad

The present study determined the amazing effect of apple peel extract on the production of Ig G Immunoglobulins in the present study determined the effect of apple peel extract on the production of Ig G Immunoglobulins in corticosteroid induced immune suppressed mice. Twenty four Swiss albino mice were divided into four groups, with six animals in each group. Group A was given distilled water. Group B was given prednisolone 4 mg/kg, dissolved in distilled water. Group C and D received prednisolone, followed by 25 mg/kg and 100 mg/kg apple peel extract, respectively, half an hour later. All the doses were given orally as a single morning dose for 14 days. On 15th day, serum IgG levels were measured by mouse ELISA kit. Results: An increase in serum IgG levels was observed in both of the extract-treated groups. However, there was no significant difference between the low dose and high dose extract-treated groups. It was concluded that Apple peel extract had a stimulatory effect on humoral immunity and could be used in adjunct with other drugs in immune compromised patients.

Keywords: Apple Peel Extract, Ig Immunoglobulin, Swiss Albino Mice, Prednisolone

Myeloprotective Potential of Malus domestica (Apple) in Carboplatin Induced Myelosuppression in Swiss Albino Rats-A Way to Prevent Dengue and Similar Viral Diseases

Maaz Ahmad

The present study experimentally evaluated the amazing potential of epicarp extract of Malus domestica to prevent myelosuppression induced by carboplatin in Swiss albino rats. It is a well-recognized clinical

observation that there is bone marrow suppression in viral diseases affecting humans and also as a result of chemotherapy. Many plants and fruits are claimed to possess the quality of myeloprotection. If so, they might be used for prevention of viral diseases like dengue. Two groups of Swiss albino rats were taken. One group was given Carboplatin (an anticancer agent) in the dose of 125 mg/kg to induce bone marrow suppression whereas second group was given carboplatin in the same dose along with 100mg/Kg epicarp extract of *M.domestica*. Blood examination was carried out on day 1 and after 7 days to see the effects of the extract. Myelo suppression was observed in both Groups. On average there was more myelo suppression in the Carboplatin group alone marked by 87.53% reduction in platelets count, 66.28% reduction in RBC and 67.11% reduction in WBC count as compared with much less myelo suppression in trial group evidenced by 22.83%, 6.61% and 18.79% reduction in platelets, RBC and WBC count respectively. It was evident that Ethanolic-aqueous epicarp extract of *M.Domestica* seemed to possess myeloprotective properties

Keywords: M.Domestica, Apple Peel, Ethanolic-Aqueous Picarp Extract, Myelosuppression, Dengue

A Knowledge, Attitude and Practice (KAP) study on Dengue prevention in urban Lahore

Maaz Ahmad

The present descriptive cross-sectional study was conducted to evaluate the impact of community capacity building model on knowledge, attitude, and practices (KAP) of the community residing in Walled city, Lahore about was conducted through interviews using pretested questionnaire. The questionnaire was designed to assess the knowledge, attitude, and practices (KAP) regarding Dengue fever to observe the impact of community capacity building model launched one year back. Significant difference in the level of knowledge, attitude and practicing pattern of the community for the prevention of dengue disease was found after launching Community capacity building model. Majority of respondents were significantly more aware (p -value <0.0001) about important features of dengue fever through community capacity building (CCB) model. There was significant difference (p -value <0.0001) in the knowledge of the respondents regarding dengue vector Majority was found much aware of Dengue mosquito. All respondents knew the features of larvae and pupae of dengue mosquitoes, mosquito habitat, breeding places, their biting habits and transmission and prevention of disease. The study revealed that Community capacity building was the most successful approach towards dengue prevention.

Keywords: Community Capacity Building, Dengue, Attitude, Knowledge, Practice

Prevention of Functional Dyspepsia with Carica Papaya Extract

Maaz Ahmad

The study experimentally evaluated the amazing effect of Carica papaya extract in human volunteers suffering from functional dyspepsia. Functional dyspepsia (FD) is a set of relapsing or chronic dyspeptic symptoms in the absence of structural organic lesions. In Pakistan, 14-22 % of general population suffers from FD. A community based, placebo-controlled, double-blind, multi-centered, and randomized clinical trial through systematic random sampling was conducted in Lahore urban community. After initial diagnostic investigations in 200 patients diagnosed as cases of FD fulfilling Rome III criteria were recruited after taking written consent and randomly assigned to one of 2 treatment groups (CP extract group or placebo) in equal number. Each patient received the treatment for 6 weeks. The primary outcome variable was the improvement in gastrointestinal symptom score (GIS) consisting of evaluation of 10 dyspeptic symptoms rated on Likert scale. Dyspeptic symptoms were assessed at the start of trial then after 2, 4 and 6 weeks. Compared with placebo, CP extract group showed a clinically significant improvement. The GIS significantly decreased in CP extract group during the first 2 weeks, compared to the placebo ($p < 0.05$). During the second and third 2-week period, symptoms further improved in CP extract group ($p < 0.05$). After 6 weeks, 95.7% on CP treatment and 3.1% on placebo were completely relieved of FD symptoms. CP extract was found significantly effective gastro-protective as compared with placebo.

Keywords: M.Domestica, Apple Peel, Ethanolic-Aqueous Epicarp Extract

Community Based, Multicentre, Randomized, Double Blinded, Placebo Controlled Clinical Trial of Trachyspermumcopticum Extract Against Stable Angina

Maaz Ahmad

The study experimentally evaluated the amazing anti-anginal effect of Trachyspermumcopticum seed extract in human volunteers suffering from stable angina. Trachyspermumcopticum (Carom seeds) has been reported to have anti-mic and anti-oxidant effects. A prospective double blind, randomized, placebo controlled, multicentered interventional study was conducted with patients of stable angina in Lahore urban community for a period of 6 weeks. In trial group, patients were treated with oral T. Copticum extract for 6 weeks in addition to their conventional medical therapy. In placebo group similar preparation was given to the patients along with conventional therapy taking already. Anginal symptoms (chest pain, chest tightness, difficulty in breathing, nausea, light headedness and anxiety) were evaluated after every fortnightly i.e. after 2,4 and 6 weeks regarding their presence. In this trial 200 patients of stable angina were randomly placed in two equal groups i.e T.Ccopticum (trial) and placebo. There was found no difference in both groups regarding age and sex. All patients were adults. There was significant improvement in the angina signs/symptoms in the T.Copticum group as compared with placebo group ($p < 0.0001$) after the completion of trial period. Regarding safety profile.

Keywords: Trachyspermumcopticum, Stable Angina, Randomize



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RASHID LATIF KHAN UNIVERSITY

Address: 35 km Ferozpur Road, Lahore-Pakistan

Cell: +92 492 451091-7

Email: research.cell@rlku.edu.pk

Web: rlku.edu.pk

