



14TH INTERNATIONAL RESEARCH CONFERENCE

" Security, Stability and National Development in the New Normal "

09TH - 10TH SEPTEMBER 2021

MEDICINE

ABSTRACTS



GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY



14TH INTERNATIONAL RESEARCH CONFERENCE

**SECURITY, STABILITY AND NATIONAL DEVELOPMENT
IN THE NEW NORMAL**

MEDICINE

ABSTRACTS



**General Sir John Kotelawala Defence University
Ratmalana, Sri Lanka**

This book contains the abstracts of papers presented at the Medicine Sessions of the 14th International Research Conference of General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka held on 9th and 10th of September 2021. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form, without prior permission of General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka.

Published by

General Sir John Kotelawala Defence University

Ratmalana

Sri Lanka

Tel: +94-11-263-5268

e-Mail: irc2021@kdu.ac.lk

Website: <http://library.kdu.ac.lk/irc2021/>

ISBN 978-624-5574-27-8

Published on

9th September 2021

Printed by

KSU Graphic (Pvt) Ltd

Conference Chair

Dr Harinda Vidanage

Conference Secretary

Ms Lihini M De Silva

Co-secretaries

Maj BMR Ferdinandesz psc IG

Ms GAI Uwanthika

Capt SAAAK Athukorala

Steering Committee

Brig W Chandrasiri RSP USP psc – President

Brig RGU Rajapakshe RSP psc

Prof KAS Dhammika

Col HMGE Herath RSP USP psc

Prof CL Goonasekara

Lt Col AMDB Adhikari RWP RSP psc

Snr Prof ALS Mendis

Snr Prof SR De Senevirathne

Mr VD Kithsiri

Dr LS Liyanage

Dr NK Gunasekara

Mrs RMNP Rajapakse

Dr LP Kalansooriya

Dr KSC de Silva

Ms SDKC Sandanayake

Editorial Committee

Mr WAAK Amaratunga – President
Dr FMMT Marikkar – Assistant Editor

Cmde (E) MCP Dissanayaka

Maj JPWK Abaywickrama

Sqn Ldr IKJP Kumara

Capt (E) SU Dampage (Retd)

Snr Prof RN Pathirana

Dr JMKB Jayasekara

Ms BKM Jayasekera

Dr PBV Navaratne

Dr YJSN Fernando

Dr UG Rajapakse

Mrs CJ Kothalawala

Dr HRWP Gunathilake

Dr R Vijitha

Dr MMPT Jayasekara

Dr AR Arooz

Dr KGKG Kottegoda

Mr WLPK Wijesinghe

Mr HR Tharanga

Ms BDK Anandawansa

Ms Lakshani Willarachchi

Ms WS Sudusinghe

Ms UWMUSK Walisundara

Ms TD Kothalawala

Ms WMMMTJ Weerarathne

Session Coordinators

Defence and Strategic Studies	Brig RGU Rajapaksha RSP psc Col HMGE Herath RSP USP psc Lt Col PP Serasinghe RSP USP LCdr JPPC de Silva Ms SUW Jayaratne
Medicine	Air Cdre (Prof) RANK Wijesinghe Lt Col (Dr) PH Premaratne Dr SL Malaviarachchi Dr SAC Dalpatadu Dr AU Gamage
Engineering	Capt (E) SU Dampage (Retd) Dr PPCR Karunasekara Mr WSP Fernando
Management, Social Sciences and Humanities	Mr WAAK Amaratunga Ms VU Jayasinghe Mr AHMS Sharic
Law	Mr WS Wijesinghe Maj HSD Mendis Dr YP Wijerathne
Allied Health Sciences	Dr DU Kottahachchi Dr WM Ediriarachchi Dr HMAJ Halahakoon
Built Environment and Spatial Sciences	Dr AH Lakmal Lt Col TC Kathriarachchi (Retd) Archd HT Rupasinghe Mr KT Withanage Mr KAM Chathuranga
Computing	Dr ADAI Gunasekara Dr GACN Priyadarshani Ms TGI Udayangi
Basic and Applied Sciences	Prof CL Goonasekara Dr AWMKK Bandara Dr KW Samarakoon

Message from the Chief Guest



It is with great pleasure that I send this message to the publication of selected conference papers, under a theme that seems more relevant today than ever.

Throughout the history, security has always been the central notion of our existence as a nation. It will continue to be, as long as the geographical realities that define the country's location remains so. This centrality causes our development paradigm to always have a nexus with security, undeniably linking itself to the overall stability of the country.

As the world was compelled to enter into a 'new normal' with the COVID-19 pandemic, the traditional focus on maintaining the hard component of security was overshadowed by the need to replenish its soft component. The world has recently witnessed struggles of global powers with the highest military might, to maintain and uphold their health security. The less-talked about soft security has emerged to overshadow its counterpart, calling us to re-think and re-define the security-development nexus.

COVID-19 posed an unprecedented challenge to Sri Lanka and all developing economies, calling those States to experiment with new ways for achieving national development while managing the novel challenges to their security and stability. In this backdrop, I am delighted to see that the KDU has made allowance for this paradigm shift and hosted its International Research Conference - 2021 along the theme, 'Security, Stability and National development in the New Normal'.

I congratulate all scholars who have contributed to the conference, in particular, those who have shared their research and findings. My heartiest appreciation goes to the Vice Chancellor, Faculty and the staff of KDU whose undying commitment has made this event a reality, even during the pandemic situation.

Steering a country forward in turbulent times is a task that needs meticulous inputs from the country's intellectual body. I am certain that the KDU Research Conference - 2021 has made its mark in this endeavour.

Mr Lalith Weeratunga

Principal Advisor to His Excellency the President of Sri Lanka

Message from the Secretary, Ministry of Defence



It gives me immense pleasure to forward this message on the occasion of the 14th International Research Conference of the General Sir John Kotelawala Defence University (KDU). At the outset, I must appreciate the leadership and guidance which the Vice Chancellor has rendered to maintain the continuity of this highest academic event of the University despite times of great national and international challenges due to the COVID-19 pandemic which has devastated the world.

This year's conference theme: 'Security, Stability and National Development in the New Normal' has taken the current realities of our time into the consideration and how to achieve security and development in times of instability. In this context, I strongly feel that this is an important and commendable approach with innovation demonstrated by the KDU in focussing the attention towards a timely pertinent theme.

The national developments reiterate the importance of a Defence University especially when our motherland is facing unprecedented challenges due to the pandemic. Therefore, I must highlight that our ministerial guidance and blessings, have given the potential for the KDU to actively dwell on a developmental approach to research with Security and Stability as core drivers. This approach will enable the KDU to reach a leading position to guide and influence policy decisions through the knowledge and insights gained from its expansive research programmes.

Furthermore, I believe that the great minds that will lead research deliberations at this conference should actively contribute to aid the great endeavour of steering our beloved motherland towards greater heights in the security and economic spheres, as it is the ultimate responsibility of all Sri Lankans at this time of concern. Finally, I wish that the KDU IRC 2021 will provide a sheer guidance and lead the way towards national development mitigating all current and emerging challenges posed by this devastating pandemic situation. As I extend my sincere well wishes towards the Vice Chancellor, his team and all the participants of this conference for its successful execution and for their future endeavours, I would like to assure that my blessings and support will be with KDU at all times.

General Kamal Gunaratne (Retd)
 WWV RWP RSP USP ndc psc MPhil
 Secretary
 Ministry of Defence

Message from the Vice Chancellor



As the KDU celebrates its 40th anniversary, the International Research Conference is entering its 14th year and adapting to the new normal conditions and unprecedented challenges that have forced many programmes to be called off indefinitely. The evolution and continuity of the research conference into the successive 14th year adapting to challenges bears testimony for the success of the KDU as a seat of learning that can withstand any challenge national or international in nature.

The sheer number of papers that the conference received this year demonstrates the enthusiasm shown by presenters both locally and internationally even at a time of a grave crisis that has put educational institutions under severe stress, and it affirms the faith scholars have had on KDU. As the only defence university in Sri Lanka, KDU has been committed to research and knowledge production that will influence and shape the policy deliberations of security and development. These are core pillars of the stability and existence of any society, and it is our national responsibility to provide such insights through the organization of premier research dialogues.

This year's theme 'Security, Stability and National Development in the New Normal' bears witness to the civil military fusion that KDU has created and its commitment to achieving balance and resilience in times of global crises to safeguard and advance the security and developmental interests of the motherland.

KDU IRC is a platform of cooperation and diplomacy, and it encourages academic collaboration across Sri Lanka's higher education institutions. Research conferences are the ultimate networking events, and we are proud to provide these spaces of engagement where Sri Lankan and international scholars can present their findings and deliberate on the way forward for the nation and for the global community to thrive at a time humanity's resolve is tested by the pandemic. I wish all the very best for the academics, practitioners and policy makers who want to showcase their research and experience at our research conference.

Finally, I appreciate the dedication and hard work of all those who worked tirelessly over the last several months contributing in diverse ways to make the KDU IRC 2021 a reality under the trying circumstances, especially the IRC Chair, the Secretary, and the organizing committees headed by the Deputy Vice Chancellor (Defence and Administration).

Major General Milinda Peiris

RWP RSP VSV USP ndc psc MPhil (Ind)

Vice Chancellor

General Sir John Kotelawala Defence University

Message from the Conference Chair



KDU International Research Conference in its 14th iteration is held amidst celebration of its 40th anniversary and situated in local and global environment that is challenged by a new form of microbial security threat in the form the Covid19 outbreak. KDU stands strong and unbowed to maintain the continuity of this apex academic event this year on the theme, Security, Stability and National Development in the New Normal.

Challenged with the most potent wave of the pandemic, we remain undeterred thanks to the leadership of the Vice Chancellor. The organizing committee has put their heart and soul into adapting and evolving the conference formats that could withstand and confront the new normal conditions in organizing the international research conference.

Academic communities in the world are beacons of hope and resilience and given the sheer number of research papers that were submitted to the conference this year is a testament that KDU remains a space of hope for such communities and a sacred ground where research is encouraged even at trying times.

The theme of this year was a conscious decision to confront the realities that Sri Lanka and the world had to encounter since March 2020, that Covid 19 was a harbinger for a new reality. Universities are centres of resistance and renaissance and the KDU in Sri Lanka sets an example to all other institutions to emphasize the will to confront any challenge.

In this context KDU research conference is nourished by the presentations and deliberations of esteemed plenary speakers and research presentations that will provide vital insights into the key themes of security, stability, and national development. I extend gratitude and best wishes to all presenters who believe in the research culture evolved by the KDU and may you be treated to the finest KDU hospitality that transcend from physical to the cyber space and may you all be contributors to a greater cause for the sake of all humanity.

Dr Harinda Vidanage

PhD (Edin)

Conference Chair

Table of Contents

ORAL PRESENTATIONS

Demography and Disease Related Factors Affecting Pruritus among Patients with Chronic Plaque Psoriasis Attending Tertiary Care Dermatology Unit in Sri Lanka: A Pilot Study	2
PLAN Liyanage, PLGC Liyanage, PV De Silva, J Akarawita, C Gunasekera, S Imafuku and S Lekamwasam	
Prescription of Statins in Patients with Type 2 Diabetes Mellitus: Are We Following the Guidelines?	3
A T Matthias, PDJ Kaushalya, G Somathilake and C Garusinghe	
Descriptive Cross-Sectional Study of the Dietary Patterns, Physical Activity and Co-morbidities of Obese Patients Attending the Medical Nutrition Clinic – UHKDU	4
SAC Dalpatadu, UD Hiripitiya, NK Edirisinghe and R Jayatissa	
Adverse Events Following ChAdOx1nCoV-19 Vaccine in the First Phase of Vaccine Roll Out in Sri Lanka	5
DS Govindapala, WMID Nakkawita, UTN Senaratne, W Wijenayake, RMUS Senarath, TD Wijewardena, P Kawyangana, AD De Silva and NS Fernando	
Impact of Parenting Style on Borderline Personality Disorder in Young Females in Sri Lanka: A Review of Cases	6
K Hettigoda	
Psychometric Properties of Sinhala Version of Burden Scale for Family Caregivers' Short Form (BSFC-s); A Validation Study in Sri Lanka	7
N Rathnayake, T Abeygunasekara, W De Zoysa, D Palangasingha and S Lekamwasam	
Investigating the Clinical Data and Their Correlation with Carcinoembryonic Antigen Levels in a Cohort of Patients with Colorectal Cancer	8
FT Muhinudeen, AJIS Rathnayake, SL Malaviarachchi and WMMS Bandara	
Explanatory Models of Cancer among Sri Lankans: An Interim Analysis	9
TH Solomons, S Malaviarachchi, J Balawardane and S Manjuka	
Early Detection Saves Lives: Diagnosed Stage at the Time of Presentation of Breast Cancer, Time Taken to Seek Treatments and Factors Associated with Treatment Delay in Female Patients at Apeksha Hospital and University Hospital of Kotelawala Defence University ...	10
WA Rashmi, TPS Perera, RYBM Perera, DND Perera, KRCI Perera, LWD Prasad, PLDR Prabath, ARM Rifkaan and WDD de Silva	
Multi-Drug Resistance in Bacteria Isolated from Respiratory Specimens of COVID-19 Pneumonia Patients Admitted to a Tertiary Care Hospital in Sri Lanka	11
WMID Nakkawita, T Senaratne and S Weerasinghe	

Evaluating Bioequivalence of Two Formulations of Clarithromycin Immediate Release Film Coated Tablets in Healthy Sri Lankan Subjects under Fasting Conditions.....	12
US Kulasekara, O Nayanathara, A Ranasinghe, P Gamage, RY Ramasinghe, J Munasinghe, AD De Silva, PH Premaratne, HS Jayasinghearachchi and R Fernandopulle	
Prevalence of Staphylococcus and Candida Species in the Oral Cavities of the Patients with Cleft Lip and Palate (CLP) Prior to Reconstructive Surgery	13
HK Wedage, JAMS Jayatilake and WMPSK Wijekoon	
Prevalence of Home Accidents among Children Aged 1-4 and its Association of Knowledge, Attitude and First Aid Practices of Mothers in Sri Lanka	14
A Balasuriya and UC Gangodawila	
Attitude on COVID-19 among Health Care Workers in Selected Hospitals in Sri Lanka	15
MMPT Jayasekera, AU Gamage and R De A Seneviratne	
Knowledge and Attitudes Regarding Human Immunodeficiency Virus (HIV) and Their Associated Factors among Adult Patients Attending Outpatient Department in Colombo South Teaching Hospital.....	16
MUW Gunaratne, DAYV Gunawardhane ¹ , SM Jeewarathne, YW Kodikara, HS Munasinghe, B Fernandopulle and CSE Goonewardena	
Parental Stress, Economic Burden and Associated Factors among Parents of Thalassaemia Patients in Kurunagala District, Sri Lanka	17
UC Jayasekara, C Wijesundara and KO Bandaranayaka	
Knowledge on HIV/AIDS and Attitude towards People Living with HIV/AIDS among Healthcare Workers at District General Hospital Kalutara.....	18
LTDS Amaratunga, SAC Dalpatadu, WASS Bandara, MRDP Bandara, MHM Amjad, M Aarish, DS Ariyasinghe, PAR Abegunawardana, S Abdullah and A Balasuriya	
Knowledge on COVID19 among Health Care Support Personnel in a Tertiary Care Hospital in Colombo, Sri Lanka.....	19
TS Dissanayake, D Dolkar, M Aarish and MMPT Jayasekera	
<i>In vitro</i> Study to Identify Effects of Foetal Haemoglobin Inducing Agents on Primary Human Erythroid Cells of Beta-thalassaemia Major Patients	20
N Yasara, A Manamperi and S Mettananda	
Detection of Variably Present Genotypes, <i>bimA_{BP}/bimA_{BM}</i> , <i>fhaB3</i> YLF/BTFC and <i>LPSA</i> in Sri Lankan Clinical Isolates of <i>Burkholderia pseudomallei</i> Using Real-Time PCR Based Molecular Assay	21
K Jayaratne, HS Jayasinghearachchi, E Corea, J Masakorala and AD De Silva	

Conservation of *in-silico* Predicted Epitopes of SARS-CoV-2 and Other Native Corona Viruses from Different Geographic Regions 22
ATAD Karunathilake, NPDS Lasanthi, CL Goonasekara and SS Seneviratne

Molecular Characterization and Phylogenetic Relationship of SARS-CoV-2 Strains Infecting a NAVY Cohort during the First Wave of the COVID-19 in Sri Lanka..... 23
HS Jayasinghearachchi, DS Govindapala, WMID Nakkawita, PH Premaratne, CL Goonasekara, DGP Kawyangana KWT Chathuranga, US Kulasekara and AD De Silva

Identification of New Variant of SARS CoV-2 Virus of C-36 lineage with L452R Mutation at University Hospital KDU (UHKDU) Sri Lanka 24
H Abeygoonawardena, UTN Senaratne, MMPT Jayasekera, WMID Nakkawita, FN Mubarak, US Kulasekera, DGP Kawyangana, DS Govindapala and AD De Silva

Unravelling the Genetic Diversity of *Burkholderia pseudomallei* in Sri Lanka using Multilocus Sequence Typing..... 25
K Jayaratne, HS Jayasinghearachchi, E Corea, A Fonseka, T Muthugama, J Masakorala and AD De Silva

POSTER PRESENTATIONS

Evolution of Fatal Lung Damage in COVID 19..... 27
SD Arachchi and R Ruwanpura

Knowledge and Awareness of COVID-19 among Third and Fourth Year Medical Students in General Sir John Kotelawala Defence University. 28
C Zangmo, PMD Wijayasuriya, MZ Zareer, T Yangzom, AM Wijemanna, S Wijayapalan, IGK Yahampath, HSN Wijethunga, DGND Wijedasa, AD De Silva and A Balasuriya

Development of Remote Controlled Smart Appliance for Medical Support and Assistance – COVID-19 (MEDI-MATE)..... 29
LS Dayasiri and KK Bombugalage

Effect of Environmental Temperature in the Spread of COVID-19 with Reference to the 2nd Wave in Sri Lanka 30
BCIJ Nanayakkara, C Sooriyabandara and DBYJ Kumari

Epidemiological Study: Performing a SARS CoV-2 PCR Test Prior to Chemotherapy and Effects on Treatment Outcome During the COVID-19 Pandemic 31
SL Malaviarachchi J Balawardane, NRP Perera, AN Senanayake, H Jayalath, R Samarasinghe and S Liyanage

A Rare Complication of Three Field Oesophagectomy 32
VS Thuduvage, DSP Pullaperuma, ST De Silva, AN Senanayake and NRP Perera

Unusual Presentation of Actinomycosis in Oropharynx: A Case Report 33
VS Thuduvage, WMID Nakkawita, IHS Kumarasinghe, S Pathirage, HTRW Dissanayake and WMDKB Weerasinghe

<i>Hymenolepis diminuta</i> Infection Clinically Presented as Acute Appendicitis: A Case Report.....	34
LI Madaluwage, GM Jayaweera, HMIL Wijesinghe, RAS Rathnayake and S Samarasinghe	
Macroductyly of Foot – A Rare Congenital Malformation: A Case Report	35
LI Madaluwage, GM Jayaweera, HMIL Wijesinghe, GK Rajapaksha and MDLO Peiris	
Secretary Carcinoma of Salivary Gland - Recently Described Rare Entity: A Case Report.....	36
LI Madaluwage, GM Jayaweera, HMIL Wijesinghe and HMSI Ranaweera	
Retromolar Monophasic Synovial Sarcoma: A Rare Entity.....	37
IHS Kumarasinghe and H Jayalath	
Pedunculated Leiomyoma within an Ovarian Endometriotic Cyst.....	38
IHS Kumarasinghe, K Kathriarachchi and CD Ekanayake	
Adenocarcinoma of the Urinary Bladder: A Diagnostic Dilemma.....	39
IHS Kumarasinghe and RE Wickramarachchi	
Carpal Tunnel Syndrome with Negative Nerve Conduction Studies: A Preliminary Experience of a Case Series of Surgical Decompression...	40
KSR Pushpakumara	
Prevalence and Patterns of Self-Medication of Antibiotics among Medical, Allied Health Sciences and Non-Medical Students at General Sir John Kotelawala Defence University	41
ACS Kurukulasuriya, WATS Kulathilake and DM Munasinghe	
Quality of Laboratory Request Forms Received at the Chemical Pathology Laboratory, National Cancer Institute Maharagama.....	42
VJK Jayawardena, YA Jayawardena, KUGC Kavindya, KAGSK Kaluarachchi, MKDN Jayasekara, SN Kaluarachchi, SWAU Karunathilake and GDI Rodrigo	
Perception of Medical Students Regarding Career Guidance Programmes	43
VS Thuduvage and L Gurusinghe	
Awareness of Sexually Transmitted Infections among Advanced Level Students, Attending Tuition Classes in Nugegoda, Sri Lanka.....	44
HMSA Herath, PWSV Fernando, DWY Mahanama, BBSD Bandara, S De S Nagahawatte and NS Fernando	
Health Status and Safety Practices of Workers of Asbestos Sheet Manufacturing Factories in Sri Lanka	45
KAC Wickramaratne, S Gunawardena, DC Wijewickrama, A Karunanayake and WMCD Wijekoon	

Knowledge of the Disease and Practices Related to Use of Inhalers in Elderly Chronic Obstructive Pulmonary Disease (COPD) Patients Attending Chest Clinics	46
KKL Akalanka, P Gurung, S Hamdhoon, WMCS Fonseka, WGGAN Gurusinghe, WGGAB Gurusinghe, M Harrsan and MMPT Jayasekera	
An Observational Study on Blood Supply to meet the Demand at University Hospital, KDU.....	47
WAS Fernando and TI Withanawasam	
Effect of Virechana Karma using Eranda Taila, Followed by Murva Dahaya Kashaya, Bimtambaru Sweda and Bimtambaru Patra Lepa on Rheumatoid Arthritis (Amavata) – A Case Report	48
GTSR De Silva and ERHSS Ediriweera	
Optimization of Quantitative PCR for Amplification of Single Stranded DNA Library.....	49
AI Abeykoon, KMN Kumarasinghe, NV Chandrasekharan and PMTB Wickramasinghe	



ORAL PRESENTATIONS

Demography and Disease Related Factors Affecting Pruritus among Patients with Chronic Plaque Psoriasis Attending Tertiary Care Dermatology Unit in Sri Lanka: A Pilot Study

PLAN Liyanage^{1#}, PLGC Liyanage¹, PV De Silva¹, J Akarawita², C Gunasekera², S Imafuku³ and S Lekamwasam¹

¹*Faculty of Medicine, University of Ruhuna*

²*Department of Dermatology, National Hospital of Sri Lanka*

³*Fukuoka University, Fukuoka, Japan, dermatologist@mac.com*

#achalaliyanage@yahoo.com

Pruritus adds to Koebner phenomenon, psychological distress and poor quality of life in patients with chronic plaque psoriasis (CPP). This study evaluates the prevalence, severity and factors associated with pruritus in CPP. A cross-sectional study was conducted among 199 consecutive patients (aged >18years) with CPP attending dermatology clinic at National Hospital, Sri Lanka. Psoriasis Area Severity Index (PASI) score was estimated and severity of pruritus was determined using 10-point visual analogue scale. The median (IQR) age was 54 (42-62) years and 56.3% were male. 78.9% had pruritus with median (IQR) severity of 3 (2-5). Mild, moderate and severe psoriasis were observed in 52%, 31% and 17% respectively. Patients with pruritus compared to those without pruritus had severe disease. Two groups were similar in distribution of age, gender or disease duration. Patients with pruritus severity score of 5 or more, compared to those of <5, were mostly women who had higher body surface area but not different with regards to age, disease duration, psoriasis severity, treatment modality or habit of smoking. Thus, Pruritus is prevalent among patients with CPP and especially among those with severe disease. Age and duration of disease are not associated with pruritus.

Keywords: *psoriasis, pruritus, visual analogue scale*

Prescription of Statins in Patients with Type 2 Diabetes Mellitus: Are We Following the Guidelines?

A T Matthias^{1#}, PDJ Kaushalya¹, G Somathilake² and C Garusinghe³

¹Department of Medicine, Faculty of Medical Sciences, University of Sri Jayewardenepura.

²University of Sri Jayewardenepura, Sri Lanka

³Colombo South Teaching Hospital, Sri Lanka

#thushara.matthias@sjp.ac.lk

Cardiovascular disease (CVD) is a major cause of morbidity and mortality among patients with type 2 diabetes. Statin reduces CVD risk. We aimed to determine the amount of statin eligible diabetes patients who were prescribed with statin therapy and to determine the factors associated with not prescribing statins to type 2 diabetes patients. A cross sectional study was conducted from February-April, 2021. Type 2 diabetes patients aged between 40-75 years were recruited from the university medical clinic and the endocrine clinic at Colombo South Teaching Hospital, Sri Lanka. 471 patients were enrolled with a mean age of 59.05(±9.139) years. The mean duration of diabetes was 10.97(±9.57) years. 441(93.6%) patients were on statin and 30(6.4%) patients were not on statin therapy. There were 163(34.61%) patients who required high strength statin. Even though only 3(1.73%) were on high strength statin, the rest were on moderate (152, 93.25%), low (4, 2.45%) and none (4, 2.45%). Among patients with prior history of atherosclerotic cardiovascular disease (ASCVD) and the high risk category according to the 10 year ASCVD risk estimation (155, 32.91%), only 17(10.97%) have achieved optimal LDL therapeutic targets(55mg/dL). In conclusion, a large proportion of the study population received statin therapy for primary and secondary prophylaxis. However, the majority were on suboptimal doses of statin and have not achieved therapeutic targets with regard to LDL-C levels. These findings highlight the importance of improvement of diabetes quality of care by implementing evidence based guideline recommendations.

Keywords: *statin, type 2 diabetes mellitus, Sri Lanka*

Descriptive Cross-Sectional Study of the Dietary Patterns, Physical Activity and Co-morbidities of Obese Patients Attending the Medical Nutrition Clinic – UHKDU

SAC Dalpatadu^{1,2#}, UD Hiripitiya¹, NK Edirisinghe² and R Jayatissa³

¹*Department of Medical Nutrition, University Hospital- KDU*

²*Faculty of Medicine, General Sir John Kotelawala Defence University*

³*Nutrition Department- Medical Research Institute*

#amali.dalpatadu@gmail.com

Obesity is a major nutritional problem in which the prevalence has increased substantially over the years. It is a major causative factor in the rise of non-communicable diseases in the country. Unhealthy diets and poor physical activities are major causative factors. The purpose of this study was to identify dietary patterns, physical activities and associated co-morbidities in obese patients. A descriptive cross-sectional study was done taking all patients (n=126) with a BMI above 30, at their first visit, attending the nutrition clinic - UHKDU. Data was collected using an interviewer administered questionnaire after obtaining their consent. 69% had BMI values between 30 and 35. Carbohydrate servings per day was 6-11 in 74.1%. Protein servings per day was less than 3 in 37.3% and fat servings was 3-4 in 39.7%. In 65.1%, the daily fruits consumption was less than two servings. The number of vegetables consumed daily was less than 3 servings in 76.2%. 73.8% reported unhealthy snacking. The mean percentage of kcal/day contributed by carbohydrates, proteins, fruits, vegetables, snacks, sugar and oil were 36.7464 ± 6.71 , 5.6546 ± 2.32 , 15.8732 ± 7.54 , 15.5863 ± 4.83 , 5.6825 ± 3.80 , 2.2864 ± 1.70 , 18.1706 ± 7.87 respectively. Only 39.7% exercised daily in which 88% exercised less than 30 minutes per day. The associated co-morbidities were diabetes (17.5%), hypertension (24.6%), and dyslipidaemia (10.3%) and were reported in 57.1% of patients above 40 years of age. Carbohydrate consumption was high while proteins, fruits and vegetables were below the recommended level. Unhealthy snacking was common while physical activity level was low. Targeted interventions aimed at changing dietary patterns and increasing physical activity at the community level, which is necessary to reduce obesity and lessen its impact on chronic non-communicable diseases.

Keywords: *obesity, diet, physical activity, co-morbidities*

Adverse Events Following ChAdOx1nCoV-19 Vaccine in the First Phase of Vaccine Roll Out in Sri Lanka

DS Govindapala^{1#}, WMID Nakkawita¹, UTN Senaratne², W Wijenayake¹, RMUS Senarath¹, TD Wijewardena¹, P Kawyangana¹, AD De Silva¹ and NS Fernando¹

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University*

#dumithagovindapala@kdu.ac.lk

Phased distribution of ChAdOx1nCoV-19 vaccine commenced in Sri Lanka in January 2021. Since the scarcity of safety data on this vaccine in the Asian population, a prospective observational study was conducted to profile the adverse events following immunization (AEFI) among recipients of the ChAdOx1nCoV-19 vaccine at the University Hospital, KDU between 30th January to 5th February, 2021. A cohort of 688 hospital staff was followed up till the completion of vaccination and 53 were lost to follow up. Data were collected using an interviewer-administered questionnaire and through telephone interviews. AEFI were classified based on WHO criteria. Median age was 32 years (range 19-76 years) and the majority were males (61.6%). Following the first dose 517 (75.1%) experienced AEFI, of which 380 (73.5%) reported both systemic and local symptoms, 110 (21.2%) had systemic symptoms and 27 (5.2%) experienced local symptoms. After the second dose AEFI were less common (n=134, 21.1%, p<0.001). Fever being the commonest reported symptom after the first dose (n=389, 75.2%), vaccination site pain was frequent (n=85, 63.43%) following the second dose. Severe reactions (seizures) were observed only after the first dose in two recipients and no serious AEFI were reported. Following each dose, the onset of AEFI was frequent within 12 hours of the vaccination (77.1% and 67.9% respectively) and symptoms lasted less than 72 hours in most recipients (79.1% and 81.3% respectively). No association was observed between the age and the incidence of AEFI. The study findings are comparable with published world data and the absence of serious AEFI indicates a good safety profile of the ChAdOx1nCoV-19 vaccine.

Keywords: ChAdOx1 nCoV-19 vaccine, adverse events, vaccine roll out, Sri Lanka

Impact of Parenting Style on Borderline Personality Disorder in Young Females in Sri Lanka: A Review of Cases

K Hettigoda

Sri Lanka Navy, University Hospital KDU

kanthihettigoda@gmail.com

Borderline Personality Disorder (BPD) is one of the most challenging psychological conditions for mental health professionals. Theories of borderline personality disorder postulates that unstable and harsh parenting has a direct relationship with development and maintenance of the disorder. Though impact of parenting styles on BPD has been established in the western part of the world it hasn't been explored in South Asian context, despite increasing number of cases reported lately. This paper aims to identify the impact of parenting styles and their personality characteristics on the development and maintenance of BPD using retrospective explanations of four clinically diagnosed young Sri Lankan females. Clinical notes gathered by the researcher during January 2020 - May 2021 were explored to reach research objectives. The findings of this review observed that there are common clinical features of these clients such as excessive self-harm behaviours, emotional dis-regulation, and unstable relationships. It was also observed that their parents especially mothers had used harsh criticisms towards the clients. All these young girls have a strong attitude that they don't want to raise children when they become adults. Harshness of mothers' personality had been a significant factor and fathers' neutral reactions to it also have contributed to the disorder. It was also highlighted that clients' negative and revengeful attitudes towards parents creates a reciprocal impact on maintenance of BPD in young clients. The findings of this case reviews do not discriminate from findings of the other studies and confirms the fact that harsh parenting and characteristics of mothers' lead to BPD and maintains BPD. These observations could be incorporated in therapeutic intervention for BPD and parental education to minimize development and maintenance of BPD in young children.

Keywords: *Borderline Personality Disorder (BPD), harsh parenting, young females, Sri Lanka*

Psychometric Properties of Sinhala Version of Burden Scale for Family Caregivers' Short Form (BSFC-s); A Validation Study in Sri Lanka

N Rathnayake^{1#}, T Abeygunasekara¹, W De Zoysa², D Palangasingha² and S Lekamwasam²

¹*Department of Nursing, Faculty of Allied Health Sciences, University of Ruhuna*

²*Department of Medicine, Faculty of Medicine, University of Ruhuna*

#nirmalarathnayake@ahs.ruh.ac.lk

Caregivers' subjective burden is the cognitive appraisal of stressful aspects of caregiving. Family caregivers who are informal caregivers of older people experience high level of subjective caregiver burden which severely affect both caregiver and care-receiver. The 10-item short version of the Burden Scale for Family Caregivers (BSFC-s) has been developed to provide a quick measure of this variable. This study was done aiming cross-cultural adaptation and evaluation of the psychometric properties of Sinhala version of BSFC-s using family caregivers of older people aged >65years with multi-morbidity. BSFC-s was cross-culturally adapted following standard guidelines and the finalized Sinhala version of the BSFC-s was administered among 81 family caregivers who were involved in long-term care of randomly selected older patients (>65yrs) who were regular attendees of medical and neurology clinics of Teaching Hospital, Karapitiya. Validated Sinhala version of short form-36 questionnaire (SF-36) was also administered at the same time. After 2 weeks, BSFC-s was re-administered among 24 of them. Psychometric properties (reliability and validity) were evaluated. Internal consistency measured with Cronbach's alpha was 0.89 while the item-total correlation ranged from 0.38 to 0.81. The test re-test reliability evaluated with intra-class correlation coefficient (ICC) (95% CI) was 0.99 (0.99-1.00) ($p < 0.001$). The Factor Analysis with Principal Component Analysis revealed presence of three factors with Eigen value exceeding one, explaining 75.3% of cumulative variance. BSFC-s score showed a strong correlation with the overall score of SF-36 (Spearman's Rho; -0.78, $p < 0.001$) and moderate to strong correlations with each domain score of SF-36 (Spearman's Rho; -0.21 to -0.66, $p < 0.01$) indicating the strong concurrent validity. The Sinhala version of BSFC-s adapted cross-culturally showed satisfactory reliability and validity, which indicates that it can be used to assess the subjective burden of informal caregivers of older adults in Sri Lanka.

Keywords: *caregiver burden, BSFC-s, psychometric properties*

Investigating the Clinical Data and Their Correlation with Carcinoembryonic Antigen Levels in a Cohort of Patients with Colorectal Cancer

FT Muhinudeen, AJIS Rathnayake, SL Malaviarachchi and WMMS Bandara#

Faculty of Medicine, General Sir John Kotelawala Defence University

#bandarawmms@kdu.ac.lk

Colorectal cancer (CRC) is the third most common cancer type in the world. Carcinoembryonic antigen (CEA) is widely used as a marker for CRCs. Research has been conducted in different populations to elucidate the correlation between CEA levels and clinical findings in CRCs. However, data on Sri Lankan CRC patients are sparse; none reports the CEA levels or its correlations with clinical findings. The objective of this study was to analyse the clinical findings and the CEA levels in a cohort of CRC patients. Clinical data and CEA levels of 48 patients with CRCs reported to the University Hospital, Kotelawala Defence University, were analysed. The relationship of CEA levels with haemoglobin level, white blood cell count, platelet count, tumour length, degree of differentiation, and alanine aminotransferase levels were also analyzed to see if there is a correlation. The tumour locations were identified as 88.7% left-sided and 11.3% right-sided. At the time of diagnosis, most of the tumours were moderately differentiated (83%), and the average tumour length was 4.4cm. The mean CEA level was 55.9ng/mL. No correlations were identified between CEA level and the selected clinical findings. This study shows that most CRCs are diagnosed at a moderately differentiated stage with high CEA values. Findings in this study favour using CEA as a diagnostic marker. It provided no evidence of a correlation between high CEA and other prognostic markers, even though there is evidence of CEA as a prognostic marker. An extension of this study with more patients is necessary to validate the above results.

Keywords: *Colorectal cancer (CRC), Carcinoembryonic antigen (CEA)*

Explanatory Models of Cancer among Sri Lankans: An Interim Analysis

TH Solomons^{1#}, S Malaviarachchi¹, J Balawardane¹ and S Manjuka²

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*University Hospital, General Sir John Kotelawala Defence University*

#thsolomons@kdu.ac.lk

Current research shows that health-related beliefs are important in predicting adherence to treatment, the psychological impact of the condition, and the subsequent quality of life. The personal etiological framework of an individual regarding his/ her health condition is referred to as an explanatory model. Explanatory models have been researched in relation to many diseases. The current research literature shows that in Asian countries, individuals have two parallel sets of explanatory models. One is based on the western medical models, while the other is based on cultural and religious beliefs. Thus, it is very important to understand both belief-systems in providing health care. This appears to be even more important in chronic conditions such as cancer, where treatment toxicity and treatment tolerance may have a continued impact on quality of life. The current study explores the explanatory models related to cancer in a convenient sample of 140 adults in Sri Lanka. The study was conducted as an online survey. The study indicates that the biological explanatory models for cancer are strongly believed. The most strongly believed religious-cultural reason for cancer is "*Karma*". Most participants believed they would choose both Western medical treatments and religious and culture-specific treatments if they or their family members received a cancer diagnosis. The majority believed Western medical treatment to be the most important treatment modality. Thus, it will be important for clinicians to acknowledge the patient's desire to incorporate alternative treatment methods and non-medical explanatory models in providing cancer treatment.

Keywords: *explanatory models, cancer, Karma*

**Early Detection Saves Lives:
Diagnosed Stage at the Time of Presentation of Breast
Cancer, Time Taken to Seek Treatments and Factors
Associated with Treatment Delay in Female Patients at
Apeksha Hospital and University Hospital of
Kotelawala Defence University**

WA Rashmi#, TPS Perera, RYBM Perera, DND Perera, KRCI Perera, LWD Prasad,
PLDR Prabath, ARM Rifkaan and WDD de Silva

Faculty of Medicine, General Sir John Kotelawala Defence University

#rashmiwijesekara94@gmail.com

Breast cancer is the commonest cancer in Sri Lanka and accounts for 30.0% of cancer diagnoses. Delay in presentation is associated with increased morbidity, mortality and decreased survival. The aim of this study is to assess the correlation between the diagnosed stage at time of presentation of breast cancer, time taken to seek treatment and factors associated with delay in presentation in a cohort of female breast cancer patients at Apeksha hospital and University Hospital, KDU. This was a hospital based cross-sectional descriptive study using a pre-tested self-administered questionnaire. The cohort consisted of 121 women. Mean age was 56.9 years. Most patients (70.2%) were found with early-stage breast cancer, 26.4% were with local advanced cancer and, 3.3% with metastatic breast cancer. A majority (34.7%) had presented within 7 days of noticing symptoms while 15.7 % had delayed medical care for more than 3 months. the majority of the patients (67.8%) sought treatment after noticing first symptom, while 17.4% presented only upon aggravation of first symptom. Significantly delayed presentation was associated with advanced stage, negative family history and lack of knowledge about common breast cancer symptoms. Among patients who self-identified as having significant delay, the commonest reason ascribed was ignorance of mild symptoms. Most respondents in this study (84.2%) had presented to healthcare facilities without significant delay which is a positive improvement compared in comparison to previous studies. Steps must be taken on further improving knowledge and awareness on breast cancer symptoms among women.

Keywords: *breast cancer, stage of presentation, reasons for delay*

Multi-Drug Resistance in Bacteria Isolated from Respiratory Specimens of COVID-19 Pneumonia Patients Admitted to a Tertiary Care Hospital in Sri Lanka

WMID Nakkawita^{1#}, T Senaratne² and S Weerasinghe³

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University*

³*Diagnostic Laboratory, University Hospital KDU*

#dilininak@kdu.ac.lk

Antimicrobial resistance (AMR) is a worldwide public health concern. The COVID-19 pandemic has further worsened this situation and continuous AMR surveillance at different levels is important. Our aim is to conduct an AMR surveillance in COVID-19 pneumonia patients with suspected secondary bacterial pneumonia and requiring ICU care at University Hospital KDU. Laboratory records of 73 respiratory specimens from 50 patients were retrospectively analysed. Mean age was 57.06 and majority, 31 (62%) were males. There were 41 (56.16%) sputum specimens, 30 (41.09%) endotracheal aspirates and 02 (2.74%) bronchoalveolar lavage specimens. Out of the 73 specimens 22 were reported as oral flora and four specimens there were no growth. Remaining 47 satisfactory specimens grew 64 bacterial and fungal isolates. Acinetobacter species, (42.18%) were the commonest while Coliforms (21.87%), Candida species (17.18%), Pseudomonas species (15.62%) and MRSA (3.12%) were isolated. All Acinetobacter isolates, 30% of Pseudomonas and 92.8% of Coliforms were multidrug resistant (MDR) and resistant to at least 3 classes of antibiotics, while colistin sensitivity remained 100%. All Acinetobacter and coliform isolates were resistant to third generation cephalosporins with 40% resistance shown by Pseudomonas. Carbapenem resistance among Acinetobacter, Coliform and Pseudomonas isolates were 100%, 50% and 30% respectively while 28.6% of Coliforms were extended spectrum beta lactamase producers. MDR Gram negative bacteria is highly prevalent in this population. Strict infection control measures and antibiotic stewardship in the early stage of disease is essential to curtail the problem. Further studies to assess the impact of MDR organisms on the COVID-19 outcome is warranted.

Keywords: multidrug resistance, COVID-19 pneumonia, AMR surveillance

Evaluating Bioequivalence of Two Formulations of Clarithromycin Immediate Release Film Coated Tablets in Healthy Sri Lankan Subjects under Fasting Conditions

US Kulasekara¹, O Nayanathara², A Ranasinghe¹, P Gamage¹, RY Ramasinghe¹, J Munasinghe¹, AD De Silva¹, PH Premaratne¹, HS Jayasinghearachchi^{2#} and R Fernandopulle^{1#}

¹Faculty of Medicine, General Sir John Kotelawala Defence University

²Institute for Combinatorial Advance Research and Education, General Sir John Kotelawala Defence University

#²jayasinghearachchihs@kdu.ac.lk, #¹rohinifernandopulle@gmail.com

The WHO mandates therapeutic interchangeability of multi-source oral medicines with the respective innovator be proven either by bioequivalence (BE) or biowaiver studies. Clarithromycin is classified as BCS 11 and accordingly needs BE studies. The present study evaluates the BE of generic clarithromycin (immediate release) 500 mg [two tablets of 250 mg], (State Pharmaceutical Manufacturing Cooperation) with Klaricid® 500 mg tablet, (Innovator, Abbott Laboratories, India) in a randomized, two-treatment, two-period, two-sequence, open-label, single-dose, crossover trial under fasting conditions with one-week washout period. Twelve healthy subjects were recruited and sixteen blood samples obtained over 24 hours after drug administration at 0, 0.2, 0.4, 0.6, 1.2, 1.4, 2, 2.5, 3, 4, 6, 8, 10, 12, 14 and 24. Reverse-Phase High-Performance Liquid Chromatography (RP-HPLC) UV spectrophotometric validated method with a mixture of acetonitrile: KH₂PO₄ (0.67 mM): methanol as the mobile phase at the ratio of 3:1:1 (v/v) was used. Detection of clarithromycin and internal standard Roxithromycin were done at 205nm. Pharmacokinetic parameters C_{max}, T_{max}, area under the plasma concentration-time curve zero-infinity (AUC_{0-∞}), AUC_{0-t}, lambda(z) (first-order elimination rate constant) and t_{1/2} were evaluated statistically using PKMP version 1.03.28. The 90% confidence intervals (test/reference) of C_{max}, AUC_{0-∞}, AUC_(0-t) (logarithmically transformed) were 99.49-100.72%, 92.05, 87-110.69% and 99.51-102.19% respectively within the recommended confidence interval (i.e. between 80-120%). The extent of absorption (AUC_{0-∞} and AUC_{0-t}) and the rate of absorption (C_{max} and T_{max}) were not significantly different. The results conclude the two formulations to be therapeutically interchangeable in clinical practice.

Keywords: bioequivalence, clarithromycin immediate release, healthy subjects, pharmacokinetic parameters

Prevalence of Staphylococcus and Candida Species in the Oral Cavities of the Patients with Cleft Lip and Palate (CLP) Prior to Reconstructive Surgery

HK Wedage^{1#}, JAMS Jayatilake² and WMPSK Wijekoon³

¹Faculty of Medicine, General Sir John Kotelawala Defence University

²Department of Oral Medicine & Periodontology, Faculty of Dental Sciences, University of Peradeniya

³Department of Oral & Maxillofacial Surgery, Faculty of Dental Sciences, University of Peradeniya

#hansiniwedage94@gmail.com

Cleft lip and palate (CLP) is a developmental anomaly that requires surgical correction during early childhood. Staphylococcus and Candida species are common oral commensals that may turn into opportunistic pathogens in CLP patients. This study aimed to investigate the oral prevalence of *Staphylococcus* and *Candida* species in a group of patients with CLP prior to reconstructive surgery. Demographic data were collected using an interviewer-administered questionnaire from 52 CLP patients attending the oral and maxillofacial surgery clinic in the Faculty of Dental Sciences after obtaining the informed assents. Oral swabs were collected for microbiological investigations pre-operatively and cultured on blood and Sabourauds dextrose agar to isolate Staphylococcus and Candida species, respectively. Gram staining, catalase and coagulase test, germ tube test, and chrome agar were used to identify Staphylococcus and Candida species. Antibiotic sensitivity testing (ABST) for Staphylococcus species was performed using the disk diffusion method. The oral prevalence of Staphylococcus species was 34/52 (65.4%) and Candida species 12/52 (23.1%). Staphylococcus species consisted of *S. aureus* 14/34 (41.2%) and Coagulase Negative Staphylococcus (CoNS) 20/34 (58.8%). There were eight methicillin-resistant *S. aureus* (MRSA) and 11 methicillin-resistant CoNS isolates. Candida species (12) included 7/12 *C. albicans* and 5/12 non-*C. albicans* Candida. This study indicates that nearly 2/3 of CLP patients in this sample had oral Staphylococcus species. Therefore, it is important to assess the oral prevalence of Staphylococci and their antibiotic sensitivity patterns and to improve the oral hygiene of CLP patients pre-operatively to avoid opportunistic infections following reconstructive surgery.

Keywords: ABST, candida, cleft lip and palate, staphylococcus, MRSA

Prevalence of Home Accidents among Children Aged 1-4 and its Association of Knowledge, Attitude and First Aid Practices of Mothers in Sri Lanka

A Balasuriya ^{1#} and UC Gangodawila ²

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*Ministry of Health, Sri Lanka*

ab@kdu.ac.lk

Injuries are a leading cause of morbidity and mortality among children worldwide and in Sri Lanka. The objective of this study was to assess the prevalence of home accidents among children aged 1-4 years and its association with knowledge, attitude, and first-aid practices of their mothers in the Medical Officer of Health (MOH) area, Bulathsinhala, Sri Lanka. A community-based descriptive cross-sectional study was carried out among 309 mothers using cluster sampling. Data collected by interviewers using questionnaires were analysed in SPSS version 20. A majority (172, 55.7%) of the children were female. The prevalence of home accidents was 53.7% for three months (95% CI 47.6-59.3). One hundred and ten falls (35.6%, 95% CI 29.9-41.2), 32 (10.4%) cuts, 16 (5.2%) burns, 4 (1.3%) poisonings, 9 (2.9%) chokings, 11 (3.6%) cat/dog bites, 15 (4.9%) scorpion/ centipede bites and 5 (1.6%) insect bites were reported. First-aid knowledge was good among 40.3% (95% CI=34.3-45.0) mothers, and the attitudes and practices were satisfactory. History of any type of home accident was not associated with overall first aid knowledge ($\chi^2=0.045$, $p=.907$). There was a significant association of a history of animal bites with overall first aid knowledge ($\chi^2=4.456$, $p=.046$) and with specific knowledge on animal bites ($\chi^2=8.762$, $p=.003$). Educating mothers and caregivers about first-aid and further research on risk factors for home accidents and factors affecting the first-aid competency of mothers is recommended.

Keywords: *injury, children, knowledge, attitude, practice*

Attitude on COVID-19 among Health Care Workers in Selected Hospitals in Sri Lanka

MMPT Jayasekera#, AU Gamage and R De A Seneviratne

Faculty of Medicine, General Sir John Kotelawala Defence University

priyamja@kdu.ac.lk

Healthcare workers (HCWs) are front-line workers who come in direct contact with the patients and put themselves at risk of being exposed. A positive attitude towards COVID-19 safeguards HCWs and delivers better care for COVID-19 patients. The objective was to assess the attitudes on COVID-19 among HCW in Sri Lanka. A descriptive cross-sectional study was conducted from June to September 2020. Data was collected from doctors and nurses using a self-administered questionnaire in 12 different hospitals (COVID treatment centres, isolations centres, and others). There were 15 attitude questions on a five-point Likert scale. A mean score of ≥ 46 from summed marks for each question was considered as a cut-off. Data analysis was performed using SPSS 21 version a. There were 651 (90.1%) respondents [doctors 311(48%) nurses 340(52%), females (n=433; 66.5%). About 46.2%, 48.3%, and 46.1% participants were worried that they would be exposed to COVID-19 infection, they would be infected with COVID-19 if exposed, and they were not adequately protected even when wearing masks respectively. Eighty-four percent of participants disagreed that COVID-19 patients should be provided with minimal care and 51.5% were not worried about treating them. More than half were worried about being quarantined following exposure to a COVID-19 patient. Being a doctor (OR=1.1; 95%CI: 1.007-1.3) is associated with a positive attitude. Although 50% of participants showed a satisfactory attitude toward the COVID-19, it is important to develop a positive attitude among all HCWs in view of mitigating the pandemic.

Keywords: *COVID 19, healthcare workers, attitude*

Knowledge and Attitudes Regarding Human Immunodeficiency Virus (HIV) and Their Associated Factors among Adult Patients Attending Outpatient Department in Colombo South Teaching Hospital

MUW Gunaratne¹, DAYV Gunawardhane¹, SM Jeewarathne¹, YW Kodikara¹, HS Munasinghe¹, B Fernandopulle² and CSE Goonewardena^{3#}

¹*Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda*

²*Department of Pathology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda*

³*Department of Community Medicine, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda*

#sampatha@sjp.ac.lk

Human Immunodeficiency Virus (HIV) causing Acquired Immunodeficiency Syndrome (AIDS) is a well-known public health concern in the world. Assessing knowledge and attitudes towards the disease is essential in the general population. Objective was to determine the knowledge and attitudes regarding Human Immunodeficiency Virus (HIV) and their associated factors in adult patients. A descriptive cross-sectional study was carried out in 2019 in the Out Patient Department of Colombo South Teaching Hospital. Total of 402 adults aged 18-45 years were selected through systematic sampling. Structured pre tested interviewer administered questionnaire was used for data collection. Chi squared test was used to determine the significance of categorical data. Significance was taken as $p < 0.05$. Mean knowledge of the population was 13.52 (SD \pm 4.752). Participants less than 30 years, unmarried and higher educational level had better knowledge and was statistically significant ($p < 0.05$). Majority had positive attitudes regarding HIV/AIDS. However, negative attitudes in 31-45 years age group are notably higher than the 18-30 year group ($p < 0.05$). Those married and less educated people had more negative attitudes ($p < 0.05$). The most frequent sources of information were the television, internet and newspapers. The knowledge provided by the medical professionals was notably low. Overall knowledge regarding prevention, modes of transmission, related myths and the availability of health services was good. Health care professionals need to play a more important role in diffusing knowledge to the patients.

Keywords: *HIV/AIDS, knowledge, attitudes, general population.*

Parental Stress, Economic Burden and Associated Factors among Parents of Thalassemia Patients in Kurunagala District, Sri Lanka

UC Jayasekara^{1,2}, C Wijesundara³ and KO Bandaranayaka^{4#}

¹*Faculty of Health and Life Sciences, Management and Science University, Malaysia*

²*Management and Science Institute, Colombo 03*

³*Ministry of Health, Colombo, Sri Lanka*

⁴*Faculty of Medicine, General Sir John Kotelawala Defence University*

#bandaranayakak@kdu.ac.lk

Thalassemia is a significant health issue in Sri Lanka where research has focused on the epidemiology. In contrast, less accessible literature is found in on parental stress of Thalassemia patients and their relatives. This study is designed to assess parental stress, economic burden and associated factors among parents of thalassemia patients admitted to Thalassemia wards of Kurunegala Teaching hospital (KTH). A descriptive cross-sectional study was conducted using an interviewer administered questionnaire. The sample size was 145. The data was analysed using “IBM SPSS Statistics” software. The ethical clearance was obtained from National institute of health Sciences (NIHS/ERC/18/72R). Majority of the study participants were females (86.9%) and 57.2% were from Kurunegala district. Among the respondents, 65.5% were less than 40 years of age. The Berry and Browns standard stress scale (rating was reverse scored) was used to detect the stress level of the parents where the mean stress score was 56.7. Among the population, 55.2% was stressed. Parents aged ≤ 40 years ($t=3.6, p<0.001$), education level up to secondary education or below ($t=5.3, p<0.001$), spouse’s education level up to secondary education or below ($t=4.0, p<0.001$), more than one blood transfusions per month ($t=2.06, p<0.001$), monthly income less than 25,000 LKR ($t=3.4, p<0.001$), expenses more than 2,000 LKR for hospitalization ($t=3.6, p<0.001$) and more than one thalassemic child ($t=4.8, p<0.001$) had significant associations with high stress level of parents. The study shows that there is a special need of interventions to tackle the stress levels of the parents of the thalassemic patients.

Keywords: *parental stress, thalassemia, Kurunegala district, economic burden.*

Knowledge on HIV/AIDS and Attitude towards People Living with HIV/AIDS among Healthcare Workers at District General Hospital Kalutara

LTDS Amaratunga#, SAC Dalpatadu, WASS Bandara, MRDP Bandara, MHM Amjad, M Aarish, DS Ariyasinghe, PAR Abegunawardana, S Abdullah and A Balasuriya

Faculty of Medicine, General Sir John Kotelawala Defence University

#lakithamaratunga@gmail.com

Although Sri Lanka has a low Human Immunodeficiency Virus (HIV) prevalence, there has been an increase in HIV/ Acquired Immunodeficiency Syndrome (AIDS) cases over last few decades. HIV-related stigma and discrimination within the healthcare system can have serious effects as it can discourage people living with HIV/AIDS (PLWHA) from seeking essential health care, creating a latent epidemic within the country. The aim of this study is to assess the level of knowledge, the level of stigma and discrimination towards PLWHA among healthcare workers at District General Hospital Kalutara. A descriptive cross-sectional study was conducted using a self-administered questionnaire on a sample of 115 healthcare workers, consisting 31 doctors, 45 nurses and 39 minor staff from medical and surgical wards, selected through simple random sampling. 59.1% of participants had good knowledge, with doctors being the majority. This was a foreseen result owing to years of learning they have undergone. Stigma was highest among minor staff and nurses. 94.8% of participants admitted to practicing at least one act of discrimination, and among them, minor staff were the majority. Poor knowledge was a positive driver for both stigma and discrimination possibly due to unawareness of modes of transmission. As healthcare workers are expected to have a better understanding about HIV and lesser stigma and discriminatory attitudes compared to the public, there is a need for a programme that would educate about the disease to all healthcare workers to eliminate the stigma so that PLWHA will benefit both medically and socially.

Keywords: *HIV, AIDS, stigma, discrimination, healthcare workers*

Knowledge on COVID19 among Health Care Support Personnel in a Tertiary Care Hospital in Colombo, Sri Lanka

TS Dissanayake#, D Dolkar, M Aarish and MMPT Jayasekera

Faculty of Medicine, General Sir John Kotelawala Defence University

#34-mbbs-17006@kdu.ac.lk

Hospitals are being overcrowded with daily rising COVID-19 patients. Healthcare support personnel are more exposed to the COVID-19, due to their nature of work. This includes ambulance drivers, ward attendants, labourers, and cleaners. Their inadequate knowledge affects their attitudes and practices which lead to poor infection control practices, increased intra-hospital transmission, and self-exposure. Our aim is to study the COVID-19 related knowledge and associated factors of the healthcare support personnel. A descriptive cross-sectional study was conducted from September to December 2020. Data was collected from healthcare support personnel at the Colombo south teaching hospital, Kalubowila through an interviewer-administered questionnaire. There were 7 knowledge questions. The total score obtained by each participant was expressed as a percentage of the total possible score. A cut off level of 80% was considered as "good" knowledge. Data analysis was performed using SPSS version 21. There were 383 respondents including (5 ambulance drivers (1%), 19 ward attendants (5%), 349 labourers (91%) and, 10 cleaners (2.6%). Among them, 60% of the ambulance drivers, 58% of the ward attendants, 66% of the HCAs and 20% of the cleaners had good knowledge about COVID-19. Those belonged to the age group of 21-30 years ($p=0.017$), work experience of 10 years or less ($p=0.01$) and, level of education up to GCE(A/L) ($p=0.001>$) had significant good knowledge. Cleaners had very poor knowledge (80%) among all. Most of the respondents had a satisfactory level of knowledge except the cleaners. It is important to have structured training programmes, including basic knowledge of COVID-19 and preventive methods to improve the adherence to precautions in view of protecting themselves and mitigating the pandemic.

Keywords: *COVID-19, healthcare support personnel, knowledge*

***In vitro* Study to Identify Effects of Foetal Haemoglobin Inducing Agents on Primary Human Erythroid Cells of Beta-thalassaemia Major Patients**

N Yasara¹, A Manamperi² and S Mettananda^{1,3#}

¹*Department of Paediatrics, Faculty of Medicine, University of Kelaniya*

²*Department of Molecular Medicine, Faculty of Medicine, University of Kelaniya*

³*University Paediatrics Unit, Colombo North Teaching Hospital*

#sachith.mettananda@kln.ac.lk

Induction of foetal haemoglobin (HbF) ameliorates the severity of beta-thalassaemia by addressing the fundamental cause of the disease. Patients with high levels of HbF beyond infancy have protection from disease complications. The objective of the current study is to identify the effect of HbF inducing agents in vitro in human erythroid cells of beta-thalassaemia major patients. Haemopoietic stem cells (HSCs) were isolated from the peripheral blood of three beta-thalassaemia major patients. Mononuclear cells were separated after fractionation on Histopaque®-1077 Hybri-Max, followed by the isolation of CD34+ HSCs using positive selection by magnetic activated cell sorting. Using a three-phase liquid culture protocol, HSCs were then expanded and differentiated into mature erythroid cells. Primary human erythroid cells at day 7 of the culture were incubated with hydroxyurea(20µM), busulfan(30µM), vorinostat(0.5µM) and valproic acid(1000µM) for 72 hours. Effects of these compounds on cell expansion, viability and morphology were measured using standard laboratory methods. Negative controls were tested in parallel. Ethical approval was obtained from the ethics committee of the faculty of medicine, university of Kelaniya. Busulfan, vorinostat and valproic acid significantly decreased the erythroid cell proliferation compared to controls. Fold expansion and viability of hydroxyurea treated erythroid cells were similar to control cells. Morphologically, vorinostat treated cells were unhealthy. Cells treated with hydroxyurea, busulfan and valproic acid were in at basophilic erythroblast stage compared to the controls indicating that these compounds do not affect cellular differentiation. In conclusion, hydroxyurea did not alter the cell expansion, viability or differentiation of erythroid cells of beta-thalassaemia major patients in vitro, favouring its role as a pharmacological agent to induce HbF.

Keywords: *beta-thalassaemia, primary human erythroid cells, foetal haemoglobin induction*

Detection of Variably Present Genotypes, *bimA_{BP}/bimA_{BM}*, *fhaB3* YLF/BTFC and LPSA in Sri Lankan Clinical Isolates of *Burkholderia pseudomallei* Using Real-Time PCR Based Molecular Assay

K Jayaratne¹, HS Jayasinghearachchi^{2#}, E Corea³, J Masakorala³ and AD De Silva^{4#}

¹*School of Health Science, British College of Applied Studies*

²*Institute for Combinatorial Advance Research and Education, General Sir John Kotelawala Defence University*

³*Faculty of Medicine, University of Colombo*

⁴*Faculty of Medicine, General Sir John Kotelawala Defence University*

^{2#}jayasinghearachchihs@kdu.ac.lk, ^{4#}dharshan_fom@kdu.ac.lk

Burkholderia pseudomallei is the causative agent of a potentially fatal disease, melioidosis, with clinical presentations such as pneumonia, skin complications, neurological complications and sepsis. The bacterium possesses several variably present genes such as *B. pseudomallei* intracellular motility factor *BimA* (*bimA_{BP}/BimA_{BM}*), filamentous hemagglutinin B (*fhaB3*), Yersinia like fimbrial/*Burkholderia thailandensis* flagellum chemotaxis (YLF/BTFC) gene clusters and Lipopolysaccharide O antigen type A (LPSA). These genes have been reported to be differentially associated with bacterial survival in the host cells and virulence. The aim of this study was to determine the prevalence of *bimA_{BP}/bimA_{BM}*, *fhaB3*, YLF/BTFC, and LPSA genotypes in 51 clinical isolates of *B. pseudomallei* in Sri Lanka. Total genomic bacterial DNA extracted from 51 clinical culture positive isolates confirmed by *lpxO* (Lipid A Hydroxylase) was tested for its concentration using agarose gel electrophoresis. Genotyping was performed using fluorescent dye-based RT-PCR molecular assays with oligonucleotide primers targeting each gene specifically. Prevalence of *fhaB3*, YLF, *bimA_{BP}*, *bimA_{BM}* and LPSA were found to be 50.98% (n=26), 92.16% (n=47), 68.63% (n=35), 23.53% (n=12) and 68.63% (n=35) respectively. High genetic diversity was observed among clinical isolates and the study population is of mixed type. The prevalence of isolates with BTFC was 7.84%, similar to the Australian *B. pseudomallei* population whereas the prevalence of YLF in Thailand is 100%. Within the study population, the mortality rate was 47.06%. Diabetes and alcoholism were found as the major risk factors among other risk factors like kidney failure, asthma, and Cushing's syndrome.

Keywords: *Melioidosis, Genotyping, Burkholderia pseudomallei, Sri Lanka, YLF/BTFC, clinical isolates, risk factors, real-time PCR*

Conservation of *in-silico* Predicted Epitopes of SARS-CoV-2 and Other Native Corona Viruses from Different Geographic Regions

ATAD Karunathilake¹, NPDS Lasanthi¹, CL Goonasekara² and SS Seneviratne^{1#}

¹Laboratory for Molecular Ecology and Evolution, Department of Zoology and Environment Science, Faculty of Science, University of Colombo

²Faculty of Medicine, General Sir John Kotelawala Defence University

#sam@sci.cmb.ac.lk

The conservation between antigenic epitopes derived from homologous regions of SARS-CoV-2 proteome and other endemic CoVs could create cross reactive immunity in the endemic regions. Here we explore the immunogenicity of the SARS-CoV-2 viral proteome through *in silico* epitope prediction and analyse the cross reactivity of predicted epitopes of SARS-CoV-2 with SARS, MERS, other HCoVs, and different zoonotic CoVs found in Bats, Pangolins, Palm Civets and Minks. The epitope prediction tools available in IEDB; BepiPred 2.0, DiscoTope 2.0, NetMHCpan 4.0, and 2.22 algorithm were used to predict B cell linear, B cell discontinuous, MHC-I T cell, and MHC- II T cell epitopes respectively. To evaluate the potential for cross-reactivity, the protein sequence homology was compared between the SARS-CoV-2 and the other CoVs using 'Epitope Conservancy Analysis' module in IEDB. A total of 21, 76, 333 and 131 linear-B cell, discontinuous-B cell, MHC-I T cell, and MHC-II T cell epitopes were predicted. The conservation level of both B cell and T cell epitopes from SARS-CoV-2 was high (~75% and 90% respectively) with the majority of SARS-CoV isolates, while it was moderate to low (30%-50%) with endemic HCoVs. However, the level of epitope conservation of SARS-CoV-2 was high with CoVs of *Rhinolophus* bats (Average >90%) and Malayan pangolin (*Manis javanica*) (Average >85%). These results suggest a possibility of existing remnant immunity in individuals residing in the areas where *Rhinolophus* bats and pangolins reside due to exposure to the zoonotic CoVs in them. This is postulated based on the very high level of epitope conservation between SARS-CoV-2 and these zoonotic CoVs.

Keywords: *in-silico* epitope prediction, SARS-CoV-2, zoonotic CoVs, antigenicity, epitope conservation, cross-reactivity

Molecular Characterization and Phylogenetic Relationship of SARS-CoV-2 Strains Infecting a NAVY Cohort during the First Wave of the COVID-19 in Sri Lanka

HS Jayasinghearachchi^{1#}, DS Govindapala², WMID Nakkawita², PH Premaratne², CL Goonasekara², DGP Kawyangana³ KWT Chathuranga³, US Kulasekara³ and AD De Silva^{2#}

¹*Instititue for Combinatorial Advance Research and Education, General Sir John Kotelawala Defence University*

²*Faculty of Medicine, General Sir John Kotelawala Defence University*

³*BML 2, Faculty of Medicine, General Sir John Kotelawala Defence University*

^{1#}jayasinghearachchihs@kdu.ac.lk, ^{2#}dharshan_fom@kdu.ac.lk

This study was based on the first 26 asymptomatic and minimally symptomatic patients from a NAVY cluster of 936, who were diagnosed with COVID-19 by real time-PCR (RT-PCR) during the first wave in Sri Lanka. The aim of this study is to determine genomic variations, mutations, and phylogenetic relationships of SARS CoV-2 strains identified from this group to those circulated locally and globally during the first wave. Ten SARS CoV-2 positive samples with high viral load (CT \leq 22) were subjected to whole-genome sequencing. Comparative genome analysis, real-time mutation tracking, and phylogenetic analysis were performed. Nine SARS CoV-2 strains belonged to Pangolin B.1.3 lineage while strain 141 belonged to lineage B.1. All the ten genomes contained linkage of missense variants nsp3:Q57H, nsp2:T85I, nsp12:P323L concurrently with dominant spike D614G mutation. This is the first study to report on the SARS CoV-2 strains with these amino acid changes circulating in Sri Lanka during April 2020. Based on the phylogenetic analysis, all ten SARS-CoV-2 strains formed a distinct clade within the main clade strains reported from the USA lineage B.1.3 and the parent lineage B.1 in the USA during early March-2020 and strains isolated in Sri Lanka during July-2020. High genetic similarity among genomes indicates the single source of transmission within the study population. Detection of strains with the linkage of missense variants nsp3:Q57H, nsp2:T85I, nsp12:P323L concurrently with dominant S:D614G mutation, phylogenetic clustering suggests different routes of transmission of SARS CoV-2 which might be linked to the importation of strains from the USA probably through travellers.

Keywords: SARS COV-2, molecular characterization, phylogenetic analysis, Navy cohort, first wave in Sri Lanka

Identification of New Variant of SARS CoV-2 Virus of C-36 lineage with L452R Mutation at University Hospital KDU (UHKDU) Sri Lanka

H Abeygoonawardena^{1#}, UTN Senaratne², MMPT Jayasekera¹, WMID Nakkawita¹, FN Mubarak¹, US Kulasekera³, DGP Kawyangana³, DS Govindapala¹ and AD De Silva¹

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University*

³*BML 2, Faculty of Medicine, General Sir John Kotelawala Defence University*

#harshiabeygoonawardena@kdu.ac.lk

Multiple variants of SARS-CoV-2 have been documented globally during this pandemic and it is important to identify possible new variants that might spread within a community. In Sri Lanka, B.1.1.7 (UK variant), B.1.428 (European / Middle East variant), B.1.525 (Nigerian variant), B.1.617.2 (Indian variant) and B.1.351 (South African variant) strains have been previously identified. Six members of one family tested positive for SARS CoV-2 by RT-PCR and rapid antigen tests from nasal swab samples between 22nd and 26th of April 2021 at UHKDU. Next Generation Sequencing (NGS) identified three of the members infected with a SARS -CoV-2 variant of pangolin lineage C.36, which contains a L452R mutation, with high infectivity. All six members had mild disease and recovered without any complications even though some had underlying illnesses. The variants B1.427/B1.429 containing the L452R mutation was first detected from California in May 2020 and rapidly increased to >50% between September 2020 to January 2021 in all sequenced cases. This is the first report identifying a new variant of the C.36 lineage containing the L452R mutation from Sri Lanka followed by detection of the same lineage from Vavuniya in June 2021. The emergence of such variants through the accumulation of convergent mutations or from travelers coming into the country needs further evaluation. Constant monitoring of the spread of known variants of concern and the new Sri Lankan variants are required to determine the impact on public health in Sri Lanka.

Keywords: SARS-CoV-2, L452R, variant, Sri Lanka

Unravelling the Genetic Diversity of *Burkholderia pseudomallei* in Sri Lanka using Multilocus Sequence Typing

K Jayaratne ¹, HS Jayasinghearachchi^{2#}, E Corea³, A Fonseka³, T Muthugama¹, J Masakorala³ and AD De Silva^{4#}

¹BML 2, Faculty of Medicine, General Sir John Kotelawala Defence University

²Institutue for Combinatorial Advance Research and Education, General Sir John Kotelawala Defence University

³Faculty of Medicine, University of Colombo, Sri Lanka

⁴Faculty of Medicine, General Sir John Kotelawala Defence University

^{2#}jayasinghearachchihs@kdu.ac.lk, ^{4#}dharshan_fom@kdu.ac.lk

Burkholderia pseudomallei is the causative agent of a potentially fatal infectious disease, melioidosis. Sri Lanka has been recently confirmed as endemic to melioidosis, and the case fatality rate is 24%. A small number of clinical strains has been characterized and therefore, little is known about genomic epidemiology of *B. pseudomallei* in the country. The main aim of the present study is to determine genetic diversity among 87 clinical isolates using multilocus sequence typing (MLST). MLST analysis resulted in 43 STs, of which 22 were novel: ST 1880-85, 1887-95, 1898, 1900, 1928-30, 1933-34. A total of 196 isolate records with 72 STs reported from Sri Lanka (including those submitted previously) was used for the e-BURST (based upon sequence typing) analysis which showed a considerable genetic diversity among clinical isolates with 72 STs in just 196 isolates comprising multiple sub-groups within a clonal complex. Seventeen singletons (ST 308, 338, 944, 1314, 1133, 202, 1141, 1142, 1144, 132, 1887, 1890, 1883, 1895, 1881, 1930, 421) were found. The ST1132 was the ancestral genotype in Sri Lanka while ST1137 was the commonest ST with 35 isolates. Two distinct alleles *ace* 55, and *ndh* 124 were unique to Sri Lanka. Shared STs observed were 202, 594 (Australia, Thailand), 912 (Cambodia), 501 (India, Thailand), 912 (Cambodia and India), 1692, 293, 1143, 1152 (India), ST13, ST655, ST308 (Thailand), 132 (Australia) and 421 (Belgium). Sri Lankan *B. pseudomallei* population is intermediate between Southeast Asia and Oceania, possibly due to multiple introductions through anthropogenic sources, especially including travel and trade routes.

Keywords: multilocus sequence typing, *Burkholderia pseudomallei*, Sri Lanka, clinical isolates

POSTER PRESENTATIONS



Evolution of Fatal Lung Damage in COVID 19

SD Arachchi and R Ruwanpura#

Forensic Medicine Unit, Teaching Hospital Karapitiya

#rohanruwanpura@gmail.com

Corona Virus Disease (COVID 19), which primarily infects the lungs, exhibits a wide spectrum of pulmonary pathologies. This study intends to demonstrate the depth of lung damage against duration of the illness, considering comorbidities under different background situations. These five cases with COVID 19 were referred by our forensic unit for autopsy; Case 1: A 36-year-old previously healthy male presented with shortness of breath and died in OPD due to the early stage of pneumonia. Case 2: A 70-year-old male died in the ward while on treatment for COVID 19 Pneumonia Case 3 and 4: A 76-year-old woman and an 84-year-old male, both with diabetics, died at home following respiratory symptoms and post-mortem PCRs were positive for COVID 19 Case 5: A 32-year medical officer with multiple comorbidities died at the end of the 5th week of diagnosing COVID 19. The autopsies revealed that the lungs were soft to firm inconsistency in first 2 cases and with histological features of interstitial pneumonia in association with varying stages of diffuse alveolar disease, vascular thrombosis and pulmonary haemorrhages. The deceased were in immunosuppressive status and showed complicated pathologies specially proceeding to secondary bacterial pneumonia and abscess formation and the lungs showed consolidation. Also, there were microscopic evidence suggestive of viral inclusions and other specific changes. Findings of the case series showed similarity with the available, limited literature regarding the Covid-19 related pathological changes of the lungs, which needs further studies to identify further details of pathogenesis and to understand their role in the mechanism of death.

Keywords: *COVID-19, diffuse lung damage, thrombosis, interstitial pneumonia*

Knowledge and Awareness of COVID-19 among Third and Fourth Year Medical Students in General Sir John Kotelawala Defence University

C Zangmo#, PMD Wijayasuriya, MZ Zareer, T Yangzom, AM Wijemanna, S Wijayapalan, IGK Yahampath, HSN Wijethunga, DGND Wijedasa, AD De Silva and A Balasuriya

Faculty of Medicine, General Sir John Kotelawala Defence University

#chimizangmo@yahoo.com

At the end of 2019, the world faced a new strain of coronavirus (SARS-CoV2), and it was first identified in the Wuhan region of China. Due to its high transmissibility and adaptation, the number of global cases increased rapidly. It is an ongoing major global health concern. The healthcare workers were left out to work with limited resources and were treating patients with limited knowledge on the subject. Though the role of medical students during an ongoing pandemic is still being debated, it is assumed that their contribution is pivotal in such circumstances. This is a cross-sectional descriptive study involving 200 third-year and fourth-year medical students of General Sir John Kotelawala Defence University to assess their knowledge on COVID-19, preventive measures and attitudes. A questionnaire was administered online through Google forms, and links were distributed among the sample population. 200 responses were collected, and the results were analysed using SPSS. Among the sample population, 27 % had good knowledge, 33 % had fair knowledge and 40 % had poor knowledge. Regarding attitudes, 32.8 % had a good attitude, 32.2% had a neutral attitude and 34.3% had poor attitude. Social media was seen to be a major source of knowledge (177, 88.5%). Only 18 % of the 3rd year students had good knowledge while a similar knowledge level was seen in 36 % of 4th year undergraduates. A more recent survey may show increased awareness among the students.

Keywords: *COVID 19, knowledge, attitude, undergraduate medical students*

Development of Remote Controlled Smart Appliance for Medical Support and Assistance – COVID-19 (MEDiMATE)

LS Dayasiri and KK Bombugalage#

Sri Lanka Navy

#kamal_bombu@hotmail.com

At the beginning of the year 2020, COVID-19 created International Public Emergency and caused a worldwide outbreak. Social Distancing became an effective solution and an important remedial action to be adopted against the impact of coronavirus on mankind. This paper depicts the design and implementation of control methodologies for specific Remote Controlled Smart Appliance for Medical Support and Assistance (MEDiMATE), which is abundant in combatting the pandemic of COVID-19. These appliances reduce the risk of spreading the corona virus to the hospital staff from the COVID-19 infected patients. This appliance significantly reduces the risk of infectious disease transmission to frontline healthcare professionals by making it possible to visual inspection, triage, evaluation, monitoring, and treating patients being at a safer distance from patients. Also, this facilitates transferring food and goods to locations near patients, which indirectly saves the cost of personnel protective kits (PPE) to be worn by healthcare workers. The contribution of the medical and engineering come together to aid the healthcare system, healthcare workers and society to cater the COVID-19 situation. The proposed appliance was developed in a limited time, where professionals were lacking during the first wave in Sri Lanka. It was able to operate remotely by entertaining social distancing for healthcare professionals who work closer to COVID patients and at the same time reduced the huge cost involved with the PPE within. It was found out that healthcare professionals have to suffer due to many difficulties by working in the PPE, and it is understood that MEDiMATE is able to reduce such difficulties up to a certain level.

Keywords: *COVID-19, safety, social distancing, remote control*

Effect of Environmental Temperature in the Spread of COVID-19 with Reference to the 2nd Wave in Sri Lanka

BCIJ Nanayakkara^{1#}, C Sooriyabandara² and DBYJ Kumari³

¹*Faculty of Medicine, General Sir John Kotelawala Defence University,*

²*Base Hospital Chilaw,*

³*Teaching Hospital, Karapitiya*

#drcharithnanayakkara@gmail.com

Most respiratory tract infections are seasonal so the effect of environmental temperature in COVID-19 is an important fact which hasn't been extensively researched. Environmental temperature of countries with extremely high vs. low COVID-19 cases were compared in April and May, 2020 according to the World Health Organization Coronavirus disease 2019 (COVID-19) Situation Report - 85 and 116. Altogether 213 countries/territories were analysed. Top 24 countries (countries had over 1000 cases in March 2020) with the highest number of COVID-19 cases and 113 countries with lowest cases (countries had less than a 100 cases in March 2020) were separated into two groups. April 15th - May 15th, 2020 marked the average of 9.4°C (SD-7.1) and 16.3°C (SD-8.3) temperatures in the top 24 countries while the bottom 113 countries recorded 22.4°C (SD-7.5) and 24.3°C (SD-7.6) respectively. The values were taken in two days to minimize the error due to short term fluctuations in temperature and cases within the same season. The temperature difference between above groups in respective time windows were 13.0°C (t = 7.8 and p < 10⁻⁴) and 7.4°C (t = 4.3 and p < 10⁻⁴) which was extremely statistically significant. Environmental temperature is extremely significant in the spread of COVID-19, similar to common flu, taking into account that other factors like humidity, rainfall, sunlight and new mutations can possibly have an effect which was not analysed in this study.

Keywords: *COVID-19, environmental temperature, seasonal variation, risk factors, spread*

Epidemiological Study: Performing a SARS CoV-2 PCR Test Prior to Chemotherapy and Effects on Treatment Outcome During the COVID-19 Pandemic

SL Malaviarachchi# J Balawardane, NRP Perera, AN Senanayake, H Jayalath, R Samarasinghe and S Liyanage

Department of Oncology, University Hospital, General Sir John Kotelawala Defence University

#sllrasnayake@kdu.ac.lk

Cancer patients are among the most vulnerable to be infected with the COVID-19 virus. They are immune-deficient and cannot wait for treatment until the pandemic is over. Certain institutes perform the SARS-CoV-2 polymerase-chain-reaction (CoV-PCR) test before chemotherapy, while some institutes avoid it. We aimed to identify if one over the other is beneficial and use the study as a supportive tool to help set up local guidelines. Asymptomatic 140 adult cancer patients with WHO performance scale zero were selected. In Group 1, among seventy patients at UHKDU Hospital that performed a CoV-PCR test, 84.3% were not worried about taking chemotherapy during the pandemic, and 61.5% of patients did not experience any discomfort performing the CoV-PCR test. However, 42.8% experienced a delay in chemotherapy due to the CoV-PCR test. In Group 2, among seventy patients at Apeksha Cancer Hospital that did not undergo a CoV-PCR test, 92.9 % were not worried about treatment during the pandemic, and 91.5% stated they would feel better about performing a CoV-PCR test. However, 15.7% experienced a delay in chemotherapy without a CoV-PCR test. A chi-squared test of independence showed $\chi^2 = 2.54$ and (p-value = .1109, no significance), patients had no fear of undergoing chemotherapy during the pandemic among both groups. With $\chi^2 = 17.48$ and (p-value = .000029, significant) patients appreciated the value of undergoing a CoV-PCR test in both groups. However, $\chi^2 = 13.60$ and (p-value = .000022), there was a significant delay in chemotherapy due to performing a CoV-PCR test before chemotherapy. Authors feel that there is a need for prospective study for the cause of delay in treatment to propose solutions to reduce delay.

Keywords: cancer, CoV-PCR, chemotherapy, COVID-19, treatment delay

A Rare Complication of Three Field Oesophagectomy

VS Thuduvage[#], DSP Pullaperuma, ST De Silva, AN Senanayake and NRP Perera

Faculty of Medicine, General Sir John Kotelawala Defence University

[#]vasanthikat@kdu.ac.lk

Three field oesophagectomy (Akiyama Oesophagectomy) is the only curative surgical procedure described for oesophageal carcinoma which has more than 60% of 5-year survival rate. Tracheo mediastinal fistula following oesophagectomy is a very rarely reported complication in medical literature. A 60 year old patient was diagnosed with stage II oesophageal carcinoma, of signet ring cell type at the gastro-oesophageal junction and underwent oesophagectomy with three field nodal dissection. His recovery from surgery was uncomplicated. On the 10th post-operative day, he developed massive surgical emphysema extending to face, neck and chest bilaterally. He became dyspnoeic and desaturated (SpO₂ 80%) within a few minutes. Endotracheal intubation was performed and the airway was secured immediately. Bilateral intercostal tubes and subcutaneous tubes were inserted. However, there was continuous bubbling of gases through the chest drain bottle. Urgent fiberoptic bronchoscopy was performed that revealed a fistulous opening in the posterior aspect of the trachea, 2 to 3 cm above the carina. The patient was conservatively managed with thoracic surgical opinion. He was weaned from positive pressure ventilation on to spontaneous mode. Unfortunately, he deteriorated while awaiting thoracic surgical intervention and succumbed. Tracheo-mediastinal fistula is a rare but life-threatening complication following oesophagectomy. During the surgical procedure, dissection around the posterior tracheal wall needs to be done cautiously to minimize this complication and surgical repair of the fistula would be a treatment modality.

Keywords: *tracheo-mediastinal fistula, oesophagectomy, oesophageal carcinoma, three field esophagectomy*

Unusual Presentation of Actinomycosis in Oropharynx: A Case Report

VS Thuduvage^{1#}, WMID Nakkawita¹, IHS Kumarasinghe¹, S Pathirage², HTRW
Dissanayake¹ and WMDKB Weerasinghe¹

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*Medical Research Institute, Sri Lanka*

#vasanthikat@kdu.ac.lk

Actinomycosis is a rare infectious bacterial disease caused by *Actinomyces* species and is common among immunocompromised patients. A 56 years old patient, who was a carpenter in profession, was presented to ENT department with irritation and foreign body sensation in the throat for a period of two months. He was a diagnosed patient with diabetes mellitus. Throat examination showed white patches over the posterior pharyngeal wall and rest of the oral cavity was normal. Through the Fiberoptic laryngoscopy examination, whitish patches over the tongue base, posterior pharyngeal wall, and vallecular area were found. Lesions appeared as penetrating the mucosa and multiple samples were taken for culture and histology. Biopsy specimens taken from the lesions showed multiple basophilic spherical clusters of densely packed filaments suggestive of *Actinomyces*. Bacterial culture of specimens from the lesions were performed. The blood and chocolate agar plates showed a pure growth of whitish dry colonies after 72 hours of incubation in microaerophilic conditions. The isolate appeared as branching Gram-positive bacilli on Gram staining. These colonies were later identified as *Actinomyces meyeri* (remel : RapdID ANA11 positive rods) at the reference laboratory. Antibiotic sensitivity report showed susceptible to penicillin and co-amoxiclav. Patient was initially treated with intravenous (IV) penicillin for 5 days and later converted to IV co-amoxiclav and continued with oral co-amoxiclav for a total of 8 weeks. Fibro optic laryngoscopy examinations were initially done weekly to evaluate the response and showed complete recovery of lesions after 8 weeks of antibiotic treatment. Patient was asymptomatic at the end of the treatment and was followed up for 6 months in the clinic and no recurrence was observed.

Keywords: *Actinomycosis, oropharyngeal, actinomyces, microbiota*

***Hymenolepis diminuta* Infection Clinically Presented as Acute Appendicitis: A Case Report**

LI Madaluwage#, GM Jayaweera, HMIL Wijesinghe, RAS Rathnayake and S Samarasinghe

Army Hospital, Colombo 05

#imanilakshika@gmail.com

Hymenolepis diminuta is a cestode infection of rodents. Human infection is uncommon with low parasitisation rates varying from 0.001 % and 5.5%. Less than 500 global cases have been reported up to now. Humans are infested by consumption of foods contaminated with arthropods that are infected with cysticercoid larvae. Children of low socioeconomic status and poor hygiene were the affected group in most reported cases. A 20-year-old male from an urban area was presented with a history of right sided lower abdominal pain of two weeks duration. The full blood count revealed neutrophilic leukocytosis. Ultrasound scan of the abdomen showed a mass lesion in the right side of pelvis, giving a probable diagnosis of an appendicular mass. Macroscopy of the appendicular mass showed a periappendicular tan coloured firm area with purulent material. Haematoxyline and eosin stained tissue sections of the appendix showed a parasite composed of a scolex containing suckers and horizontally arranged proglottids, morphologically compatible with *Hymenolepis diminuta*/rat tapeworm, embedded within necrotic debris of the appendicular lumen. The appendix and periappendicular tissue showed mixed inflammatory infiltrate rich in eosinophils, with many suppurative granulomata. Stool examination revealed commensal organisms only. In this case, the diagnostic method was the microscopic tissue examination of *Hymenolepis diminuta* within the appendicular mass. The most of the reported cases were diagnosed by examination of concentrated stool samples for eggs and proglottids. The awareness of this rare parasitic infection in tissue sections, as in our case will aid the proper identification and early treatment.

Keywords: *Hymenolepis diminuta, acute appendicitis, tissue sections*

Macroductyly of Foot – A Rare Congenital Malformation: A Case Report

LI Madaluwage#, GM Jayaweera, HMIL Wijesinghe, GK Rajapaksha and
MDLO Peiris

Army Hospital, Colombo 05

#imanilakshika@gmail.com

Macroductyly of foot is a rare congenital anomaly with an incidence of 1/18000 in new born children resulting from a hamartomatous proliferation of soft tissue of the affected digits. It is usually detected at birth or in neonatal period as an unilateral enlargement of second to third digits, more commonly in hands. Several syndromic conditions may mimic the clinical picture of macroductyly and need to be excluded before a definitive diagnosis. A 2-year-old girl had a history of enlargement of second, third and fourth digits of left foot since birth. There were no other associated structural or functional disorders. X-Ray films confirmed the soft tissue swelling of second, third and fourth toes. Amputation of the second and third toes and bony excision of fourth toe were done at the age of two years due to progressive enlargement of toes leading to functional impairment and difficulty in wearing same size shoes. The striking feature of the microscopic examination of amputated toes was the hyperplasia of mature adipose tissue arranged as lobules with intervening thick fibrous septa. Hypertrophy and hyperplasia of skeletal muscle and nerve fibres were also evident. Tissue sections of bony elements showed well-formed bony trabeculae with expanded marrow comprising of fatty tissue. The main aim of the surgical intervention is to achieve the best functional outcome of the patient. Even though this is a benign hamartomatous condition, parental counselling on the possibility of recurrences and related surgical interventions should be done, to alleviate the psychological distress.

Keywords: *Macroductyly, soft tissue hyperplasia, amputation*

Secretory Carcinoma of Salivary Gland - Recently Described Rare Entity: A Case Report

LI Madaluwage#, GM Jayaweera, HMIL Wijesinghe and HMSI Ranaweera

Army Hospital, Colombo 05

#imanilakshika@gmail.com

Secretory carcinoma of salivary glands, first described in 2010 is a rare entity characterized by morphological, immunohistochemical and genetic resemblance to mammary secretory carcinoma which displays the characteristic translocation $t(12;15)(p13;q25)$ resulting in ETV6-NTRK3 gene fusion. In laboratories lacking the resources to analyze the specific molecular alterations, histomorphology and immunohistochemistry are the key tools to establish the accurate diagnosis. A 40 year old female patient was presented with a history of progressively enlarging, lump over left parotid region for one year duration. A superficial parotidectomy was performed, following radiological detection of a mass with a lobulated contour. Sectioning of the mass showed solid areas and cysts filled with gelatinous material. Hematoxylin and Eosin stained sections revealed an ill-defined tumour predominantly composed of papillary-cystic with peripherally located microcystic areas. Tumour cells are cuboidal to polygonal and contain eosinophilic cytoplasm and uniform nuclei. Some cells contain vacuolated cytoplasm. Intraluminal PAS positive, colloid like secretions are seen. Tumour cells show strong and diffuse nuclear and cytoplasmic positivity for S-100 immunostain. Secretory carcinoma of salivary gland mimics acinic cell and low grade mucoepidermoid carcinoma histomorphologically. Diffuse strong S-100 immunoreactivity, presence of PAS positive intraluminal secretion and absence of PAS positive cytoplasmic granules in secretory carcinoma exclude the other two differential diagnoses. Although the detection of ETV6-NTRK3 gene fusion resulting from translocation of $t(12;15)(p13;q25)$ is the gold standard for diagnosis, as in this case, when molecular confirmation is lacking, the comprehensive knowledge on histomorphological and immunohistochemical features of new entities of salivary gland carcinoma, warrant an accurate diagnosis.

Keywords: *secretory carcinoma, papillary cystic growth pattern, ETV6-NTRK3 gene fusion*

Retromolar Monophasic Synovial Sarcoma: A Rare Entity

IHS Kumarasinghe^{1#} and H Jayalath²

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*University Hospital, General Sir John Kotelawala Defence University*

#iranthihs@kdu.ac.lk

Synovial sarcoma (SS) is a rare tumour that arises in the periarticular tissues of the extremities. 3 to 10% of these sarcomas occur in the head and neck, mainly involving the pharyngeal region. Synovial sarcoma of the mandible (retromolar area), is extremely rare. A 17-year-old girl was presented to the surgical clinic with a gradually enlarging lump in the oral cavity. Examination revealed an ulcerated right retro molar mass (RMM). CT scan revealed an infiltrating RMM extending into the larynx and partially obstructing the lumen. Biopsy was done and sent for histology. Microscopy revealed a malignant spindle cell tumour comprising plump elongated cells with vesicular nuclei, arranged haphazardly and as fascicles. Blood vessels with a haemangiopericytic pattern were present. Histology suggested a monophasic synovial sarcoma (MSS). Immunohistochemistry showed tumour cells positive for AE1/AE3, CD99, BCL2 and negative for CD34, CD31, SMA, CD117 and p63. This confirmed the diagnosis as a retro molar MSS. Diagnosis of SS requires considering its histology, immunohistochemical findings and identification of specific (x; 18) translocation. Histologically, there are three subtypes of SS. Out of these, MSS is a diagnostically challenging entity. This challenge is further increased when MSS occurs in rare locations. The (x;18) translocation is present in 90% of the cases. However, molecular studies are not required if SS can be diagnosed using radiology, histology and immunohistochemistry as done here. This case focuses on the importance of including MSS in the working differential diagnosis of oral malignant spindle cell tumours as well as highlight key features in its diagnosis.

Keywords: *Retro molar, Monophasic, Synovial sarcoma*

Pedunculated Leiomyoma within an Ovarian Endometriotic Cyst

IHS Kumarasinghe^{1#}, K Kathriarachchi² and CD Ekanayake¹

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*University Hospital, General Sir John Kotelawala Defence University*

#iranthihs@kdu.ac.lk

Leiomyomas are benign, spindle cell tumours (SCT) of smooth muscle origin. They account for 0.5-1% of benign ovarian neoplasms. Most ovarian SCT are fibromas. Other ovarian SCT include fibrosarcomas, thecomas, granulosa, and sertoli-leydig cell tumours. A 52-year-old woman was presented with heavy menstrual bleeding and pallor. Her haemoglobin was 6.4g/dl. Previous endometrial and cervical biopsies were unremarkable. A cystic left ovary with a solid area was seen on ultrasound scan. A total abdominal hysterectomy with bilateral salphingo oophorectomy and omentectomy was done following optimisation of haemoglobin levels and specimen was sent for histopathology. Macroscopy revealed an enlarged, cystic left ovary. A pedunculated, mass with a tan, whorled cut surface was attached to the inner surface of the cyst. The rest of the cyst wall was smooth and brown coloured. Microscopy revealed an ovarian endometriotic cyst containing a benign pedunculated SCT. The spindle cells had cigar shaped nuclei and were arranged as interlacing fascicles. Immunohistochemistry revealed strong diffuse SMA and desmin positivity and very low Ki 67 values. A diagnosis of a pedunculated leiomyoma within an endometriotic cyst was made. Ovarian leiomyomas are rare, benign tumours of uncertain histogenesis. Possible origins include smooth muscle of hilar blood vessels, ovarian ligament, multipotential ovarian stromal cells, and undifferentiated germ cells. When associated with endometriosis, smooth muscle metaplasia of endometrial or ovarian stromal cells present in the endometriotic cyst are possibilities. This case reports an unusual presentation of a pedunculated leiomyoma within an ovarian endometriotic cyst. It also highlights that despite its rarity, leiomyomas should be considered in the differential diagnosis of ovarian SCT.

Keywords: *spindle cell tumours, ovarian leiomyoma, histogenesis*

Adenocarcinoma of the Urinary Bladder: A Diagnostic Dilemma

IHS Kumarasinghe# and RE Wickramarachchi

Faculty of Medicine, General Sir John Kotelawala Defence University

#iranthihs@kdu.ac.lk

Adenocarcinoma of the bladder (BA) accounts for less than 2% of bladder cancers and includes primary adenocarcinoma of the bladder (PA) and secondary deposits of an adenocarcinoma (SA). One-third of the PA arise from urachal remnants. Therefore, PA are categorized as urachal (UA) and non-urachal adenocarcinomas (NUA). SA are mostly of colonic or prostatic origin in males. A 26 year-old male presented with painless haematuria. Ultrasound scan and contrast-enhanced CT showed an irregular polypoidal growth arising from the anterior superior bladder wall. Transurethral resection of the bladder tumour revealed fibro-vascular papillary cores lined by columnar mucinous epithelium. Glandular structures infiltrated the muscularis propria. The transitional epithelium was absent. This histology was in keeping with a BA. Immunohistochemistry of tumour was Ecadherin and CK20 positive. CK 7 was focally positive and PSA was negative. Based on the immunohistochemical profile, this was a PA. This was further supported by serum PSA, CEA, Colonoscopy, and whole-body PET CT which excluded a secondary adenocarcinoma. Subsequently, a partial cystectomy (including urachal remnant) was done. This showed the absence of residual tumour and absence of other bladder pathologies. UA was differentiated from NUA using diagnostic criteria set by the MD Anderson Centre in 2006. The staging was done using the Sheldon staging system. Accordingly, this tumour was diagnosed as a urachal adenocarcinoma of the bladder, stage III. BA has similar histological and immunohistochemical features. Differentiating the different subtypes is essential for patient management. This case highlights the importance of using multiple diagnostic tools in overcoming these diagnostic challenges.

Keywords: *urachal adenocarcinoma, non-urachal adenocarcinoma, secondary adenocarcinoma*

Carpal Tunnel Syndrome with Negative Nerve Conduction Studies: A Preliminary Experience of a Case Series of Surgical Decompression

KSR Pushpakumara

Faculty of Medicine, General Sir John Kotelawala Defence University

smpshpkmr@yahoo.com

Carpal tunnel syndrome (CTS) is the commonest compressive neuropathy involving peripheral nerves. When clinical diagnosis of CTS is made, it is common practice among clinicians to confirm it by nerve conduction studies (NCS), which has sensitivity of 73% - 90%. Surgeons are reluctant to perform carpal tunnel decompression (CTD), the only long lasting treatment option available, when NCS is not suggestive of CTS. There is hardly any data about the outcome following surgical treatment of this specific group. We discuss about the surgical outcome of four females aged 55, 47, 55 and 16, and a male of 48 years old with classical clinical picture of CTS but negative NCS. None had any underlying aetiologies such as diabetes mellitus. Informed consent was taken explaining that their NCS are negative, but test is not 100% sensitive, and improvement following surgery might or might not be as good as for those with positive NCS, but no data available to comment. All five underwent uncomplicated CTD, with complete relief of all the symptoms by the time they attended the clinic two weeks post op. Four patients had an excellent long term outcome over several months, though the 16 year old was lost from the follow up. In our series, patients with clinically diagnosed CTS but negative NCS had a very good outcome following CTD. Though the number is small and more data is needed to draw firm conclusions, surgery may be carefully considered in this subgroup of patients when consecutive management has failed.

Keywords: *carpal tunnel syndrome, negative nerve conduction studies, carpal tunnel decompression*

Prevalence and Patterns of Self-Medication of Antibiotics among Medical, Allied Health Sciences and Non-Medical Students at General Sir John Kotelawala Defence University

ACS Kurukulasuriya#, WATS Kulathilake and DM Munasinghe

Faculty of Medicine, General Sir John Kotelawala Defence University

#kchalindri@yahoo.com

Self-medication with antibiotics is a major cause of concern as it leads to antibiotic resistance. This study aims to describe the prevalence, patterns and associated factors of antibiotic self-medication among medical, allied health and non-medical students in the 4th and 2nd years at the General Sir John Kotelawala Defence University (KDU). Data was collected using a self-administered online questionnaire. 225 medical students, 342 allied health students, 404 engineering students and 280 law students were invited to the study where only a total of 177 responded. The highest prevalence of self-medication with antibiotics was seen among medical students who obtained it over the counter. It was commoner among the 4th years who are higher in seniority and have a knowledge in pharmacology. Amoxicillin was the most commonly used antibiotic among all groups. The common illnesses for which self-medication was used were sore throat and fever. A notable finding was that a majority from non-medical students self-medicate with antibiotics for only 1 to 2 days whereas, medical students and allied health students self-medicate for a duration of 2-4 days. Although increased family income is linked to an increased tendency to self-medication, it was not significant in our study. In conclusion the results of our study indicate that self-medication is common among students and in spite of knowledge in clinical pharmacology, medical students self-medicate. This emphasizes the need to raise awareness on the knowledge of the proper use of antibiotics and the dangers of self-medication among undergraduates, as well as the need to monitor the sale of antibiotics without prescriptions by the pharmacies.

Keywords: *antibiotics, self-medication, undergraduates*

Quality of Laboratory Request Forms Received at the Chemical Pathology Laboratory, National Cancer Institute Maharagama

VJK Jayawardena#, YA Jayawardena, KUGC Kavindya, KAGSK Kaluarachchi, MKDN Jayasekara, SN Kaluarachchi, SWAU Karunathilake and GDI Rodrigo

Faculty of Medicine, General Sri John Kotelawala Defence University

#34-mbbs-17022@kdu.ac.lk

Laboratory requests forms act as the communication link between the requesting physician and the laboratory. Inadequate information and errors in the filling out process can significantly impact the quality of laboratory request forms resulting in pre-analytical errors which effects the clinical decision and ultimately the treatment outcome. Assessing and evaluating laboratory request forms is an important aspect in providing good clinical care. The aim of this study was to assess the quality of the laboratory requests forms brought by OPD patients to the chemical pathology laboratory at National Cancer Institute Maharagama. A cross sectional descriptive study was carried out on 150 randomly selected request forms for blood investigations and urine analysis issued by the OPD. The information obtained from the request forms was tabulated and analyzed using the SPSS Version 20. Parameters assessed were the presence or absence of the patient 's full name, age, serial number, issuing date, brief history, doctor 's signature and official seal, request priority and the legibility of the handwriting. The most frequently mentioned component on the request form was the serial number (147 - 97.3%) and the most frequently omitted component was request priority (96 -64%). Eighty-three (55.3%) of the request forms had fairly legible handwriting and 27 (18%) of request forms had good handwriting. Following the data analysis, we were able to conclude that majority of the request forms (75.3%) were filled adequately and 73.3% of the request forms were legible.

Keywords: *laboratory request forms, quality, outpatient department*

Perception of Medical Students Regarding Career Guidance Programmes

VS Thuduvage^{1#} and L Gurusinghe²

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*University of Peradeniya*

#vasanthikat@kdu.ac.lk

Medical students acquire knowledge and skills during their degree program and little focus on career progress and future professional developments. This study was performed to identify the factors influencing the selection of medical career pathway, students perception on career guidance programmes, as it is truly confusing making choices about the future options. If a medical student selects a career path divergent to his or her skills and passion, it can cause dissatisfaction in the rest of their medical practice. A group of medical students were selected who completed their final MBBS exam and participated in the career guidance program which was conducted online by a group of senior academics and a senior medical administrative person. Students' perception on the career guidance program was recorded using a Google form. Results were analysed to identify students' perspectives on career guidance program. Majority of the students were influenced by their personal preferences ahead of the parental influence during their selection on entering the medical pathway. The study showed most of the students depend on lecturers as their main source of information and students were considering the quality of life when deciding the future career path. Some of the students were facilitated by the inspirational specialists regarding the future career decision. Most of the students were not satisfied with the adequacy of the availability of programs to facilitate the decisions on career pathways. The majority identified the period before starting internship as the best time to conduct career guidance programs. Medicine and its related subspecialties stand as preferred future career choices of most of the students.

Keywords: *career guidance programme, career counselling, medical students, career choice*

Awareness of Sexually Transmitted Infections among Advanced Level Students, Attending Tuition Classes in Nugegoda, Sri Lanka

HMSA Herath#, PWSV Fernando, DWY Mahanama, BDSB Bandara,
S De S Nagahawatte and NS Fernando

Faculty of Medicine, General Sir John Kotelawala Defence University

#sanuriherath26@gmail.com

Sexually Transmitted Infections (STIs) have become a major problem due to the lack of awareness, especially among sexually active adolescents. Worldwide, nearly two-thirds of the Sexually Transmitted Infections (STIs) affect individuals aged 25 years and younger. We aimed to assess the knowledge of school going adolescents on STIs. Upon obtaining ethical clearance, a cross-sectional study based on convenience sampling was performed among 402 Advanced Level (G.C.E. A/L) students aged 18 and above attending a set of selected tuition classes in Nugegoda, Sri Lanka for Biology, Mathematics, Commerce, and Arts. We employed a pre-tested self-administered questionnaire to collect responses to STI-related questions, in which we were able to acquire a response rate of 87.8%. The results were analysed using the Microsoft Excel 2016 spreadsheet package, dividing into categories: knowledge of STIs, awareness of STI transmission and prevention. First, the percentages of awareness level of the responses were evaluated within the sample. Then, the chi-square test was used for associations between the awareness level and each demographic type. The results showed that 72.1% of the respondents gathered knowledge from the school syllabus. The overall knowledge of STIs was better with males (68.6%) and Biology students (65.8%). The significant associations were shown between gender and the overall knowledge ($p=0.035$), religion with STI transmission ($p=0.000$) and prevention ($p=0.000$), and monthly income with overall knowledge ($p=0.017$). Many respondents were aware of STI transmission (57.6%) and prevention (52.8%), but only 43.5% had basic knowledge on STIs. Therefore, it is recommended to educate adolescents on STIs for broader knowledge through the educational system.

Keywords: *sexually transmitted infections, advanced level students, awareness*

Health Status and Safety Practices of Workers of Asbestos Sheet Manufacturing Factories in Sri Lanka

KAC Wickramaratne¹, S Gunawardena^{2#}, DC Wijewickrama², A Karunanayake² and WMCD Wijekoon³

¹ Department of Pathology, Faculty of Medicine, University of Ruhuna

² Department of Physiology, Faculty of Medicine, University of Ruhuna

³ Department of Zoology, Faculty of Science, University of Ruhuna

sampathgu@yahoo.com

Exposure to asbestos causes health hazards including asbestosis, mesothelioma and lung cancer. Asbestos industry workers are at a higher risk of exposure. Objective of this research is to assess the health status and the safety practices of asbestos industry workers. Four hundred seventy-five workers from three asbestos sheet manufacturing factories were recruited into the study. One hundred sixty-two subjects who were not exposed to asbestos were recruited as controls. Study design was a comparative cross-sectional study. Information related to safety practices of workers were collected using an investigator-administered questionnaire. A doctor in the research team examined their respiratory system. They underwent lung function test (Cosmed Pony-FX spirometer). Mean duration of exposure to asbestos was 12.8±10.2 years. Results showed that protective gear for protection of hand, body, eyes and respiratory system from asbestos fibre were worn by 260 (54.74%), 63 (13.26%), 90 (18.95%) and 402 (84.63%), respectively. Regular use of respiratory protection was practiced only by 120 (25.26%). 458 (96.42%) had normal respiratory system examination findings while three (0.63%) had crackles at lung bases and 14 (2.95%) had wheezing. FVC was below predicted in 178 asbestos workers and 58 controls (Odds ratio (OR) 1.075 (95% CI 0.742-1.557), P=0.775). FEV₁ was below predicted in 183 asbestos workers and 51 controls (OR 1.364 (95% CI 0.933-1.994), P=0.131). FEV₁/FVC ratio was below predicted in 11 asbestos workers and seven controls (OR 0.525 (95% CI 0.200-1.378), P=0.291). FEF 25-75 below predicted in 41 asbestos workers and 21 controls (OR 0.634 (95% CI 0.363-1.110), P=0.146). It is concluded that safety practices of workers can be further improved. Lung function parameters of asbestos industry workers are not significantly different from those of controls.

Keywords: *asbestos, safety practices, lung function test*

Knowledge of the Disease and Practices Related to Use of Inhalers in Elderly Chronic Obstructive Pulmonary Disease (COPD) Patients Attending Chest Clinics

KKL Akalanka, P Gurung, S Hamdhoon, WMCS Fonseka, WGGAN Gurusinghe, WGGAB Gurusinghe, M Harrsan and MMPT Jayasekera#

Faculty of Medicine, General Sir John Kotelawala Defence University

#priyamja@kdu.ac.lk

Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of death in the world, commonly seen among elderly. It is preventable and treatable. Malpractices and lack of knowledge related to the disease is one of the main reasons to increase hospital admissions and deaths among them. A descriptive cross-sectional study was conducted to explore the knowledge of the disease and practices related to the use of inhalers among elderly at the chest clinics. A scoring system through a pre tested validated questionnaire was used to assess the knowledge about the disease and the practices related to the use of inhalers. This was conducted in the National Hospital for Respiratory Diseases, Welisara and District General Hospital, Matale in August 2020. A total of 148 previously diagnosed patients with COPD, age of 65 years and above were studied. Of the participants, 85 (57.4%) were males and 114 (77.1%) were within the range of 65 to 75 years, 30 (20.2%) were 76 to 85 years and four (2.7%) were above 86 years. Among them smokers in anytime of their lifetime and non-smokers were 66 (44.65%) and 82 (55.4%) respectively. The lack of knowledge about the disease showed a significant association with the number of hospital readmissions for the past three months ($p=0.05$). However, the association between practices related to use of inhalers and the number of hospital readmissions was not significant ($p> 0.05$). The numbers of hospital readmissions within the past three months were less in patients with good knowledge regarding the disease. There was no significant relation with regard to the practices related to the use of inhalers in elderly COPD patients attending chest clinics.

Keywords: *knowledge, practices, inhalers, elderly*

An Observational Study on Blood Supply to meet the Demand at University Hospital, KDU

WAS Fernando^{1#} and TI Withanawasam²

¹*Blood Bank, University Hospital, General Sir John Kotelawala Defence University*

²*Faculty of Medicine, General Sir John Kotelawala Defence University*

#anishaf9@gmail.com

Blood service linked with undisrupted supply of blood components is a major requirement. To study the supply and demand of blood and components at University Hospital, KDU, Blood Bank Management System statistics was used from January 2020 to May 2021. The number of donors who attended in-house and mobile sessions during the study period was 1566. 1476(64.4%) total blood units were collected. 951 were from in-House donations and 525 (35.6%) were from mobile campaigns. Mean blood collection was 2.6 blood units per day. Number of red cell units requested for patients was 1856. The blood component issue distribution during the study period was 33.2% medical, 27.1% surgical, 0.5% paediatric and 7.7% gynaecology & obstetrics wards. The mean red cell transfusion episodes per day were 10.41 units. Requirement of platelet and plasma component units per day was 1.2 and 0.8 respectively. Deficit of red cell supply to demand was 7.8 units (300.3%) per day. Mean number of blood units received from National Blood Centre to overcome the deficit was 3.6 units of RCC per day. The identified challenges that needed to be addressed to fulfil the demand for blood supply included, being a new establishment, unawareness of the public of the facilities for donation and the COVID-19 pandemic. The strategies implemented to increase donations were to, increasing the public awareness by social media posts, displaying of posters, announcements and calling for donors. The most successful methods observed were hospital announcements and calling for donors. It is concluded that community awareness of blood donations to UHKDU has to be improved and regular auditing should be planned to assess the progress.

Keywords: *donation, blood supply, blood demand*

Effect of Virechana Karma using Eranda Taila, Followed by Murva Dahaya Kashaya, Bimtambaru Sweda and Bimtambaru Patra Lepa on Rheumatoid Arthritis (Amavata) – A Case Report

GTSR De Silva# and ERHSS Ediriweera

Institute of Indigenous Medicine, University of Colombo, Rajagiriya

#ruwanthikadesilva90@gmail.com

Amavata is a disease caused by aggravation of Vata and Kapha Dosha. Amavata can be correlated with Rheumatoid arthritis, the commonest form of inflammatory arthritis with presentation of pain, joint swelling, and stiffness in small joints of the hands, feet and wrists. Purgation (Virechana Karma) is prescribed as a therapeutic measure in treatment of Amavata (Rheumatoid arthritis). Murva Dahaya Kashaya, Bimtambaru Sweda and Bimtambaru Patra Lepa are prescribed in treatment of Amavata in Ayurveda. So far, no known scientific study has been carried out to evaluate the effect of these treatments. Therefore, a 53-year-old women suffering from rheumatoid arthritis for 10 years was treated with Purgation (Virechana Karma) using Eranda Taila (castor oil), followed by oral administration of Murva Dahaya Kashaya and external application of Bimtambaru Sweda and Bimtambaru Patra Lepa. Severity of the symptoms recorded by specially prepared grading scale. Total duration of the treatment was 17 days. After Purgation (Virechana Karma), anorexia was relieved by 100%, discomfort at flexion of inter phalangeal joints by 33.3% and body ache by 25%. None of the other symptoms were reduced. After completion of entire treatment (Day 17), body ache, fever, pain and discomfort at flexion of inter phalangeal joints and fatigue were completely relived. General functional capacity enhanced and haematological parameters such as Erythrocyte Sedimentation Rate and C Reactive protein reached normal levels. According to American College of Rheumatology (2010) Criteria, Criterion Score of this patient was seven before treatment and three after completion of entire treatment. It is concluded that selected treatment regimen is a potentially beneficial therapy for Amavata (Rheumatoid arthritis) which needs to be explored.

Keywords: *Amavata, Virechana Karma, rheumatoid arthritis*

Optimization of Quantitative PCR for Amplification of Single Stranded DNA Library

AI Abeykoon^{1#}, KMN Kumarasinghe¹, NV Chandrasekharan² and PMTB Wickramasinghe³

¹*Faculty of Medicine, General Sir John Kotelawala Defence University*

²*Faculty of Science, University of Colombo*

³*Faculty of Medicine, University of Kelaniya*

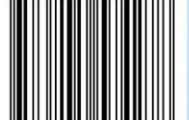
#isuruabeykoon@kdu.ac.lk

Aptamers are a class of oligonucleotide based synthetic antibodies showing remarkable advantages over its conventional proteinaceous counterpart in many aspects. Ability to generate aptamers for almost any target, their high thermal stability and relatively high resistance to both biological as well as chemical degradation, and low cost of production are the main features among many superior qualities which make aptamers preferred to traditional antibodies. The process of development of aptamers by systematic evolution of ligands by exponential enrichment (SELEX) is a universal process characterized by repetition of five main steps namely binding, partition, elution, amplification, and conditioning. The paper presents the optimization procedure for quantitative PCR based amplification approach used in the fourth stage (amplification) of this SELEX process. The template dilution of 1×10^{-5} μM showed good amplification under the thermocycling conditions of denaturation at 95°C for 10 sec, annealing at 63°C for 10 sec and extension at 72°C for 10 sec. Successful amplification of the library was confirmed by both the amplification plots and gel electrophoresis. In conclusion, the concentration of ssDNA was used as initial template served a significant factor in determining the success of amplification.

Keywords: *Aptamers, SELEX, quantitative PCR*



ISBN 978-624-5574-27-8



9 786245 574278