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## **BOOK OF ABSTRACTS**

***“Professional Development for Quality  
Enhancement of Healthcare: Beyond the COVID-19  
Pandemic”***

**24th – 26th July 2020**









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PRESENTATIONS**

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ABSTRACTS OF ORAL PRESENTATIONS

OP: 01

Practice and Socio-Demographic Determinants of Diabetes Self-Care among Patients with Type 2 Diabetes Mellitus

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**Introduction and Objectives:** Sri Lanka has the second highest prevalence of Diabetes Mellitus (DM) in Southeast Asia. Self-care is a vital adjunctive strategy to clinical management in preventing morbidity, disability and mortality associated with complications. The study aimed to describe diabetes self-care practices and socio-demographic factors associated with self-care, among patients attending the diabetes clinic in Teaching Hospital (TH) Karapitiya.

**Methods:** Cross-sectional study was conducted among systematically selected 456 patients with type 2 DM, attending diabetes clinic in TH Karapitiya. Self-care was assessed using culturally adopted Summary of Diabetes Self-Care Activities (SDSCA) tool. A pre-tested interviewer administered questionnaire was used to assess the socio-demographic factors.

**Results:** Mean age( $\bar{A}\pm$ SD) of the patients was 55.7 $\bar{A}\pm$ 7.6 years and 75.4% were females. Majority were rural residents, currently married, had no regular income and educated up to G.C.E O/L. Majority had diabetes for more than five years, two or more co-morbidities and were on oral medication. Good physical activity, healthy diet, footcare and medication compliance was adopted in 15.6%, 30%, 55.3% and 80.9% of patients respectively. Four percent were current smokers and, among patients on insulin, 50.7% had not self-monitored blood glucose (SMBG). Physical activity, healthy diet, footcare and medication compliance was significantly associated with gender ( $p=0.034$ ), ethnicity ( $p=0.001$ ), income ( $p=0.046$ ) and employment ( $p=0.016$ ).

**Conclusions:** Practice of diabetes self-care on physical activity, healthy diet and SMBG was poor among patients. Socio-economic disparities and culture affects level of self-care practices. Therefore, special focus should be given to reinforce self-care in routine DM management through multidisciplinary approach involving non-health sectors.

OP: 02

A Retrospective Comparative Study on the Outcomes of a Low Dose and High Dose Cyclophosphamide Regimen in the Management of Class III and IV Lupus Nephritis in Sri Lanka

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**Introduction:** Steroids and cyclophosphamide are standard induction-therapy in aggressive lupus nephritis (LN). Following the EuroLupus trial, a low-dose cyclophosphamide (LD-CYC) induction protocol became favoured over high-dose cyclophosphamide (HD-CYC), previously used in NIH protocols, due to similar efficacy and lower toxicity. Concerns remain about the efficacy of this LD-CYC regimen in non-Caucasian populations. We conducted a single-centre retrospective study to compare treatment outcomes in Sri-Lankan patients with class III and IV lupus nephritis treated with LD-CYC or HD-CYC.

**Methods:** Patients with biopsy-proven class III or IV LN were recruited from the University Medical Unit, Colombo. HD-CYC group was defined as having received  $\geq 6$  doses of 0.5-1g/m<sup>2</sup> CYC followed by quarterly doses. The LD-CYC group was defined as having received six doses of 500mg CYC at two-weekly intervals. Data was collected retrospectively from medical records and via interview. The primary outcome of treatment failure was defined as persistence of nephrotic range proteinuria or renal impairment at six months.

**Results:** Sixty-six patients were recruited (HD-CYC 35, LD-CYC 31). HD-CYC had received treatment between 2000 and 2013; LD-CYC group from 2013 onwards. Demographic data and prevalence of nephrotic syndrome and renal impairment were similar at commencement of treatment. Rates of treatment failure (LD-CYC 29% [95%CI 14-48]; HD-CYC 20% [95%CI 8-37]) and complete/partial remission (HD-CYC 82% [95%CI 66-93%], LD-CYC 74% [95%CI 54-88]) were similar ( $P>0.05$ ). There was no difference between rates of significant adverse effects.

**Conclusion:** This study suggests that LD-CYC and HD-CYC induction protocols have similar outcomes in Sri-Lankan patients with aggressive lupus nephritis.

#### OP: 03

**Clinico-Epidemiology of *Hypnale zara* (Hump-Nosed Viper) Envenoming in Sri Lanka**  
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**Introduction and Objectives:** Hump-nosed pit vipers of the genus *Hypnale* are the commonest cause of venomous snakebites in Sri Lanka which is 22-77%. *H. hypnale*, *H. zara* and *H. nepa* are three species of the genus. The objective of this study was to describe clinic-epidemiology of *H. zara* bites.

**Methods:** An observational clinical study was conducted for patients admitted with hump-nosed pit viper bites to Teaching Hospital, Ratnapura. Data collection was done from June 2015 to January 2020 using an interviewer-administered questionnaire.

**Results:** All hump-nosed viper bites were 630 (35%) of which 480 (76%) were proven cases (with specimen) and 150 (24%) were probable cases (no specimen). Of proven cases, 362 (57%) were bitten by *H. hypnale*, 105 (17%) by *H. zara* and 13 (2%) by *H. nepa*. Of *H. zara* bites, 65 (62%) were males and 40 (38%) were females. Their mean age was 43.1 yr. Most bites occurred on the lower limbs (71; 68%) in daytime (69;66%) in home gardens (45;43%). Local envenomings were 100 (95%) and dry bites were 5 (5%). Local effects were pain and swelling (each 100; 95%), bleeding (20;19%), bruising (11;10%), lymphadenopathy (10; 9%), necrosis (9;9%) and blistering (8;8%). There were 23 (22%) patients with non-specific features. Five (5%) patients showed systemic effects including acute kidney injury (3; 3%), microangiopathic haemolysis (2;2%) and each one (1%) had coagulopathy, thrombotic microangiopathy and Prinzmetal's angina. Eosinophilia was the significant laboratory finding

(26;25%) Recovered patients were 101 (96%) and 4 (4%) were lost to follow up.

**Conclusions:** *H. zara* bites cause mostly local envenoming and few get systemic effects.

#### OP: 04

**Use of Antibiotics among Office Workers in a Private Company**  
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**Introduction and Objectives:** Inappropriate use of antibiotics is a common problem and can pave way to emergence of antibiotic resistance and treatment failure. This study aimed to describe use of antibiotics among office workers of a private company.

**Methods:** A descriptive cross-sectional study was conducted among office workers of a private company. A sample of 105 office workers were randomly selected and assessed using a self-administered questionnaire with multiple choices including knowledge and practice towards the use of antibiotics. A score was given to the knowledge section, and a cut-off was decided for adequate knowledge based on expert opinion. The practice of using antibiotics without medical advice was considered as irrational use.

**Results:** The prevalence of irrational use of antibiotics was 72.6% (n=76) and was significantly high among subjects <28years (p=.003). Commonest mode of acquiring antibiotics was from previously stored drugs at home (43.4%, n=33). Amoxicillin (82.9%), Co-amoxiclav (31.6%) and erythromycin (31.6%) were commonly misused. Cold (57.9%), fever (48.9%) and cough (39.5%) were the common conditions where people tend to use antibiotics irrationally. There was no difference observed in the knowledge between irrational and rational users in total study sample. Poor knowledge was not associated with the sex of the study subjects (p=.948), however, was positively associated with age <28 years (p=.008).

**Conclusion:** Irrational use of antibiotics was common among office workers. Younger subjects

(<28 years) had poor knowledge and practice in using antibiotics. Education programmes targeting these literate, young workers on correct antibiotic usage practices will be beneficial in efforts to reduce their irrational usage.

#### OP: 05

##### EEG Patterns during Mindfulness Meditation

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**Introduction and Objectives:** Mindfulness (“sati”) is the attitude and practice of bare attention in a purely receptive state of mind. Electroencephalography (EEG) is widely used to analyze electrical changes of the brain during meditation. However, there is no published literature assessing the activity of brain using EEG among forest-dwelling monks. The objective of this study was to identify EEG patterns of forest-monastery based Buddhist monks during a mindfulness meditation session.

**Methods:** An EEG recording was performed on eighteen experienced Buddhist monks who engaged in a ‘Vipassana’ (insight) mindfulness meditation session for forty minutes. Participant Buddhist monks were recruited from Meethirigala Nissarana Vanaya, a monastery in the strict forest tradition. Neurovirtual Brain-Wave III EEG unit was used to record EEGs. Standardized low-resolution brain electromagnetic tomography (sLORETA) was used for analysis.

**Results:** The mean participant age was 41 years (SD 17.5); average meditation years was 6.4. The paired t-test revealed significantly high theta ( $p=0.046$ ) and gamma 1 ( $p=0.037$ ) power at the end (40th minute) compared to the beginning (1st minute) of the meditation session. The theta and gamma power augmentation were observed at frontal and prefrontal brain regions and the best matched area was Brodmann area (BA) 9.

**Conclusions:** Study shows a significant increase in theta and gamma power during mindfulness meditation. Theta and gamma are known to associate with cognitive control, relaxation and heightened awareness. BA 9 is known to associate with sustained attention and working memory.

Therefore, cultivation of mindfulness practice may help develop an awakened mind with attentive calmness.

#### OP: 06

##### Efficacy and Safety of Oral Hydroxyurea in Patients with Transfusion Dependent $\beta$ Thalasassaemia: a Randomized Double-Blind Placebo-Controlled Clinical Trial

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**Introduction and Objectives:** Patients with  $\beta$ -thalassaemia require blood transfusions and iron chelation for life. Hydroxyurea is a licenced medication for sickle cell disease but its usefulness in transfusion dependent  $\beta$ -thalassaemia is unclear. Here, we aim to assess the efficacy and safety of oral hydroxyurea in patients with transfusion dependent  $\beta$ -thalassaemia.

**Methods:** A phase III randomized double-blind placebo-controlled clinical trial was conducted at Thalassaemia Unit of Colombo North Teaching Hospital in 2019. Forty-one patients with transfusion dependent  $\beta$ -thalassaemia were randomized into hydroxyurea (10-20mg/kg/day) or placebo (pharmaceutically inert capsule identical to hydroxyurea) groups. Transfused blood volume, pre-transfusion haemoglobin, haemoglobin F level and side effects were monitored monthly during 6-month treatment and 6-month follow-up periods. Adverse events were assessed by trained medical officers. The study was approved by ethics committee of University of Kelaniya and registered in Sri Lanka Clinical Trials Registry (SLCTR/2018/024).

**Results:** Of the 41 (hydroxyurea-20; placebo-21) patients, three discontinued treatment due to thrombocytopenia (hydroxyurea-2) and rash (placebo-1). Baseline characteristics of two groups were similar. Mean pre-transfusion haemoglobin ( $8.52 \pm 0.57$  vs  $8.38 \pm 0.55$ ,  $p=0.45$ ) and haemoglobin F levels ( $4.3 \pm 7.1\%$  vs  $3.1 \pm 1.9\%$ ,  $p=0.48$ ) were higher in hydroxyurea group compared to placebo. Also, transfused blood volume was lower in hydroxyurea group ( $102 \pm 24$ ml/kg vs  $111 \pm 27$ ml/kg,  $p=0.3$ ). However, none were statistically significant. Based

on elevation of haemoglobin F (>1.5% from baseline), we identified 6/18 patients as hydroxyurea responders. Hydroxyurea responders required significantly lower blood volume (87±13ml/kg) compared to non-responders (110±25ml/kg, p=0.05) and placebo group (111±27ml/kg, p<0.05) while maintaining higher pre-transfusion haemoglobin level (8.6±0.5 vs 8.4±0.5 and 8.3±0.5). No serious side effects were reported.

**Conclusions:** One-third of patients with transfusion dependent  $\beta$ -thalassaemia responded to hydroxyurea treatment requiring 20% less blood compared to controls. No serious side effects were reported following hydroxyurea treatment.

#### OP: 07

##### **Duration before Hospitalization, Hospital Stay and the Clinical Course of COVID-19 Patients in Sri Lanka: Evidence from First 100 Patients Following Discharge or Death**

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**Introduction and Objectives:** During the COVID-19 pandemic, population-specific evidence on the clinical course of the disease is of paramount importance for health sector preparedness and response. This study aimed to estimate the duration of the clinical course of COVID-19 patients in Sri Lanka.

**Methods:** In this cross-sectional study, secondary data from bed head tickets of 100 confirmed COVID-19 patients (either discharged or dead) admitted to three designated COVID-19 treating

hospitals in Sri Lanka were analysed retrospectively. Duration of the clinical course was calculated from the onset of first clinical symptom (or the laboratory confirmation of COVID-19 in asymptomatic patients) until discharge from the hospital (or death).

**Results:** There were 94 discharges and six deaths. The majority was males (65.0%) and the mean age was 40.7 (SD=17.7) years. The mean duration of clinical course before admission to hospital was 3.7 (SD=3.1) days while the median was 3.0 (IQR=1.0-5.0) days. The mean duration of hospital stay was 17.1 (SD=5.5) days with a median of 18.0 (IQR=14.0-20.0) days. The total clinical course was depicted by a mean duration of 19.8 (SD=6.1) days and a median of 19.0 (IQR=17.0-23.0) days.

**Conclusions:** Early admission to hospital was noted within four days of the first symptom, yet the hospital stay lasted on average for 17 days, highlighting almost three weeks duration of the clinical course, which is much longer compared to other countries and could be due to the admission and containment policy practised in Sri Lanka.

#### OP: 08

##### **Impact of COVID-19 on Postgraduate Surgical Training - a Global Perspective**

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**Introduction and Objectives:** COVID-19 pandemic has affected all aspects of modern human life, across all the fields globally. The situation has lasted over two months with uncertainty about future. With the onset of the pandemic reduced case load in Sri Lanka, postgraduate surgical training has apparently been negatively affected. Assessment of the global situation was the objective of this literature review.

**Methods:** An English language PubMed search with Medical Subject Headings (MeSH) terms COVID-19, postgraduate, resident, surgery, and training in relevant combinations yielded 34 papers. After a survey ten relevant papers were chosen. Guidelines and situation summaries published by leading surgical colleges and training institutes globally were directly accessed through relevant websites.

**Results:** The impact of COVID-19 on surgical training varies regionally in parallel with COVID-19 burden in the population. In worst affected

countries training programmes have been postponed. Trainees in almost all the surgical specialties get reduced exposure in practice. This is due to the general measure of limiting care for urgent clinical problems. In trauma related specialties reduced incidence of events with ongoing physical distancing measures have led to a smaller number of acute presentations. Rosters with reduced duty hours for trainees has further reduced time involved in clinical care. All these negatively affect surgical training. Despite these, web based, and simulation based educational activities have emerged to improve training.

**Conclusions:** Globally COVID-19 has reduced postgraduate surgical trainees' clinical exposure and this might continue into foreseeable future. Online educational sessions focusing on knowledge has improved amidst the crisis.

#### OP: 09

##### **Training of Medical Officers in Peripheral Medical Clinics to Screen for Diabetic Retinopathy using Direct Ophthalmoscopy**

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**Introduction and Objectives:** Early screening for diabetic retinopathy prevents blindness but is a challenge as the ophthalmology service is limited to tertiary care hospitals. The objective of this study was to seek the feasibility of developing, a system to improve the accessibility in the primary and secondary health care institutions and a referral network.

**Methods:** 20 medical officers from each district were invited to participate in one of 25 programs following a successful pilot project done in the Western Province. A half day program of lectures and hands on training of direct ophthalmoscopy, was followed by a small group training with the regional ophthalmologist. Trained medical officers were given necessary equipment and stationery for recording and referring positive cases to the ophthalmologist. A random sample from screening clinics were reexamined by an ophthalmologist and the findings were compared.

**Results:** Of the 429 institutions invited for the recruitment program, 333 participated in the first

phase. 172 medical officers started further training and 119 started screening clinics. 53 sent records and 17 clinics were visited by ophthalmologists. Comparison of findings in 210 patients revealed a sensitivity, specificity, and Negative predictive value of 70%,77%, and 90% respectively for detection of any DR and 75%,69% and 97% for detection of any macular sign/s. All positive cases had been referred.

**Conclusions:** Medical officers caring for diabetic patients in the peripheral hospitals are a feasible option for task sharing in diabetic retinopathy screening

#### OP: 10

##### **Online Clinical Cased Based Discussions as a Novel Education Tool**

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**Introduction and Objectives:** Clinical Case-Based Discussions (CBDs) are used to teach clinical decision-making and clinical reasoning. CBD encourage self-reflection and allows integration of knowledge and practice. In response to COVID-19 pandemic, online CBD sessions were commenced simulating traditional ward classes. The purpose of this evaluation was to elucidate experiences of teachers and students on online CBD as an educational tool.

**Methods:** Online group-wise (45 students per group), CBDs were conducted for final year undergraduates by 5 clinical departments; Medicine, Surgery, Pediatrics, Gynecology and Obstetrics and Psychiatry. Sessions were conducted via Zoom. Experiences on CBDs were obtained via online open-ended questionnaire from clinicians and students after conducting 5-7 CBDs from each discipline. The main themes were identified for each question.

**Results:** 53 students (out of 179) and 7 (out of 10) clinicians responded. Experiences of clinicians and students are contrasting. Majority of students experienced online CBDs simulating to ward

classes, felt comfortable, friendly and interactive (“Case based discussions are amazing”). However, the experiences of the clinicians on CBDs were mixed, possessing both positives and negatives with discrete challenges compared to the traditional ward classes. Although online CBDs simulates ward classes, student interactions are limited, non-verbal expressions of students are invisible, and liveliness of ward classes being absent. (“my teaching is vanished in thin air”) and opinion that online CBDs cannot be replaced with traditional ward classes.

**Conclusions:** With contrasting experiences of clinicians and students, comprehend the importance of getting feedback from all stakeholders when introducing novel approaches. Online CBDs would be a temporary measure for traditional ward classes during the COVID-19 pandemic.

#### OP: 11

##### Graduate Perceptions on Teaching of Clinical Relevance in Different Components of the Colombo MBBS Curriculum

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**Introduction and Objectives:** The focus on clinical relevance during medical curricula is essential for future practice, as well as for deep learning and enhanced retention. The MBBS curriculum in Faculty of Medicine, University of Colombo (UCFM) is structured as ‘Streams’ i.e. Basic Sciences (BScS), Applied Sciences (AScS), Clinical Sciences (CScS), Behavioral Sciences (BSS) and Community Streams (CS). This study aimed to determine the focus on clinical relevance in different streams of this curriculum.

**Methods:** A survey was conducted in 2020 among recent UCFM medical graduates. Their comments on the strengths and weaknesses of each stream, and ratings on how different streams taught clinical relevance, were collected through anonymised self-administered questionnaires. Comments related to clinical relevance were thematically analyzed.

**Results:** Questionnaire response rate was 100% (199/199). Although students assessed the clinical relevance shown in basic sciences favorably with Physiology rated highest (76.4%) followed by Anatomy (62.3%) and Biochemistry (52.3%), comments suggest that many students failed to

appreciate this at that time. While applied sciences were viewed favorably due to its integrated module system, more input on patient management was preferred. Clinical sciences received very favorable comments on amount of clinical material used. Students found behavioural sciences essential to function as a good doctor, especially on patient communication.

**Conclusions:** The findings of this study suggest that integrated body-system based teaching and focus on outcomes such as clinical decision making and communication are useful strategies for highlighting clinical relevance. Early clinical exposure and teaching based on holistic care models may further enhance the focus on clinical relevance.

#### OP: 12

##### Reconstruction of Metabolic Pathways for the *Setaria digitata* Whole Genome

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**Introduction and Objectives:** *Setaria digitata* is a *Wolbachia*-free filarial parasite that resides in the abdominal cavity of ungulates. It can cause cerebrospinal nematodiasis (CNS) in unnatural hosts such as sheep, goats, which causes a serious threat to livestock farming. Furthermore, *S. digitata* can also infect humans causing several conditions showing a gradual adaption to humans.

**Methods:** Despite, to date, complete metabolic pathway reconstructions of *S. digitata* has not been undertaken and therefore, in this study the latter analyses were carried out using BLAST2GO software.

**Results:** Metabolic pathway analysis based on Kyoto Encyclopedia of Genes and Genomes (KEGG) database identified 111 enzymes found in total of 246 contigs that involve in 95 metabolic pathways,

in which the most over-represented pathways are Biosynthesis of antibiotics, Phosphatidylinositol signaling system and Purine metabolism. Since *S. digitata* does not harbor *Wolbachia* endosymbiont, it was theorized that the *S. digitata* genome must encode genes to carry out haem, riboflavin and nucleotides pathways, otherwise encoded by *Wolbachia* genome, potentially through lateral transfer of *Wolbachia* to an ancestor of *S. digitata*. Here, KEGG analysis identified 16 enzyme coding genes involved in nucleotide biosynthesis and one enzyme involved in riboflavin biosynthesis pathway. Although studies have revealed that FAD and glutathione pathways are complete in all nematode genomes, the genes encoding FAD and glutathione pathways were not found in the *S. digitata*. Moreover, complete nucleotide synthesis pathway and haem synthesis pathway were not found.

**Conclusion:** This suggests that *S. digitata* may have evolved its own sequences to encode those biosynthetic pathways and hence calling for investigations to undertake characterization of genes involved in these pathways.

#### OP: 13

##### Are They Ready to Handle Anaphylaxis?: a Study among Pre-Intern Medical Graduates of Three Universities in Sri Lanka

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**Objectives:** Early recognition and appropriate management of anaphylaxis saves lives. We assessed knowledge and perceptions regarding diagnosis and management of anaphylaxis among pre-interns who would soon become first-contact doctors.

**Methods:** This cross-sectional study included pre-interns who graduated in 2019 from three Sri Lankan universities with different undergraduate curricula. Consecutive sampling was done. Data were collected within 5-months of passing final-MBBS examination (average 3.7 months), using a validated self-administered questionnaire.

**Results:** 392 participated (response rate:88.5%). 16.6% identified all stated anaphylaxis triggers.

Only 4.6% correctly diagnosed all ten case-scenarios given. 98% correctly identified 1:1000 adrenaline as first-line treatment. 97.7% selected intramuscular route. 9.7% would use intravenous route if access was available. Only 78.6% and 54.8% knew correct adult and paediatric doses of adrenaline, respectively. 5.6% and 4.6% stated adrenaline is contraindicated in IHD and tachycardia, respectively. 22.7% were incorrect on positioning of patient. Only 49.2% agreed follow-up is needed. Mean scores for case diagnosis and anaphylaxis management were 7.4/10(SD=1.5) and 16.9/20(SD=2.1), respectively. Proportions having self-confidence in diagnosing and managing anaphylaxis, were 80.2% and 62%, respectively. There was positive correlation between knowledge scores and self-confidence (diagnosis:  $r_{pb}=0.111$ ,  $p=0.029$ ; management:  $r_{pb}=0.157$ ,  $p=0.002$ ). On regression analysis, final-MBBS results and university were independent predictors of diagnosis score (both:  $p<0.001$ ) and management score (results:  $p=0.053$ ; university:  $p<0.001$ ). Scores were not associated with gender or personal/family history of allergy. Self-confidence was higher in University-2 (diagnosis:  $B=2.278$ ,  $p=0.006$ ; management:  $B=2.894$ ,  $p<0.001$ ) and among men (management:  $B=1.946$ ,  $p=0.007$ ).

**Conclusions:** Knowledge, perception and self-confidence regarding diagnosis and management of anaphylaxis were sub-optimal among study participants. There were significant differences based on university, final-MBBS results and gender. Self-confidence positively correlated with knowledge.

#### OP: 14

##### Assessment of Plate Waste in Base Hospital, Warakapola

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**Introduction and Objectives:** All meals are provided free of charge to inpatient patients in state hospitals of Sri Lanka. Plate waste refers to served food that remains uneaten by patients. Higher plate waste could increase financial costs and compromise patients' nutrition. The study aimed to assess the plate waste in Base Hospital Warakapola.

**Methods:** Number of plates ordered was obtained from desk review of diet ordering book and kitchen records. A check list was used to assess the number of food plates not consumed by patients. Patients'

factors affecting the plate waste were evaluated with an interviewer administered questionnaire.

**Results:** The plate waste in this hospital in a randomly selected month in 2019 was 24.9%. Patients expectation for all three meals, two meals and one meal per day from the hospital were 12%, 83% and 5% respectively. But when estimating the requirement of food, it was assumed that 100% needed all three meals. Patients' requirement of hospital food was checked once only during admission, but 93.5% patients preferred if requirements were asked each day. Menu and the presentation of portions were found to be poorly appealing by 49.5% patients. Patients were unaware of the menu of given meal until it was served. Depending on the menu some chose not to consume. Tea and soup were served with the main meals as an attempt to save time. Dinner was served too early between 4.00pm-5.00pm.

**Conclusion:** Erroneous estimations, poor timing of servings and poor responsiveness to patients' factors had contributed to increase plate waste in the hospital.

#### OP: 15

##### Viability of the Amniotic Membrane in Several Solutions

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**Introduction and Objectives:** The Human Amniotic Membrane (HAM) is principally composed of structural collagen, Extracellular matrix, biologically active cells and large number of important regenerative molecules. It is embraced as a natural wound dressing in Ophthalmology, burnt and chronic wounds. Since the viability of the HAM is low the study aims to identify a preservative solution to ensure the continuous supply of HAMs.

**Methods:** An observational study was conducted. After obtaining placenta from the Cesarean sections the Amnion was bluntly dissected from the chorion. It was washed thoroughly. A piece of Amnion was fixed with Formaldehyde solution immediately to observe the normal morphology of

HAM. Equal pieces of HAM were stored in NS, Ringer Lactate solution (RLS), 30% Glycerol solution (GS) and Histidine –Tryptophan Ketoglutarate solution (HTKS). 24 hourly a tissue sample was obtained from each solution. 2 slide preparations were done with H&E and PAS staining. Cell viability (CV) and Basement Membrane viability (BMV) were microscopically examined for Normal Morphology (NM), Degenerative Changes (DC) and Complete Loss (CL).

**Results:** At Day 07, NM of cells in NS, RLS, GS and HTKS was retained for 10%, 30%, 50%, and 90% respectively and NM of Basement membrane was retained for 30% in NS, RLS, and GS. In HTKS it was 20%.

**Conclusion:** RLS is not suitable to be used as a preservative for HAM. In NS it could be preserved for 2days. The GS and HTKS preserved HAM could be used within 7 days for wound applications.

#### OP: 16

##### Surgery for Insulinomas – a Single Unit Experience

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**Introduction and Objectives:** Insulinomas, the commonest cause of endogenous hypoglycaemia are rare functional pancreatic neuroendocrine tumours (PNET). Their definitive treatment is by parenchyma sparing excision. The surgical procedure is largely determined by tumour location warranting preoperative localization, often a challenge. This study outlines the management of insulinomas in a tertiary hepato-pancreatico-biliary (HPB) surgical unit.

**Methods:** A retrospective analysis of prospectively collected data was done of patients with insulinomas who had surgery at a single HPB unit from 2012-20.

**Results:** A total of 6 patients including 2 with MEN-1 syndrome were included. The mean age was 38.8 years with a male: female ratio of 1:1. Presentation with hypoglycaemic and neuro-glycopenic symptoms was early (mean 5.6 months) in 3/6 and late (mean 11.6 years) in 3/6 patients. Preoperative tumour localization was done using CT in 66.6% (4/6) and selective arterial calcium stimulation (SACS) test in 33.3% (2/6). Intra-operative ultrasonographic (IOUS) localisation was done in

33.3% (2/6). Procedures performed included enucleation (2/6), central pancreatectomy (1/6), distal pancreatectomy (1/6), spleen sparing distal pancreatectomy (1/6) and subtotal pancreatectomy (1/6). Morbidity included grade B (1/6) and grade C (1/6) pancreatic fistulae (POPF) and hyperglycaemia 33.3% (2/6). All tumours were histopathologically benign with no disease recurrence to date. The two patients with MEN 1 additionally underwent parathyroidectomies.

**Conclusion:** Cross-sectional imaging was key to pre-operative localization of insulinomas but had to be complemented by invasive methods such as SACS and IOUS. Variability in tumour location necessitated versatility in surgical strategy to preserve parenchyma with good outcome. POPF was a major cause of morbidity.

#### OP: 17

**Upper Limb Vascular Injuries, a Unique Problem. A Single Unit Experience in a Tertiary Care Centre**  
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**Introduction:** Upper limb vascular injury (ULVI) is a common problem which results in loss of limb, life or significant disability if not properly managed. This is a prospective study of ULVI presenting to a single unit at the National hospital of Sri Lanka Colombo.

**Methods:** Study was done from October 2019 to February 2020. Details regarding demographics, cause, ischemic time (IT), type of injury, surgical procedure and outcome were collected. Patients not suitable for revascularization and incomplete data (6 patients) were excluded.

**Results:** There were 47 ULVI and 41 patients were included. Mean age was 36.2 years (2-81). 32 (78%) were males. mean IT was 9.4 hours (3-26). Cuts (36%/n-15) and fractures (34 %/n-14) were the most common cause followed by iatrogenic (22%/n-9) injuries. Forearm vessels were commonly injured (49%/n-20) followed by brachial artery (41%/n-17). 16 (39%) arteries were transected and 9 (22 %) were in spasm and 7 (17%) had contusion. 74% underwent revascularization. One brachial artery was ligated to control bleeding. Forearm vascular injuries were managed with plastic surgical team. There was no secondary amputation. One patient died due to myocardial

infarction. Therefore, the limb salvage rate was 97.6%.

**Conclusion:** Mean IT of 9.4 hours is more than the "golden time" time of 6 hours. This study shows that such limbs can be salvaged provided it is viable and not mangled. This delay can be minimised and the functional outcome can be improved of by having established multi-disciplinary team at the trauma centre.

#### OP: 18

**A Seasonal Killer; Variability of the Incidence of Necrotizing Fasciitis with the Weather Pattern**  
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**Introduction and Objectives:** Necrotizing fasciitis is associated with significant mortality, morbidity including major limb amputation, prolonged hospital stay and increased cost owing to prolong period of antibiotics and frequent debridement. Moreover, being a rural and agriculture-based society, loss of work force is a major concern in Mahiyangana as the significant proportion of patients are farmers and laborers. Even though, there are well recognized host related risk factors such as multiple comorbidities, immunosuppression and trauma, evidence for the effects of environmental factors such as climatic change are lacking for this condition. The objective of this descriptive study was to determine an association between the incidence of necrotizing fasciitis and the weather pattern.

**Method:** A retrospective analysis was performed from January 2018 to March 2020. All patients admitted with necrotizing fasciitis to surgical unit, BH Mahiyangana were analyzed. The disease following trauma and surgery were excluded. Monthly numbers of admissions were compared with the monthly average rainfall over the respective period.

**Results:** 231 patients were included in the study. Pearson's correlation coefficient was calculated as 0.76 which suggested a moderate to high correlation between number of admissions with necrotizing fasciitis and average rainfall.

**Conclusions:** An association is observed between the average rain fall and the number of admissions with the necrotizing fasciitis. Future studies aim to determine the causative factors for the demonstrated association will be of great value since the use of preventive measures is effective than cure for this condition.

#### OP: 19

##### Outcome of Open Live Donor Nephrectomies in 258 Cases

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**Introduction and Objectives:** The open and laparoscopic surgeries are currently available options for Live Donor Nephrectomy (LDN). Laparoscopic LDN is becoming the standard practice in the world. But in Sri Lanka, open surgery is frequently done. This study reports the outcome of 258 open LDN done by a single surgeon.

**Methods:** Consecutive open LDN were included. Patient demography, pre and post-operative serum creatinine (SCr), side of LDN, complications were recorded. Incomplete records and patients lost to follow up were excluded.

**Results:** 258 patients were included. 71.4% were males. Mean age was 38 years (23-63). 68.6% underwent left LDN. In a sub-group analysis, mean preoperative SCr and creatinine clearance were 0.90 mg/dl (0.48-1.65) and 96.5 ml/min (86-130) respectively. Three (1.16%) male patients (two right and one left LDN (2.5%vs0.57%)) developed renal bed hematoma needing surgical evacuation. But male gender and right LDN association was not statistically significant (P> 0.5). One patient had pneumothorax requiring intercostal tube insertion. Mean post-operative SCr values at 1week, 1-2, 2-4,4-12, 12-24, 24-36, 36-52 weeks and after 1 year were 1.37,1.25, 1.28,1.35, 1.21,1.09,1.07 and1.00 mg/dl in all patients. This indicates that SCr returns to normal value at approximately 12-24weeks after the LDN.

**Conclusions:** The incidence of renal bed hematoma in this series is 1.16%. Even though all patients who developed haematoma were males and 2 underwent right LDN, these factors were not statistically significant probably due to small numbers. But this additional risk should be explained preoperatively. SCr returns to normal value after 12-24 weeks.

#### OP: 20

##### Endoscopic Ultrasound-Guided Transmural Drainage of Pancreatic Fluid Collections. A Study to Analyze its Efficacy and Complications

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**Introduction:** Pancreatic fluid collections (PFC) are a complication of acute and chronic pancreatitis. PFC can be symptomatic and therefore need to be drained to relieve symptoms. Traditionally surgery was the preferred mode of drainage. In the recent decade endoscopic ultrasound (EUS) guided transmural drainage is being considered as minimally invasive, safe and equally efficacious in draining such symptomatic collections. This is the first such study carried out in Sri Lanka.

**Method:** A retrospective study was done of 29 patients who underwent EUS guided PFC drainage over a 24-month period at a tertiary care government and private hospital. Procedure was done under deep sedation and a Cysto-gastrostomy was created with a self-expandable metal stent placed under linear echoendoscope with or without fluoroscopy guidance.

**Results:** Age range was 9-76 years while 25/29 were male. The indications for the procedure were pain 15/29, obstructive jaundice 3/29, gastric outlet obstruction 8/29 and post pancreatic infected fluid collection 3/29. Average size of the PFC was 64mm (40-110mm). EUS-guided cysto-gastrostomy was successfully created in all patients. Patients were followed up for 4-6 weeks until the stent was removed 24/29 or new plastic stent placed 2/29. In two patients stent had fallen into stomach and one displaced extra lumenally. 1/29(0.03%) developed bleeding and 1/29(0.03) stent displacement extra lumenally which were both successfully managed endoscopically, while infection was seen in 1/29(0.03%) which needed antibiotics.

**Conclusion:** EUS guided transmural drainage of PFC or Cysto-gastrostomy is a successful and effective method with minimal complications.

#### OP: 21

##### Anatomical Variations of the Renal Vasculature and its Association with the Outcome of Live Donor Nephrectomies

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**Introduction:** Renal artery (RA) variations occur in 18 % to 21%. Variations determine the side selection and the outcome. This series reports the renal vascular anatomy (RVAS) variations encountered during live donor nephrectomies (LDN).

**Methods:** Consecutive LDN done by a single surgeon were included. Patients' demography, LDN side, RVAS variations and complications were recorded. The kidney with worse function and least number of RA were selected for LDN. The RVAS was also assessed during the surgery. Single RA and vein with hilar division was considered normal anatomy. Incomplete records were excluded.

**Results:** 159 were included with 103 (64.8%) males. Mean age was 38.2 years (23-63). 106 (66.7%) were left LDN. 136 (85.5%) had single RA of these 34 (21.4%) had early branching (EB). 23 (14.5%) had multiple RA (2 in 21 and 3 in 2). Therefore variations occurred in 35.8 %. In a sub group analysis of 123 renal veins, only 6 (6.8%) with single RA but 9 (25.7%) out of 35 with multiple arteries or EB arteries had multiple veins. This difference was significant (p=0.004). 11 (6.9%) had complications of whom 3 had haematoma. 2 of 3 hematoma patients had EB of RA (5.9% vs 0.8%) and underwent right LDN (3.8% vs 0.9% / p>0.05).

**Conclusions:** RA variations occur in 35.8 %. Multiple arteries and EB is associated with multiple veins. The complication rates in right LDN and in patients with EB appear to be high. However this was not statistically significant probably due to low numbers.

#### OP: 22

##### Screening for Future Metabolic and Cardiovascular Risks: a Missed Opportunity During Pregnancy

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**Introduction and Objectives:** With the global pandemic of metabolic and cardiovascular disease, future risk assessment has become a main strategy in disease prevention. In Sri Lankan public health system, a missed opportunity in this assessment was explored in order to early risk prediction.

**Methods:** All pregnant women with POA less than 12w who registered at field antenatal clinics in

Anuradhapura district from July to September, 2019 were included in this study as part of a population-based pregnancy cohort study in Rajarata (RaPCo). Anthropometric and clinical data were collected by trained investigators in 326 field clinics conducted for this purpose. Asia-Pacific thresholds were used for classifications as it gives more ethnic specific values than usual WHO values. Waist cut off was used in those who are less than 12 weeks of POA, a period which is assumed as normal to the usual body structure.

**Results:** Of the original cohort, 2818 women with mean age of 28.0y(SD 5.5) were eligible for this analysis. The mean BMI was 23.39(SD 4.8) and waist-hip ratio (WHR) was 0.83(SD 0.07). Prevalence of pre-obese, obese-I and obese-II classes were 16.1%(n=453), 32.6%(n=920), 1.8%(n=49). Based on WHR, 35.7% (n=1005) had substantially increased risk for metabolic complications while 781 (27.7%) were at average risk. Based on the waist circumference, 16.3% were having substantially increased risk. A statistically significant association with BMI was observed for diabetes mellitus, hypertension, thyroid disorders and hyperlipidemia. In addition, irregular menstruation and oligomenorrhea were also more common in pre-obese/obese group.

**Conclusion:** In this population, the prevalence of pre-obese/obese was 50.5%(95%CI48.6-52.3%) showing a substantial future risk for metabolic and cardiovascular diseases. Use of data from booking visits could be used for metabolic and cardiovascular risk prediction at early age as a cost-effective strategy.

#### OP: 23

##### Awareness and its Associates of Occupational Hazards and Safety Practices Among Medical Laboratory Technologists Working in Government Tertiary Care Health Institutions in Colombo District

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**Introduction and Objectives:** Medical laboratory technologists are at risk of numerous occupational hazards. Hence their awareness of occupational hazards and safety practices is of utmost importance. The present study was conducted to assess the level of awareness and its associates of occupational hazards and safety practices among

Medical Laboratory Technologists working in government tertiary care health institutions in Colombo district.

**Methods:** A census was carried out recruiting all the eligible medical laboratory technologists (n=358) currently employed during the data collection period in government tertiary care health institutions in Colombo district. A pretested self-administered questionnaire was used to collect data. Associates of the awareness level were determined using the odds ratio and the chi-square test placing the significance level at 0.05.

**Results:** Out of 358 Medical Laboratory Technologists, 326 responded giving a response rate of 91.1%. The majority of the respondents had satisfactory level awareness of occupational hazards and safety practices (57.4%, n=187). Association between the awareness level and the socio-demographic characteristics was not statistically significant ( $p>0.05$ ). The experience of the respondents at the current workplace revealed a statistically significant association with the awareness level. When the analysis was performed only among the respondents who had received any training on occupational safety, a statistically significant association was revealed between their awareness level and the number of training sessions they have participated in. Other occupation-related factors did not reveal significant associations with the awareness level.

**Conclusion:** The majority of the study participants had satisfactory level awareness of occupational hazards and safety practices.

#### OP: 24

##### Assessment of Direct Out of Pocket Expenditure of Tuberculosis Treatment in Intensive Phase in Kalutara District

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**Introduction and Objectives:** Tuberculosis (TB) is an ancient disease and remains to be a public health problem all over the world. One of the main targets of end TB strategy is financial risk protection to TB patients during treatment. Despite the free health service in Sri Lanka many households may incur high out of pocket expenditure (OOPE) towards TB treatment and accurate estimates are not available.

This study aimed to assess direct OOPE and find the association between direct OOPE and noncompliance to TB treatment in intensive phase.

**Methods:** A descriptive cross-sectional study was conducted with TB patients registered in District Tuberculosis Register Kalutara for period of six months. Entire study population was recruited for the study. An interviewer administered questionnaire was used to collect data.

**Results:** Study consisted of 252 patients (male;63.5%, female; 36.5%). Mean total non-medical expenses for one patient per day was 341.61 Sri Lanka Rupee (LKR). If patient attends daily for Directly Observed Treatment center, mean non-medical expenses for one patient for intensive phase was 20496.60 LKR. Mean total medical expenses for one patient for intensive phase was 1254.13 LKR. Total mean direct OOPE for one patient in intensive phase was 21750.73 LKR. There was no significant association between direct OOPE and noncompliance to TB treatment in intensive phase ( $\chi^2=1.0788$ ,  $p=0.299$ ).

**Conclusions:** The direct OOPE for TB treatment in intensive phase was high. Need to identify measures to reduce OOPE for TB treatment in intensive phase.

#### OP: 25

##### Prevalence and Correlates of Smoking, Alcohol Consumption and Illicit Substance Abuse in School Adolescents in Sri Lanka

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**Introduction and Objectives:** Adolescence is defined by the World Health Organization (WHO) as "the transition period from childhood to adulthood". Willingness to experiment and peer influence during this period create an environment of taking high risk decisions, such as substance abuse and smoking. The current analysis was conducted to estimate the prevalence of smoking, alcohol consumption and illicit substance abuse and their determinants on in-school adolescents

using data from the Global School-based Student Health Survey (GSHS), done in Sri Lanka, in 2016.

**Methods:** GSHS was a cross-sectional survey conducted among 3,650 students, aged 13-17 years, using a two-stage cluster sample design in all government schools in Sri Lanka. Weighted prevalence was calculated, and logistic regression analysis was conducted to determine the correlates.

**Results:** A total of 3263 students participated, giving an overall response rate of 89%. The prevalence of current alcohol, smoking, smokeless tobacco consumption and substance abuse, 30 days before the survey, was 3.4% (95% CI 2.6 - 4.3), 3.6% (95% CI 2.5-5.0), 2.3% (95% CI 1.5-3.7) and 2.7% (95% CI - 1.7-4.2%) respectively. Multivariate analysis using multiple logistic regression revealed that only the male sex and involvement in physical fighting were positively associated with all four substance categories assessed. Age category 16-17, parents' tobacco use and seeing actors drinking in TV increased the risk of alcohol consumption, smoking and smokeless tobacco.

**Conclusions:** Alcohol use, smoking, smokeless tobacco use and substance abuse by students remains a concern in Sri Lanka and implementing life skills-based interventions at schools is recommended.

#### OP: 26

##### Prevalence of Cardiovascular Conditions among First Trimester Pregnant Females in Anuradhapura District

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**Introduction and Objectives:** Cardiac diseases complicating pregnancy is second most common cause for maternal deaths in Sri Lanka. We evaluated the cardiac diseases in a cohort of pregnant women in Anuradhapura for a better estimation of disease burden of heart disease in Pregnancy.

**Methods:** For a large on-going cohort (RAPCO), we recruited first trimester pregnant women registered in field antenatal clinics of all 22 MOH areas of Anuradhapura district during July-September 2019. Cardiovascular health-oriented

history taking and examination done in all recruited participants and referred to 2D echocardiogram with a lower threshold.

**Results:** Total of 2895 pregnant females including 909(31.4%) primi mothers, 924(31.9%) in their second pregnancy and the rest (36.6%) were in para 3 or more were included. Mean age was 28.05 years (SD 5.494). Known heart diseases, chronic hypertension/PHI, rheumatic fever, dyslipidemia and stroke were reported by 17(0.6%), 93(3.2%), 8(0.3%), 20(0.7%) and 5(0.2%) participants. Chest pain, dyspnoea, syncope, palpitation, orthopnoea and paroxysmal nocturnal dyspnoea was reported by 60(2.1%), 96(3.3%), 44(1.5%), 53(1.8%), 28(1.0%), 15(0.5%) respectively while at least one murmur was detected among 136(4.7%) patients. 317 participants were subjected to 2D-ECHO which resulted in identification of 97(30.6%) trivial MR, 10(3.2%) IAS defects, 9(2.8%) stage II DD, 6(1.9%) Mild DD, 6(1.9%) Grade 1/2 MR, and 5(1.6%) Mild PHT. The finding included 1(0.3%) newly diagnosed dextrocardia in a woman in her third pregnancy.

**Conclusions:** The cardiac disease complicating pregnancy identified was significantly than the routinely reported data. Current screening for heart disease may require changes to increase the detection of these conditions.

#### OP: 27

##### Quality of Life in Elderly in Rural Sri Lanka: a Large Community-Based Cross-Sectional Study

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**Introduction and Objectives:** Sri Lanka has one of the fastest ageing populations in South Asia. However, community-based studies assessing the quality of life (QoL) in elderly are scarce. Hence, this study assessed the QoL among the elderly in a rural Sri Lankan setting.

**Methods:** This community-based, cross-sectional study was conducted among 3,652 participants aged 60-74 years in the Thalawa divisional secretariat area. Ten trained Ayurvedic health promotion officers collected data using validated 'Quality of Life Instrument for the Young Elderly in Sri Lanka', which provided scores for six domains of

QoL. All domain scores were transformed to present on a scale from 0-100.

**Results:** The response rate was 97.8%. (n=3,5673). The majority was females (n=2,130, 59.6%) and the mean age was 66.7 (SD=4.3) years. 75.8% (n=2,710) had at least one diagnosed chronic disease. The highest mean score of the QoL was reported for the functional domain (63.4, SD=16.9), whereas the physical domain had the lowest (52.9, SD=15.0). The mean scores (SD) for the spiritual, psychological, environmental and social domains were 61.3 (15.9), 60.0 (16.4), 59.5 (16.3) and 57.5 (13.1) respectively. Statistically significant higher mean scores were observed in males than in females for physical, psychological and social domains (p<0.001). Mean scores for all six domains were higher in elderly who did not have any diagnosed chronic disease than their counterparts (p<0.001).

**Conclusions:** This large community-based study has revealed that QoL in rural elderly is relatively high. Males and those who did not have chronic diseases were found to have higher QoL.

#### OP: 28

### Balance, Hand Grip Strength and Risk of Falling in Children with Visual Impairment

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**Introduction and Objectives:** Vision plays an important role in maintaining balance in human body. Lack of visual information could change the muscle properties causing a reduction in the hand grip strength. Impaired balance and handgrip strength may cause higher risk of falls. Objective of this study was to compare the balance, hand grip strength and risk of falling between children with visual impairments and sighted children.

**Methods:** A cross-sectional study was conducted in children with visual impairments (n=45, aged 11-18 years) from Deaf and Blind School, Rathmalana and sighted children (n=45, 11-18 years aged) from Moratuwa Maha Vidyalyaya. Balance subtest of Bruininks-Oseretsky Test (BOT)-2nd edition was used to assess balance. Jamar hand-held dynamometer was used to measure hand grip strength (unit-kg) and a validated questionnaire was used to assess risk of falling. Visual acuity was measured by using a Snellan chart.

**Results:** Visually impaired children (visual acuity-12/6-0) had significantly lower mean score of BOT-2 balance subtest (21.58±6.87) than sighted children (31.07±2.07-p<0.001). Significantly lower handgrip strength of both hands were noted in visually impaired children (13.63 ± 4.41 kg, 14.66 ± 5.85 kg) compared to the sighted children (24.23 ± 11.12 kg, 29.91 ± 8.71 kg in left and right hands respectively- p<0.001). Children with visual impairments had a significant higher risk of falling than sighted children (1.36±1.09 and 0.38±0.54 respectively, p<0.001).

**Conclusion:** Impaired balance, hand grip strength and increased risk of falling were observed in visually impaired children. Introducing balance and physical fitness training programs would be beneficial for children with visual impairments.

#### OP: 29

### Childhood Asthma and its Association with Selected Obstetric and Neonatal Factors among Children Aged 3 -10 Years in Tertiary Care Hospitals in Colombo District

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**Introduction and Objectives:** Childhood asthma is associated with significant morbidity and economic cost. This study aims to determine the proportion of childhood asthma and its association with selected obstetric and neonatal factors in children aged 3-10 years in tertiary care hospitals in Colombo district.

**Methods:** A Cross sectional analytical study was conducted on a consecutive sample of 266 children aged 3-10 presenting to pediatric clinics and wards of Colombo South Teaching Hospital, Kalubowila and Lady Ridgeway Hospital, Colombo, over a period of 6 months. Interviewer administered questionnaire was used to assess the socio-demographic, neonatal and obstetric factors related to asthma, its onset, severity and control. Chi square test and two sample t test were used to assess the significance and p value of < 0.05 was taken as significant.

**Results:** Of the 266 patients; equal sex distribution of 1:1 and a mean age of 5.99 were observed; 79 were diagnosed to have asthma (29.7%). Majority had the onset before 4 years of age (72.2%). A significant associations with childhood asthma and birth length ( $p=0.002$ ), gestational diabetes mellitus (GDM) ( $p=0.029$ ), diabetes mellitus (DM) exposure ( $p=0.04$ ), advanced maternal age ( $p=0.01$ ) maternal hypothyroidism ( $p=0.022$ ) and family history ( $p=0.000$ ) were noted. Though no significant association between, sex ( $p=0.747$ ), birth weight ( $p=0.218$ ), period of gestation at birth ( $p=0.704$ ), mode of delivery ( $p=0.407$ ) were observed.

**Conclusions:** Childhood asthma is associated with maternal GDM, DM exposure, hypothyroidism, advanced maternal age, family history of asthma and also the birth length of the child.

### OP: 30

#### In-Utero Exposure to Tsunami and Conflict and Adolescent Health in Sri Lanka

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**Introduction and Objectives:** The long-term consequences of in-utero exposure to a combined natural disaster and conflict are unknown.

**Methods:** Questionnaire, anthropometry and blood pressure data were collected from 110 adolescents aged 12-13 years in Sri Lanka whose mothers were pregnant during the Indian Ocean tsunami on 26 December 2004 in: Galle (tsunami); Kilinochi and Manmunai (conflict); Mullativu and Koralai Pattu (conflict-plus-tsunami); Akmeemana (control; minimally affected by either tsunami or war). Blood samples were collected and analysed for plasma glucose, insulin, cholesterol and cortisol concentrations. Statistical analyses included regression models adjusting for confounders, comparing to the control group.

**Results:** Adolescents born in the tsunami-affected regions and conflict-affected regions were heavier with increased body fat but no difference in height was seen. Adjusted BMI for age z-scores were 1.3 (95% confidence interval (CI) 0.4, 2.2), 1.0 (95% CI 0.2, 1.9) and 2.0 (95% CI 1.1, 2.9) for conflict, tsunami and conflict-plus-tsunami respectively. Greater skinfold thickness and higher diastolic blood pressure (conflict zone = 5.6 mmHg (95% CI 0.5,10.6); conflict-plus-tsunami = 6.7 mmHg (95% CI 1.5, 11.8)) were seen in adolescents born in the conflict zone. Head circumference and waist circumference showed no difference. Serum insulin, which was raised in those born in the conflict zone (4.5 mIU/L (95% CI 0.5, 8.4) but no other differences were seen in the blood results.

**Conclusions:** In-utero exposure to the Indian Ocean tsunami and to conflict were associated with increased BMI and body fat content in adolescents.

### OP: 31

#### Gender Difference in Accuracy Error in Bioelectrical Impedance Analysis Compared to Dual Energy X-Ray Absorptiometry in the Measurement of Body Composition Indices in Obese Children

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**Introduction and Objectives:** Since childhood obesity has become a serious public health concern in the developing countries, it is imperative to have valid, reliable and affordable tools to assess body composition. This study was conducted to determine the concordance between bioelectrical impedance analysis (BIA) and dual energy x-ray absorptiometry (DXA) in the assessment of body composition in obese children.

**Method:** Ninety seven children (57 boys) aged 5-15ys who had a BMI  $\geq$  85th percentile for age and gender based on the CDC 2000 growth charts were recruited. Fat mass (FM), percentage fat mass (% FM) and fat free mass (FFM) were measured using DXA and BIA. Agreement between the two methods was calculated using independent samples t-test, regression analysis and Bland-Altman plots.

**Results:** Significant differences were not observed between boys and girls in the age, weight, height,

BMI and body composition indices. The mean differences of body composition indices made by DXA and BIA were wider among boys compared to girls. Significant differences ( $P < 0.05$ ) were observed in the FM and the FFM measurements made by DXA and BIA only in boys indicating that the accuracy error with BIA is mainly confined to boys. A higher SEE was observed for FM, FFM and %FM among boys (3.56kg, 4.49kg and 5.46%) compared to girls (2.44kg, 3.72kg and 3.5%) between DXA and BIA. However, BA plots showed a concordance between measurements of FM, FFM and %FM made by DXA and BIA.

**Conclusions:** Although BIA can be considered a viable alternative for DXA for the measurement of body composition in obese children, the gender difference in BIA accuracy needs to be considered when interpreting results.

#### OP: 32

##### Differences in Serum Markers of Oxidative Stress in Well Controlled and Poorly Controlled Asthmatic Children in Sri Lanka

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**Introduction and Objectives:** Oxidative stress due to elevated pro-oxidants over anti-oxidants is thought to play a role in the pathophysiology of asthma. This study aims to assess the changes in oxidant markers (nitric oxide metabolites) and total antioxidant capacity (TAOC), in children with poorly and well-controlled asthma, in comparison to healthy controls

**Methods:** A prospective cross-sectional survey was carried out among children (5-15 years) presenting to the Professorial Paediatric Unit of Lady Ridgeway Hospital for Children. The serum concentrations of the oxidant markers and the TAOC were determined using the Griess test and the ABTS decolorization method respectively and the values were compared across three groups (20 poorly and 25 well controlled asthmatic children. 27 healthy controls)

**Results:** Significant differences in oxidant markers were observed between the three groups. Nitrate concentration was statistically significantly higher in poorly ( $p = 0.001$ ) and well controlled ( $p = 0.036$ )

asthmatics compared to healthy controls. Similarly, NO<sub>x</sub> concentration showed significantly higher levels in poorly ( $p < 0.001$ ) and well controlled ( $p = 0.049$ ) asthmatics compared to healthy controls. No significant difference in serum nitrate and NO<sub>x</sub> concentrations was observed between the two asthma groups. The TAOC were significantly lower in poorly controlled asthmatics as compared to well-controlled asthmatics ( $p = 0.003$ ) and healthy controls ( $p < 0.001$ ). There was no significant difference in the serum TAOC between healthy controls and well-controlled asthmatics ( $p = 0.496$ ).

**Conclusions:** The imbalance of oxidants and antioxidants in the serum may play a role in pathophysiology of asthma. The higher TAOC levels may contribute to better asthma control.

#### OP: 33

##### Association of Severe Asthma with Allergic Rhinoconjunctivitis and Eczema in a Cohort of Preschool Children of Anuradhapura District, Sri Lanka

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**Introduction and Objectives:** The global prevalence of severe asthma is 4.9%. However, data on severe asthma among Sri Lankan preschoolers and the association of severe asthma with allergic-rhinoconjunctivitis and eczema is scarce. Objective was to describe the association of severe asthma with eczema and allergic rhinoconjunctivitis among preschool children of Anuradhapura district.

**Methods:** A descriptive cross-sectional study was conducted using the validated International Study of Asthma and Allergy in Childhood (ISAAC) questionnaire at 36 preschools selected by multistage cluster sampling with probability proportionate size. Participants were categorized into 3 groups: current wheezers with allergic-rhinoconjunctivitis; current wheezers with eczema; current wheezers with allergic-rhinoconjunctivitis and eczema, according to the definitions recommended by ISAAC steering committee.

**Results:** The participants were 548 (51.7%) boys and 512 (48.3%) girls, aged 3-6-years. Severe asthma symptoms were reported in 76(7.1%;95%CI 5.7-8.8), of whom only 27(38.6%;95%CI 28.0-50.2) had been previously diagnosed. Allergic-rhinoconjunctivitis was reported in 123(9.9%;95%CI 7.3-10.8) while eczema was reported in 35(3.3%;95%CI 2.2-4.4) children with 83.7% developing the rash before four years of age. Passive smoking (OR 1.7;95%CI 0.9-3.1), cement floor (OR 0.4;95%CI 0.2-0.7), pet dogs (OR 2.3;95%CI 1.0-5.4) and frequent consumption of Skipjack tuna (OR 1.9;95%CI 1.1-3.3) were independent risk factors for severe asthma. Current wheeze with allergic-rhinoconjunctivitis was associated with developing severe asthma ( $p=0.001$ ). Severe asthma symptoms were present in 3 out of 6 current wheezers with eczema and allergic-rhinoconjunctivitis, although statistically not significant ( $p=0.16$ ). None of the current wheezers with eczema ( $n=7$ ) had severe asthma ( $p=0.2$ ).

**Conclusion:** Allergic-rhinoconjunctivitis in current wheezers increased the risk for severe asthma.

#### OP: 34

##### Early Pregnancy Mental Health Reflecting Health System Deficits and the Need for Psychosocial Support in Anuradhapura, Sri Lanka

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**Introduction and Objectives:** Effects of mental health has the greatest influence on fetal outcome when it occurs in early pregnancy. However, early pregnancy mental health is scarcely documented in Sri Lanka. Objectives were to explore the factors underlying high EPDS (Edinburg Postpartum Depression Scale) scores in first trimester pregnant women in Anuradhapura.

**Methods:** We used a mixed method approach. In the Rajarata Pregnancy cohort (RAPCO) which commenced in July to September 2019, 3233 pregnant women less than 12 weeks of gestation completed the EPDS. We conducted qualitative interviews in a subsample of 79 pregnant women with a positive EPDS score  $\geq 14$  and/or a positive scoring for presence of suicidal ideation to identify the existing symptoms of depression and the reasons for having a higher score during early pregnancy. Thematic analysis was done.

**Results:** Of the 79 mothers interviewed, only 2(2.5%) mothers fulfilled the criteria for moderate to severe depression. Pregnant women attributed the self-harm ideation/depressive symptoms mainly to nausea and vomiting 29.1%( $n=23$ ) followed by psychosocial issues due to unplanned pregnancy 16.4%( $n=13$ ), lack of household support 15.2%( $n=12$ ), financial problems 13%( $n=11$ ) and family conflicts 12%( $n=10$ ). Symptoms of anxiety was prominent than of depression and were diverse; previous miscarriage, past experience of disrespectful maternity care, fear of the fetus affected by genetical disorders, stressful working environment and unmarried pregnancies were identified as major determinants of anxiety. Most of the underlying factors were identified as preventable.

**Conclusion:** Mental health issues in early pregnancy are mostly due to causes which are preventable through health system strengthening and social support.

#### OP: 35

##### Translation and Validation of Abnormal Involuntary Movement Scale (AIMS) into Sinhala

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**Introduction and Objectives:** Tardive dyskinesia (TD) is a pattern of abnormal involuntary movements among patients on long-term antipsychotics. As there is no medication universally effective, prevention of TD is important. Non-medical clinicians are now involved in the follow-up of patients on antipsychotics in Sri Lanka; therefore, translation and validation of a screening tool in Sinhala, that can be administered by different mental health professionals, was deemed pertinent. Aim of the study was to translate and validate the Abnormal Involuntary Movement Scale (AIMS) into Sinhala.

**Methods:** Translation followed standard guidelines. The finalized Sinhala version was administered independently by five raters (two registrars in psychiatry, a medical officer, a

community psychiatry nurse (CPN) and a psychiatry social worker) on patients on antipsychotics for a minimum of one year. The gold standard diagnosis of TD was the Diagnostic and Statistical Manual (DSM)-5 criteria conducted by a consultant psychiatrist. Sensitivity, specificity, and Cohen's kappa values were calculated.

**Results:** Out of 137 patients, 53.3% were male. Mean age was 49 and average duration of antipsychotic treatment was 14 years. The percentage of patients diagnosed with TD using AIMS and DSM-5 were 33% and 34% respectively. Sensitivity and specificity of AIMS to detect TD were 67% and 83.4% respectively. The degree of agreement between AIMS and DSM-5 indicated moderate criterion validity (kappa= 0.5). For different raters, the kappa statistic ranged from 0.41 (CPN) to 0.63 (registrar), signifying modest reliability between raters.

**Conclusion:** This provides preliminary evidence for validity and reliability of AIMS in detecting TD, when administered by a range of mental health professionals. Given the clinical experience required and the subjectivity involved in diagnosing TD, the foregoing modest statistical indicators seem reasonable.

#### OP: 36

##### Association between Toxoplasmosis and Schizophrenia - Preliminary Findings of a Case Control Study

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**Introduction and Objectives:** *Toxoplasma gondii* is an intracellular protozoan parasite prevalent worldwide. Immune response against *T. gondii* leading to dysfunction of N-methyl-D-aspartate glutamate receptor is linked to development of schizophrenia. This study aims to determine any association between presence of *Toxoplasma* IgG/IgM antibodies and schizophrenia among selected group of Sri Lankan patients.

**Method:** Preliminary data from a prospective case control study in a sample of patients recruited from the University Psychiatry Unit, National Hospital Sri Lanka, between November 2019 and January 2020 is presented. Cases were patients diagnosed with schizophrenia presenting in an acute episode or in

remission. Controls were patients presenting with minor psychiatric conditions excluding mood or substance use disorders. Personal and clinical details, data regarding association with cats, consumption of undercooked meat, history of blood transfusions/organ transplantation were obtained by an interviewer administered questionnaire. Venous blood 2ml was collected and tested using *Toxoplasma* IgG/IgM Rapid Test® at the Department of Parasitology, Colombo.

**Results:** A total of 131 cases (37-acute, 94-remission) and 40 controls were enrolled. Ages ranged from 18-68 years among cases (acute: 19-65 years, mean=35.9; remission: 18-68 years, mean=40.6) and 15-57 years (mean=27.3) among controls. Males comprised 60% of cases and 25% of controls. Sero-prevalence of *Toxoplasma* IgG/IgM antibodies was significantly greater among patients with schizophrenia compared to controls (P=0.005), but had no association to its age of onset (<40 or ≥40 years; P>0.05). Having a cat in the neighbourhood was a significant risk factor (P=0.009).

**Conclusion:** These preliminary results show an association between toxoplasmosis and schizophrenia in this selected population.

#### OP: 37

##### Randomized Controlled Trial Investigating the Effectiveness of Cognitive Behaviour Group Therapy Compared to a Waitlist Control in the Treatment of University Students with Social Phobia

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**Introduction and Objectives:** Social phobia causes significant impairment in a person's personal and professional life. However, individually delivered cognitive behavioural therapy (CBT) is costly, limited by the number of trained therapists and not scalable to meet the need for such therapy in the population. In this context, cognitive behavioral

group therapy (CBGT) is the viable option. Objective was to determine the treatment effectiveness of CBGT as compared to a waitlist control of university students with social phobia.

**Method:** A single-blind randomized controlled trial consisting of an 8-week treatment phase of CBGT versus a waitlist control was conducted among university students with social phobia. The Liebowitz Social Anxiety Scale –Self Rated Sinhala version (LSAS-SR) was administered at screening, baseline, four weeks and eight weeks of the trial. A culturally adapted CBGT was delivered in Sinhala to the intervention group by a trained clinical psychologist.

**Results:** Thirty university students (15 in each arm) with a mean age of 22, meeting DSM IV criteria for Social Anxiety Disorder were included. Repeated measure analysis of the total scores of the LSAS-SR in the CBGT arm showed statistically significant ( $p < 0.001$ ) reduction in the total scores (13.3) as compared to the waitlist arm after controlling for age and gender.

**Conclusion:** CBGT is superior to waitlist control in university students with social phobia.

#### OP: 38

##### Prevalence and Correlates of Interpersonal Violence Among In-School Adolescents in Sri Lanka

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**Introduction and Objectives:** Interpersonal violence among adolescents is a grave public health issue with adverse physical and psychological outcomes among children and young people under the age of 18 years. Among school going adolescents, these effects may ultimately lead to a deterioration of school performance. The main objective of this study was to estimate the prevalence of interpersonal violence and its<sup>â€™</sup> correlates among school going adolescents of ages 13-17 years.

**Methods:** Data was obtained from the Sri Lankan Global School-Based Health Survey conducted in 2016, among a nationally representative sample of 3125 students in grades eight to twelve in government schools of Sri Lanka. Prevalence of being physically attacked and being engaged in a fight are reported using frequencies with 95% confidence intervals. Correlates were identified by conducting a multivariate analysis.

**Results:** Of the 3,262 students who participated, 35.1% (95% CI- 31.0%-39.5%) were physically attacked and 44.2% (95% CI- 39.2%-49.4%) were in a fight with peers, one or more times during the 12 months prior to the survey. Multivariate analysis using multiple logistic regression revealed that being bullied by peers, male sex, 13-15 year age group, smoking and alcohol use, considering or attempting suicide, missing classes without permission and parents not being aware of students<sup>â€™</sup> activities were significantly associated with violence.

**Conclusions:** The prevalence of interpersonal violence was unacceptably high among the students. Preventive interventions should focus mainly the male students and young adolescents, and address the modifiable risk factors found in the current study.

#### OP: 39

**The Health Effects of the Combined Use of Protein, Multivitamins and Electrolyte Dietary Supplements on Sri Lankan Athletes: a Pilot Study**  
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**Introduction and Objectives:** The combine use of protein, multivitamins and electrolyte dietary supplements daily; multiple supplement (MS), is a common practice among Sri Lankan Athletes. The aim of this study was to determine the relative risk for developing adverse health effects from multiple supplements use.

**Method:** A Retrospective Cohort, pilot study was conducted with 45 healthy athletes (23 males and 22 females), age between 22-31. Participants were composed of non-supplement users (n=19) and MS users for 2-5 months' time (n=25). Their lipid, kidney, liver profiles, full blood count, fasting blood glucose, serum testosterone, urine full report and urine protein/creatinine were tested. Food

frequency questionnaire was also filled from each athlete.

**Results:** Increase in total cholesterol and LDL cholesterol was significantly higher among multiple supplements users than non-users ( $P < 0.05$ ). Relative risk in increasing total cholesterol between 200-240 mg/dL was 8.7, increasing LDL cholesterol between 160-171 mg/dL was 2.9 and being overweight was 1.3, in MS users compared to non-users. Relative Risk in increasing total cholesterol was 2.9 in female and 7.1 in male while increasing LDL cholesterol was 2.3 in female and 4 in male. There were no statistically significant changes in the other parameters studied.

**Conclusion:** Combined use of MS between 2-5 months, has a negative effect on the lipid profile of athletes. More pronounced in male. The clinical implication of this finding needs further study.

#### OP: 40

#### Prevalence of Geriatric Depression and Associated Factors in Institutionalized Elders: a Descriptive Study in Galle District

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**Introduction and Objectives:** Population ageing is a significant social problem of the twenty-first century. Sri Lanka has higher proportion of elderly population than other South Asian countries. Gradual changes of family structure compelled many elders to appeal for elderly care facilities in institutions at present. Institutionalized elders face many psychological problems which negatively impact their lives. This study assessed the prevalence of geriatric depression (GD), catastrophizing pain (CP), sleep disorders (SD) and their correlations in institutionalized elders in Galle District.

**Method:** A descriptive cross-sectional study carried out in 20 elderly homes enrolling 310 subjects. GD, CP and SD were assessed using validated Sinhala versions of Geriatric Depression Scale (GDS), Pain Catastrophizing Scale (PCS) and Pittsburgh Sleep Quality Index (PSQI) respectively.

**Results:** GD was present in 76% of subjects and from them 44% had moderate to severe depression. PCS revealed that 92% had CP and 31% had moderate to severe pain. Sleep disorders were identified in 55.5% of elders and according to

PSQI, 14% of elders had good and 86% had poor quality sleep. The positive correlations between GD and CP ( $r = 0.238$ ,  $p = 0.000$ ), CP and SD ( $r = 0.316$ ,  $p = 0.000$ ) were statistically significant but correlation between GD and SD was not significant ( $r = 0.054$ ,  $p = 0.347$ ).

**Conclusions:** The prevalence of GD, CP and SD were high in this sample of institutionalized elders in Sri Lanka and these baseline data will be useful in enacting policies in the management of ageing population in the future.

#### OP: 41

#### Comparative Effect of Crude Extracts of Two Sri Lankan Medicinal Plants (*Epaltes divaricata* and *Vetiveria zizanioides*) against Methicillin-Resistant *Staphylococcus Aureus*

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**Introduction and Objectives:** Methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the major causes of hospital and community-acquired infections. Therefore, this study was conducted to explore the antibacterial activity of *Epaltes divaricata* and *Vetiveria zizanioides* against clinical isolates of MRSA.

**Method:** Hexane, ethanol and water extracts of *E. divaricata* (whole plant) and *V. zizanioides* (roots) were prepared. Clinical isolates of MRSA strains ( $n=20$ ) were tested for the susceptibility using disc diffusion assay and minimum inhibitory concentration (MIC) was determined using broth micro-dilution method. Vancomycin was the positive control.

**Results:** Hexane, ethanol and water extracts of *E. divaricata* showed inhibitory zones against MRSA. Except water extract, both hexane and ethanol extracts of *V. zizanioides* showed inhibitory zones. MIC ranges of hexane, ethanol and water extracts in *E. divaricata* were 0.012-0.32 mg/mL, 0.019-2.4 mg/mL and 0.019-0.48 mg/mL respectively. Respective MIC ranges of hexane and ethanol extracts of *V. zizanioides* were 0.003-0.032 mg/mL and 0.019-2.4 mg/mL. Hexane extract of *V.*

*zizanioides* inhibited 55% of the selected MRSA strains at relatively low MIC value of 0.012 mg/mL. Hexane extract of both plants demonstrated inhibition of 75% of MRSA strains at a MIC value of 0.064 mg/mL. Ethanol extract of *V. zizanioides* and *E. divaricata* respectively inhibited 70% and 45% of MRSA strains at the MIC of 0.096 mg/mL whereas, water extract of *E. divaricata* inhibited 80% of MRSA strains at the same MIC.

**Conclusion:** Comparatively, *V. zizanioides* was more effective since the hexane and ethanol extracts inhibited majority of MRSA strains at relatively lower concentrations. Further studies are required to identify active constituents which exhibited the antibacterial activity.

#### OP: 42

##### Clinicopathological Profile of Cutaneous Leishmaniasis in Army Personnel in the Kilinochchi and Mullativu Districts of Sri Lanka

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**Introduction and Objectives:** Leishmaniasis is caused by an intra cellular protozoan of the genus *Leishmania*. The clinicopathological profile of cutaneous leishmaniasis (CL) varies according to the species. *Leishmania donovani* is the causative organism for leishmaniasis in Sri Lanka. This study describes the clinicopathological features of cutaneous leishmaniasis among army personnel serving in two Northern districts of the country.

**Methods:** In this collaborative cross-sectional study, the histopathology of fifty cases of CL confirmed by at least two methods (slit skin smear, lesion aspirate, tissue impression and histology) were reviewed. The parasitic load was assessed semi-quantitatively. The histological features were correlated with the clinical presentation and organism load.

**Results:** The majority (89.8%; n=44) presented with a single lesion mostly located in the upper limb

(69.4%, n=34). The lesion types included papule (34.7%, n=17), nodule (32.7%, n=16) and ulcer (30.6%, n=15). Evolution time of lesions averaged 31.55 weeks. Epidermal changes were observed in 49 and included hyperkeratosis (90.0%;n=45), acanthosis (44.0%;n=22), atrophy (34.0%;n=17) and interface change (66%;n=33). Dermal changes were seen in all cases and characterized by a lymphohistioplasmacytic inflammatory infiltrate of variable intensity with ill-formed granuloma in 19 cases (38%) and well-formed epithelioid granulomas in 22 cases (44%). Focal necrosis was present in 20 % (n=10). *Leishmania* amastigote forms were observed in 88% (n=44). Transepidermal elimination (P=0.025), granuloma (P=0.027) formation and type of lesion (P=0.034) were significantly associated with organism load with granuloma formation being associated with reduction in organism load.

**Conclusion:** Histopathological changes were characterised by a diffuse lymphohistioplasmacytic infiltrate, ill-defined granuloma or well-formed granuloma. Well-formed granulomata were associated with a reduction in organism load.

#### OP: 43

##### Endoscopic Ultrasound Guided Fine Needle Aspiration in Patients with Pancreatic Masses: a Study to Assess its Efficacy and Complications

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**Introduction:** Tissue diagnosis of pancreatic masses is important when radiology is inconclusive and when a pancreatic malignancy is deemed inoperable. Due to its retroperitoneal location, Endoscopic ultrasound (EUS) guided fine needle aspiration (FNA) is the preferred and only options at most times. This is the first such study carried out in Sri Lanka.

**Method:** 58 patients referred with pancreatic masses on radiological imaging for EUS FNA which was performed by a single endoscopist (ANR) in a Tertiary care referral center during March 2018 to April 2020 were studied. A linear echo endoscope was used with a 22G FNA needle to acquire tissue which was sent in formal saline and alcohol.

**Results:** 26 females and 32 males underwent EUS FNA with a mean age of 53.1(17-80 years). On radiology the suspected mass was in the head

31/58(54%), body 16/58(28%), tail 05/58(08%) and uncinata process 06/58(10%). On EUS 20 solid and 32 cystic lesions were found. Of the solid lesions 15/20(75%) had a positive diagnosis on histology, 9/15 Adeno carcinoma, 3/15 Neuroendocrine tumors, 1/15 plasmacytoma, 2/15 inflammatory cells. Of the cystic lesions 30/32 had an acellular smear and 2/32 had inflammatory cells. CEA and Amylase was sent in all cystic lesions. Overall success rate of reaching a diagnosis was 47/52(90.3%) of the total FNAs. Complications were acute pancreatitis 1/58(0.01%), infection 2/58(0.08%) with no significant bleeding.

#### OP: 44

##### The Incidence and Patterns of Lung Cancers in Sri Lanka from 2001-2010: Analysis of National Cancer Registry Data

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**Introduction and Objectives:** Varying patterns in the incidence of lung cancer (LC) have been reported across countries in Asia. We aimed to examine the trends in LC incidence and patterns in Sri Lanka.

**Methods:** A retrospective cohort evaluation of newly diagnosed patients with LC in Sri Lanka during 2001–2010 was done using population based data published by the National Cancer Registry. Trends in incidence were analysed by age and gender using the Joinpoint regression software.

**Results:** A total of 8482 LC (6831 males 80.5%, mean age 60.2 years) were diagnosed over the 10-year study period. Highest incidence of LC was observed in 70-74 year age group. The majority (n=2332, 27.4%) were reported as carcinoma not otherwise specified (NOS), squamous cell carcinoma (n=2271, 26.8%) and adenocarcinoma (n=2285, 26.9%). The WHO age standardized incidence increased from 3.77 per 100,000 in 2001 (95% confidence interval [95% CI]: 3.47-4.07) to 5.74 per 100,000 in 2010 (95% CI: 5.38-6.09; a 1.52-fold increase (p <0.05 for trend), with an estimated annual percentage change (EAPC) of 5.4 (95% CI: 3.9-7.0). The proportional increase in incidence was slightly higher for females (EAPC=6.8, 95% CI: 4.0-9.7) than males (EAPC=5.2, 95% CI: 3.8-6.6).

**Conclusions:** An increasing incidence of LC was seen with a greater proportional rise in females.

Although this may be partly due to better reporting, the greater increase in females who are generally non-smokers is intriguing. Further studies are required to identify the factors leading to observed changes in epidemiology of LC in Sri Lanka.

#### OP: 45

##### *Burkholderia pseudomallei* Peri-Prosthetic Infection following Medial Malleolar Internal Fixation: a Case Report

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**Introduction:** Melioidosis-associated peri-prosthetic infection is extremely rare. To date, melioidosis-associated septic arthritis of the ankle joint following a medial malleolar internal fixation has not been reported.

**Case presentation:** We describe a 49-year-old male with long standing diabetes who presented with fever and right ankle pain for 1 week. Ten years ago, he underwent a medial malleolar screw fixation following a traumatic closed fracture. There was no recent history of trauma, break in skin integrity or cutaneous lesions. His inflammatory markers were elevated (white cells:15x10<sup>3</sup>/uL with neutrophil leucocytosis; C-reactive protein:190mg/dl; erythrocyte sedimentation rate:86 mm/hour). His right ankle radiographs showed no evidence of osteomyelitis. Later he developed skin necrosis and underwent a wound debridement and ankle joint washout. The peripheral blood and pus from ankle joint was culture positive for *Burkholderia pseudomallei* with very high antibody titres. His subsequent radiographs showed features of chronic osteomyelitis. He was treated with intravenous Meropenem 2g 8 hourly and oral Cotrimoxazole 1920mg 12 hourly for 8 weeks in addition to repeated wound debridement. He was discharged with Oral Cotrimoxazole 1920mg 12hourly for 2 months. At follow up after 6 months, he had no clinical features of recurrent infection.

**Conclusions:** We report a unique presentation of melioidosis-associated osteomyelitis and septic arthritis of the ankle joint following medial malleolar internal fixation. The diagnosis of melioidosis should be considered with a high index of suspicion in peri-prosthetic infections, in susceptible individuals. Proper surgical debridement and retrieval of material for microbial cultures and initiation of antibiotics should not be delayed.

**OP: 46****Unintentional Injuries Among In-School Adolescents in Sri Lanka**

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**Introduction and Objectives:** Unintentional injuries is the leading cause of mortality and morbidity among children and adolescents globally. Road traffic injuries, falls, burns, drowning and poisoning account for most of this burden. There is a scarcity of knowledge regarding the extent and the factors associated with injuries in developing countries. The main objective of this study was to estimate the incidence of unintentional injuries and its correlation among school going adolescents of ages 13-17 years in Sri Lanka

**Methods:** A secondary analysis was carried out using the data obtained through the Sri Lankan Global School-Based Health Survey conducted in 2016. This survey was conducted among a nationally representative sample of 3125 students in grades eight to twelve in government schools of Sri Lanka. Data were analyzed using SPSS 21.0 software. Incidence of injuries are reported using frequencies with 95% confidence intervals. Correlates were identified by conducting a multivariate analysis.

**Results:** Of the 3,262 students who participated, 35.8% (95% CI-30.7 - 41.1) have been seriously injured at least once during the twelve months prior to the survey. The most common type of injury was falls (48.4%), followed by motor vehicle accidents (12.1%) and things falling onto the person (10.7%). Being bullied by peers (aOR 2.3), male sex (aOR 1.8), and being involved in fights (aOR 1.9) were significantly associated with sustaining unintentional injuries.

**Conclusions:** The incidence of unintentional injuries was unacceptably high among the students. Preventive interventions should focus on the common types and the risk factors for sustaining injuries.

**OP: 47****Epidemiological and Clinical Characteristics of COVID-19 Patients: the Initial Experience of Sri Lanka**

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**Introduction and Objectives:** Population-specific knowledge on exposure, clinical course and outcomes of Corona Virus Disease 2019 (COVID-19) is pivotal for advocating an evidence-based public health response. This study aimed to describe clinical and epidemiological characteristics of initial COVID-19 patients managed in Sri Lanka.

**Methods:** This was a retrospective cross-sectional study conducted using secondary data extracted from bed head tickets and investigation reports from the first 100 COVID-19 confirmed patients who had recovered and been discharged or dead following their hospital stay in one of three designated COVID-19 treating hospitals in Sri Lanka. Clinical outcomes were categorized as mild, severe and critical in accordance with the international classification. Demographic, clinical and outcome-related data are presented as frequency distributions.

**Results:** Mean age of patients was 40.7 (SD=17.7) years. Majority was males (65%). Exposure to infection was predominantly among returnees from abroad (51%) and contact with a confirmed COVID-19 case (19%). Fever was the commonest symptom (66%) followed by dry cough (48%) and

sore throat (29%). Fever and dry cough were the leading symptom combination in patients (38.0%) on any day during the clinical course. Mild disease was predominant (92%), with only 2% and 6% having severe and critical disease respectively. Fatality among patients with critical disease was 100% and all were males.

**Conclusions:** Compared to other countries, local COVID-19 patient profile is similar in sex distribution but highlights a much younger age structure. Although the local clinical presentation is compatible, mild disease is seen in higher proportions in Sri Lanka than in China and European countries.

#### OP: 48

**Economic Burden of Out-Of-Pocket Expenditure During Early Pregnancy: Evidence from a Pregnancy Cohort in the Anuradhapura District**  
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**Introduction and Objectives:** Despite having a free health policy in Sri Lanka, evidence suggests that out-of-pocket expenditure (OOPE) on health is substantial. However, since local evidence on OOPE during pregnancy is scarce, this study aimed at estimating the OOPE during pregnancy in Anuradhapura district.

**Methods:** The study was carried out in 22 Medical Officer of Health areas in Anuradhapura district. Pregnant women in the first trimester (T1) registered in the field antenatal clinics were recruited to this study as a part of a large cohort, Rajarata Pregnancy Cohort (RaPCo). A self-administered questionnaire was used to collect data on average pre-pregnancy household income and expenditure as well as the T1 pregnancy cost.

**Results:** The mean age of the pregnant women (n=736) was 28.3 (SD=5.7) years and 84.6% (n=623) of them were not employed. The average monthly household income and expenditure were LKR 54,633.55 (SD=51,622.27) and LKR 34,367.53 (SD=22,638.18) respectively. The corresponding median values were LKR 42,000.00 and LKR 29,535.00. The average OOPE during T1 was LKR 2,747.17 (SD=4,169.42), which accounted for 6.5%

and 10.6% of the monthly household income and expenditure respectively. The OOPE during T1 was significantly higher ( $p<0.001$ ) among women who were employed than their counterparts. There was a statistically significant correlation between the monthly household income and the OOPE during T1 ( $r=0.114$ ,  $p<0.05$ ).

**Conclusions:** On average pregnant mothers in Anuradhapura district have to spend 6.5% of the monthly household income as OOPE during early pregnancy and the OOPE revealed a significant positive correlation with the household income.

#### OP: 49

**Knowledge, Attitudes and Practices Regarding Dengue Fever among Mothers of Paediatric Dengue Victims at Colombo South Teaching Hospital, Sri Lanka**

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**Introduction and Objectives:** In the Last six years the Colombo District recorded the highest number of Dengue cases. 20% of those were managed in Colombo South Teaching Hospital (CSTH). Understanding knowledge, attitudes and practices is essential to design suitable strategies to fight against this killer disease.

**Methods:** Hospital based cross sectional descriptive study. A Systematic sampling technique was done among mothers of paediatric patients who were receiving treatment for dengue at CSTH

**Results:** 79.22% of respondents had knowledge about the symptoms. Fever, Headache, and Joint Pain are the popular symptoms. The overall knowledge about transmissions is 82.96%. 75.21% of participants had good knowledge regarding dengue management while most of the participants did not have an idea regarding Papaw curing dengue variable. 52.1% participants believe that there is no treatment for Dengue fever. The overall knowledge about breeding places is good (82.68%).

79% of the participants follow Mosquito Preventing Practices while 83.36% of them having positive attitude towards dengue and only 66.2% mothers accepted that they are at risk of dengue. The knowledge about dengue vector common breeding place is 82.68 %. Most of the participants gained knowledge through television radio and newspapers. Sources of Dengue Information variables contributed an average of 92.91%.

**Conclusions:** Level of knowledge, attitude and practice regarding dengue fever among mothers is satisfactory and could be improved. The health care authorities should concentrate on educating the community with advanced health education, prevention and management techniques, in order to reduce further morbidity and mortality.

#### OP: 50

##### Caregiver Burden in Relation to Child's Disability among Primary Caregivers of Children with Cerebral Palsy attending a Sri Lankan Tertiary Care Facility

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**Introduction:** Cerebral palsy is the most common and costly form of chronic motor disability that begins in early childhood.

Caregiver burden is 'a multidimensional response for physical, psychological, emotional, social, and financial stressors associated with caregiving experience'. The primary purpose of this study is to get background knowledge of caregiver burden in cerebral palsy particularly in relation to child's disability and other contextual factors, in a well-established tertiary care neurology centre in southern Sri Lanka.

**Methods:** A Cross-sectional descriptive study was conducted, to assess the caregiver burden and associated factors among 163 primary caregivers of children with cerebral palsy registered in a tertiary care Paediatric Neurology Unit in Sri Lanka. Caregiver burden was assessed using locally validated Caregiver Difficulties Scale (CDS).

**Results:** A significant number of caregivers (n=133, 81.2%) had a moderate to high level of burden, while 55.8% had a high risk for psychological morbidity. Being the only child of the family (p<0.05), presence of co-morbidities (p<0.05) and being more physically disabled (p<0.001) showed significantly higher caregiver burden. Caregivers of children at higher levels of Gross Motor Functional Classification System (GMFCS) showed significant caregiver burden in all aspects of CDS compared to those at low GMFCS levels (p<0.001).

**Conclusion:** These findings highlight the necessity of including routine periodic monitoring of caregiver burden in all multidisciplinary cerebral palsy management programs. Furthermore, psychosocial support should be targeted to families with a single child and those caring for children with greater physical disability to ensure assistance is provided where the need is likely to be greatest.

#### OP: 51

##### Evaluation of the Effectiveness of Counselling for the Correct Inhaler Techniques among Asthmatic Patients

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**Introduction and Objectives:** Incidence of asthma has been increased recently in Sri Lanka. Poor inhaler techniques by patients may reduce the effectiveness of pharmacological management. This study aimed to evaluate the effectiveness of counseling for correct inhaler techniques among asthmatic patients.

**Methods:** A prospective study among patients with the history of asthma was carried out at Teaching Hospital Peradeniya. A pretested questionnaire was used to assess patients' knowledge of inhaler techniques in both control and intervention groups. The intervention group received a counseling session using video demonstrations and leaflets on proper inhaler techniques in addition to routine service that they get from the clinic. Both groups were assessed at one month follow up.

**Results and Conclusions:** 160 patients were recruited (79 control and 81 intervention). In the control group, 22 used MDI without spacers, 21 MDI with spacers, 18 Rotahalers, 6 Aerolizers, and 13 Ventohalers while in the intervention group consist of 23 MDI without spacers, 18 MDI with spacers, 23 Rotahalers, 3 Aerolizers and 15 Ventohalers at baseline. Four control patients and 9 intervention patients were excluded at one month due to change in the device or lost to follow up. Overall demonstration of optimal inhaler techniques were significantly higher after one month compared to baseline in the intervention group for all the inhalers; MDI without spacers ( $X^2=28.94$ ,  $p<0.0001$ ), MDI with spacers for two techniques ( $X^2=5.15$ ,  $p=0.0233$ ;  $X^2=7.626$ ,  $p=0.0058$  respectively), Rotahalers ( $X^2=11.80$ ,  $p=0.0006$ ), and Ventohalers ( $X^2=10.07$ ,  $p=0.0015$ ) except for Aerolizers ( $X^2=2.86$ ,  $p=0.0910$ ). Brief educational intervention improved correct inhaler techniques significantly at one month follow up.

**OP: 52****A Sustainable Program for the Innovations to Combat COVID-19 Pandemic in Sri Lanka**

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**Introduction and Objectives:** The COVID-19 pandemic, is consuming both health and non-health sector facilities in the world. In a situation where the requirement of a lower middle-income country such as Sri Lanka has increased, this program aims to bring about innovations and systems catered for Sri Lanka by Sri Lankan's in a sustainable manner in the local setting.

**Methods:** The Government Medical Officer's Association together with the Society for Health Research and Innovations initiated a program aiming to support innovators in order to build a common platform where the innovations would be evaluated. In phase one of the program the innovations were guided by an expert panel and provided with feedback to improve their products in order to proceed. In the second phase these were assessed by a Research and Development Committee which comprised of individuals from various sectors. In phase three they were assessed against the minimum requirements for each product. In addition, a fund-raising program was initiated with the support from a volunteer company to provide financial backup. This program creates an opportunity to further develop their products whilst ensuring catering for the health sector needs.

**Results:** As a result of the program 30 groups of innovators are being supported and developing their products.

**Conclusion:** A sustainable program for development and manufacturing of innovations whilst helpful during this period of COVID-19 pandemic, will continue to be useful in the post-pandemic era.

**OP: 53****Echocardiographic Evaluation of Anthracycline-Induced Cardiotoxicity in Breast Cancer Patients from Southern Sri Lanka**

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**Introduction and Objectives:** Anthracycline-induced cardiotoxicity is a major limitation of anthracycline combined chemotherapy. In the absence of any previous studies conducted in Sri Lanka, the objective was to determine the prevalence of anthracycline-induced cardiotoxicity in breast cancer patients using echocardiographic findings.

**Methods:** A prospective cohort study was performed on 196 patients. Echocardiography was performed on each patient by consultant cardiologists; one day prior to chemotherapy, one day after the first dose, one day after the last dose and six months after the completion of chemotherapy. Statistical analysis was performed using MINITAB 18 software.

**Results:** There was no significant change ( $p > 0.05$ ) in echocardiographic findings one day after the 1st anthracycline dose compared to baseline myocardial function. Significant differences ( $p < 0.05$ ) were observed between baseline echocardiographic parameters and one day after last anthracycline dose and six months after the completion of anthracycline therapy with a gradual and progressive deterioration in functional parameters. Sub-clinical cardiac dysfunction was defined as fall of ejection fraction (EF)  $> 10\%$  during follow-up echocardiography. There were 65 patients out of 196 (33.16%) who developed sub-clinical cardiac dysfunction six months after the completion of anthracycline chemotherapy. An equation was developed based on EF to predict the cardiotoxicity of a patient six months after the completion of anthracycline chemotherapy.

**Conclusions:** Prevalence of sub-clinical anthracycline induced cardiotoxicity was relatively high. The equation developed will be useful in monitoring the patients for cardiotoxicity. It is recommended to carry out long-term follow-up to detect early onset chronic progressive cardiotoxicity in patients who receive anthracycline chemotherapy

#### OP: 54

##### Meteorological Associations of Leptospirosis in Different Climate Zones of Sri Lanka; a Time Series Analysis

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**Introduction and Objectives:** Although Leptospirosis is associated with meteorological dynamics, the dissimilarities of meteorological parameters in different climate zones are not well studied. The objective of this study was to determine the meteorological associations of leptospirosis and to evaluate best leptospirosis prediction models in different climate zones.

**Methods:** Monthly leptospirosis and meteorological data from January 2007 to April 2019 were included for analysis. Administrative districts were classified into wet(WZ), dry(DZ) and highlands(HL) using factor analysis of rainfall data. Auto regressive integrated moving average(ARIMA) was employed for univariate predictions and Auto regressive distributed lag model(ARDL) was employed for multivariate analysis. Monthly average rainfall(RF), rainydays(RD), temperature(TEM) and relative humidity(RH) were included for multivariate analysis.

**Results:** Increased RF, RH and RD were observed before increasing the number of patients in DZ and HL while the association was not obvious in WZ. Temperature showed opposite fluctuation with the number of patients. The best univariate prediction models were ARIMA (1,0,0) (0,1,1) 12, ARIMA (1,0,0) (1,1,1) 12, ARIMA (0,1,1) (0,1,1) 12 in dry, wet and highlands respectively. RD is positively associated in all 3 zones( $p < 0.04$ ). RF was only positively significant in WZ at lag 5( $p = 0.03$ ) while RF was negatively associated in WZ at lag 2 and 3( $p = 0.04$ ). Temperature was positively associated at lag 0 of WZ and HL( $p < 0.009$ ) and it was negatively associated at lag 1 of WZ( $p = 0.01$ ). There was no association with RH.

**Conclusion:** Prediction of leptospirosis must be specified according to the climate zone. Further studies are needed to explain the survival of leptospira under different environmental conditions.





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ABSTRACTS OF POSTER PRESENTATIONS

PP: 001

Post-Viral Fatigue in Dengue Infection

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**Introduction and Objectives:** Fatigue is known to be common during the acute stages of dengue infection but its persistence following resolution of the acute infection has not been systematically studied. This prospective cohort study was aimed to assess the incidence of the post-viral fatigue (PVF) among dengue and non-dengue patients and to determine the factors associated with PVF.

**Methods:** The study population comprised individuals over 12 years of age and non-pregnant patients admitted to the National Hospital of Sri Lanka with an acute febrile illness ( $\leq 3$  days). Dengue fever was confirmed by NS1 antigen testing or RT-qPCR. The presence of significant fatigue was measured by the Fatigue Questionnaire (FQ) developed by Dittner et al, 2004. Patients were contacted two months after their hospital discharge. The score of 4 or above was considered as the cut-off for fatigue. A diagnosis of severe dengue was defined according to the previously agreed criteria by the World Health Organization. In brief, this included patients who had plasma leakage that leads to shock or fluid accumulation, severe bleeding or severe organ impairment.

**Results:** Of the 260 patients who were admitted to six medical wards during January 2018 to January 2020 (males – 63%): 158 were confirmed as dengue and 102 as non-dengue patients. Out of the dengue patients, 45 (28.5%) were diagnosed with dengue haemorrhagic fever and 10 (6.3%) with severe dengue. PVF was present in 60 (23.1%) patients. Among dengue patients, fatigue was present in 51 (32.3%) patients and in the non-dengue group in 9 (8.8%) patients. A significant association was noticed in the presence of fatigue between the dengue group and the non-dengue group ( $p < 0.001$ ). There was no statistical significance in between PVF and the presence of clinical symptoms, laboratory

parameters, development of plasma leakage or occurrence of severe dengue in either group. A significantly higher rate of PVF was reported amongst females (43.5%) as compared to males (23.9%) in the dengue group ( $p < 0.05$ ). Hypertension was significantly associated with development of PVF in the non-dengue group ( $p < 0.05$ ), 27.3% of hypertensive patients developed PVF compared to 7.1% of non-hypertensive patients who developed PVF in the non-dengue group.

**Conclusion:** The PVF was observed in 23.1% of dengue patients 2 months after their hospital discharge. There is a higher PVF reported amongst female dengue patients.

PP: 002

Prevalence and knowledge of hypoglycaemia among type 2 diabetes patients on insulin therapy, attending a tertiary care diabetic clinic  
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**Introduction and Objectives:** Hypoglycaemia is one of the most feared complications of insulin treatment. We aimed to see the prevalence and knowledge of hypoglycaemia among patients with type 2 diabetes who are on insulin.

**Methods:** A descriptive cross-sectional study was carried out at the diabetic clinic of NHSL, involving 380 randomly selected type 2 diabetic patients with a history of diabetes at least for six months duration and who were on insulin therapy (+other oral antidiabetic agents). Interviewers administered a pre-tested questionnaire and details from clinic records were used.

**Results:** Majority were female (69.4%). Mean age was 60 years (+9.3) and duration of diabetes was 16 years (+8.3). Majority (87%) were on both insulin and oral antidiabetic medicines. Prevalence of symptomatic hypoglycaemia was noted in 69%. Faintness (52%) and sweating (31%) were the commonest symptoms of hypoglycaemia. Nearly a quarter of them (23.4%) reported severe hypoglycaemia and 8.4% reported unconscious episodes. Clinically important hypoglycaemia (defined as RBS  $< 54$  mg/dL) was reported by 34.7%. Only 25% of the patients had correct knowledge on

hypoglycaemic symptoms, precipitating factors and preventive measures and only 58.6% patients reported hypoglycaemic symptoms to medical staff. Reducing the meal amount (45%), missing or delaying meals (19%,9%) were the important risk factors for hypoglycaemia. Although 42.4% patients reported to have tried herbs claim to cause glucose variations, there was no significant association seen with the occurrence of symptomatic hypoglycaemia (  $p=0.17$ ).

**Conclusions:** Though patients on insulin had high prevalence of hypoglycaemia, a large number didn't report it at their clinic visit and most of the patients had poor knowledge on identification and prevention of hypoglycaemia. Routine inquiry about hypoglycaemic episodes during the clinic review and frequent education programs would help in detection and prevention of hypoglycaemic episodes.

**PP: 003**

**Impact of Fluid and Dietary Non-Compliance on Morbidity and Mortality in Haemodialysis Patients**

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Haemodialysis (HD) patients should be adhered to therapeutic diet and fluid regime to prevent major complications such as cardiovascular complications, under-nutrition and infection. This study aimed to identify the impact of fluid and dietary non-compliance on morbidity and mortality in HD patients. The prospective observational study was conducted on 312 HD patients treated at Nephrology Unit, National Hospital, Kandy. Interviewer administered data collection form was used to collect the data from patients while they are on HD treatment. Follow-up study was conducted after six months from the first assessment to evaluate the morbidity and mortality. The mean age of this study group was 50.6 (SD=13.0581) years and the male to female ratio was 2:24. The non-compliance to water intake, IDWG (Intra-dialytic weight gain), protein and salt intake were reported as 73%, 90.7%, 58% and 46% respectively. During the 6th month follow-up period, 76 deaths (death rate – 24.35%) reported. Moreover, according to the results, 71%,

93.4%, 63.2% and 61.8% of dead patients had a previous history of high fluid intake, high IDWG, high salt intake and low protein intake respectively against the therapeutic guidelines. Edema, lack of sleep and loss of appetite were reported in higher number of patients. Results of this study proposed that increased IDWG is directly associated with the poor outcome of this study group. Patient education, identification of at-risk patients with non-compliance and assisting patients to manage difficulties with life-style changes related to HD are important elements in improving non-adherence practices of patients undergoing haemodialysis.

**PP: 004**

**Ischemic Stroke following Multiple Wasp Bites**

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**Introduction:** Wasp bite can give rise to variety of clinical symptoms from local reactions to systemic effects such as anaphylaxis and vascular thrombosis. Neurological manifestations like strokes are rare in wasp bites.

**Case report:** Mrs.A,40 year old previously healthy female presented with multiple wasp bites on face. She was stable without any neurological deficit on admission but on day two of hospital stay she developed confusion. On examination she had left /right disorientation with hemi sensory neglect. Her BP, PR and respiratory rate and oxygen saturation were normal throughout. Her full blood count, electrolytes, liver and renal functions were normal. Her Non contrast CT brain showed acute infarction in left parietal region. She underwent ECG, 2Decho, carotid Doppler, Lipid profile and coagulation studies to rule out risk factors for young stroke. She was started on aspirin and steroid and patient gradually recovered with minimal residual effects on discharge. With the temporal association of the events and absence of other risk factors for stroke in a previously healthy lady and NCCT imaging it was concluded that infarction was related to wasp bite.

**Discussion:** Pathophysiology of vascular involvement following wasp bite is yet to be described but presumed to be multifactorial. These include ischaemia due to hypotension following anaphylaxis, Direct toxic effect of wasp venom compounds and vascular inflammation,

blood cell aggregation followed by thrombosis and Vasospasm.

**Conclusion:** Wasp bites are common encounters in general medical wards. Apart from minor allergic reactions they can cause rare neurological complications like strokes. Doctors should be aware of these rare but serious complications.

**PP: 005**

**Does Lymphopenia Indicate the Disease Outcome? An Analysis of the First 100 Patients Discharged or Dead Following COVID-19 Disease in Sri Lanka**

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**Introduction and Objectives:** Coronavirus disease (COVID-19) is a pandemic caused by novel SARS-CoV-2. Evidence pointing to disease severity and outcome are still under investigation. This study aimed to retrospectively analyze the lymphocyte counts of first 100 COVID-19 patients following hospital discharge or death.

**Methods:** This study was conducted using data extracted from bed head tickets and laboratory investigations of the first 100 confirmed COVID-19 patients (live discharges or deaths) of the three designated hospitals in Sri Lanka. Clinical outcome was categorized into mild, severe and critical in accordance with international classification. It was compared with the first white blood cell count test done after hospital admission. Data were presented as mean and standard deviation (SD), statistical significance assessed using independent t test.

**Results:** Mean age of the patients was 40.7 (SD=17.7) years. Majority were males (65%). Mild disease was predominant (92%). Only 2% and 6%

had severe and critical disease, respectively. The mean WBC count and lymphocyte count of patients with mild disease were 7.9X10<sup>9</sup>/l (SD=2.5) and 32.4% (SD=11.5) respectively. The WBC count was lower in severe (mean=5; SD=5) and critical (mean=7.1; SD=1.9) disease categories. In critical disease where it was 100% fatality, mean lymphocyte count was about half of the mild category (mean=16.8; SD=10.1), with a statistically significant difference (t=2.95; p=0.004).

**Conclusion:** The lymphocyte count of mild disease differed significantly from the critical disease in COVID-19 patients. Low lymphocyte percentage can be an indicator of prognosis in COVID-19.

**PP: 006**

**Statin Eligible Patient Not Receiving Statins: an Analysis of Usage of Statins for Primary Prevention of Cardiovascular Disease Risk in Sri Lanka**

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**Introduction and Objectives:** Acute coronary syndrome (ACS) is the leading cause of hospital deaths in Sri Lanka. Dyslipidaemia is a risk factor for ACS. We aimed to find out the prevalence of dyslipidemia in patients with ACS and the use of statins as primary prevention in those with high Cardiovascular disease (CVD) risk assessed by QRISK2 score prior to this ACS.

**Method:** Conducted at medical wards of Colombo South Teaching Hospital in patients who have not been on treatment with statins and not diagnosed with dyslipidemia prior to this admission. Lipid profile was done within 24 hours.

**Results:** Of 125 patients (100 males/25 females), mean age 55.78(26-82). BMI > 23kg/m<sup>2</sup> in 65.6%. 65.6% had some lipid abnormality. The mean total cholesterol (TC), triglyceride(TG), high density cholesterol(HDL-C) and low density cholesterol (LDL-C) levels were 176.40±45.8, 144.66±71.21, 38.392±14.47, 109.98±42.78 mg/dl respectively. TC> 200 in 29.6%, LDL-c> 130 in 28.8%, TG> 150 in 31.2%, HDL-c suboptimal in 67.2%. 70.4% had a QRISK2 >10 and were eligible for statins prior to this ACS. 84% have not had a lipid screening and

91.4% were not aware of the need for it. Education level has no significant influence on the awareness about dyslipidemia. 54.4% were not aware that the elevation of certain types of cholesterol leads to ACS.

**Conclusions:** Most patients who were eligible for statins based on their CVD risk were not receiving statins. Patients should have their CVD risk estimated and statins should be given to eligible patients for prevention of ACS.

#### PP: 007

#### Design and Implementation of Novel Pharmacogenomic Assays for CYP2C19\*17 Variant to Predict Response to Clopidogrel Therapy in Patients

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**Introduction:** Cytochrome P450 2C19 (CYP2C19) catalyses the metabolism of a range of clinically important drug classes. CYP2C19\*17 is a novel variant allele specified by a double SNP in its promoter region and therefore leads to an ultra-rapid metabolic phenotype. This study was undertaken to design and implement novel pharmacogenetic assays for selected CYP2C19 gene variant to predict response to Clopidogrel. Cytochrome P2C19 enzymes play a major role in its metabolism, which determines its varied therapeutic level and its effectiveness.

**Methods:** Two SNPs causing increased enzymatic activity CYP2C19\*17 -806 C>T (rs12248560) and CYP2C19\*17 -3402 C>T (rs11188072) were selected for this study. Novel single variant tetra-amplification refractory mutation system (T-ARMS) polymerase chain reaction (PCR) assays were designed. The assays were implemented and optimized by genotyping the two SNPs in an existing blood resource obtained from a cohort of patients with a normal karyotype. 100 samples were genotyped for CYP2C19\*17.

**Results:** The desired specific bands were obtained by T-ARMS-PCR and PCR-RFLP methods. The frequency of the C/C [extensive metabolizer (EM)], C/T [ultra-rapid metabolizer (UM)] and T/T [UM] variants were 65%, 30% and 5% respectively for CYP2C19\*17 (-806 C>T) and 70%, 26% and 4% for CYP2C19\*17 (-3402 C>T).

**Conclusions:** We successfully designed and implemented novel genotyping assays for CYP2C19\*17 (-806 C>T) and CYP2C19\*17 (-3402 C>T) SNP's of the CYP2C19\*17 variant. The most prevalent allele in the Sri Lankan population were CYP2C19\*17 C/C and CYP2C19\*17 C/T for both SNP's. These low-cost pharmacogenomic assays could be offered to patients to predict their response to Clopidogrel.

#### PP: 008

#### Characteristics of Chronic Renal Failure in Giradurukotte, Sri Lanka

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**Introduction:** Prevalence of Chronic kidney disease (CKD) depends on the abundance of risk factors in a community. Hence, Diabetic nephropathy, hypertensive renal diseases and vascular CKDs are common in the elderly population and immunological renal diseases are common in young people. There are some CKDs only localized to certain geographical areas such as CKD of unknown etiology (CKDu). This study aimed to compare the age and gender-specific prevalence of CKDu with other forms of CKD and to identify the characteristics of chronic kidney diseases reported in Giradurukotte, Sri Lanka.

**Methods:** This retrospective descriptive study was conducted on 1321 patients reported to Giradurukotte Divisional Hospital during the period between 2014- 2019. Data were extracted from the clinic registry using total purposive sampling technique. Data were analyzed using SPSS statistical software.

**Results:** Majority of the patients (n=937, 70.9%) had been diagnosed with CKDu while the rest had CKD (n=384, 29.1%). 39.9% of the CKD patients had hypertension (HTN) as a causative factor while 17.5% had Diabetic Mellitus (DM) and 12.4% had both DM and HTN. CKD patients were significantly older than patients with CKDu (p< 0.05) with the mean age of 58.0 (± 12.71) in CKD and 55.19 (±11.92) in CKDu. Mainstream was males (n=965, 73.05%). Male gender accounted for 77.3% (n=728) in CKDu and in CKD it was 61.7% (n=237).

Proportion of farmers was significantly higher ( $p < 0.05$ ) in CKDu (60%) than CKD (43.5%).

**Conclusion:** Male farmers at working age were at high risk of acquiring CKDu than CKD in Giradurukotte.

**PP: 009**

**Community Prevalence of Chronic Kidney Disease among Wet Zone Farming Population in Sri Lanka**  
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**Introduction:** Chronic kidney disease (CKD) is a major medical concern worldwide. Diabetes and hypertension are the most common causes for CKD. On the other hand, a new form of CKD has been identified without the risk factors like diabetic mellitus (DM) and hypertension (HTN). The present study was conducted to describe the prevalence of CKD in a rural farming area of Sri Lanka.

**Methods:** Cross sectional study was carried out among 522 adult participants in the age category of 25-60 living in Mathurata area which is located in Central province in Sri Lanka. Participants were recruited using total purposive sampling technique during a series of screening programs conducted in the area.

**Results:** Total of 522 people were participated in the study with a male to female ratio of 1: 1.91. High serum creatinine level was reported in 44 participants (8.42%). Hyperglycemia was found in 16.49% while hypertension was recorded in 22.98% of the participants. Among the 44 of the participants with high serum creatinine level 36.3% were presented with hyperglycemia while 27.3% had hypertension. 13.63% had both hyperglycemia and hypertension. The most important finding was that majority of the (50%) patients with high serum creatinine level were presented without hyperglycemia or hypertension.

**Conclusion:** Other than the DM and HTN, there are several causative factors for the causation of kidney diseases. Further studies should be designed to reveal the role of other causative factors and find unrevealed causative factors.

**PP: 010**

**Pulmonary Tuberculosis among Patients Attending the Diabetes Clinic of the National Hospital of Sri Lanka: a Guide to Implement a National Policy on Active Screening**

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**PP: 011**

**Acute Renal Vein Thrombosis – a Rare and Unusual Initial Presentation of Systemic Lupus Erythematosus in the Emergency Department**

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**Introduction:** Systemic Lupus Erythematosus (SLE) is multi-systemic, autoimmune disease. Clinical presentations are variable and heterogeneous. Abrupt and life threatening presentations are uncommon in connective tissue disease. SLE itself is an independent risk factor for arterial and venous thrombosis. Acute renal-vein thrombosis (RVT) is a rare, known complication of SLE. Incidence is not reported. It is unusual, Acute RVT occur as initial manifestation of SLE.

**Method:** Here, we report young female with acute left RVT due to SLE on initial presentation.

**Results:** A 29-year-old female without comorbidities, presented to Emergency department with left loin pain, tenderness and fever. Ultrasound confirmed left RVT and evidence of acute pyelonephritis. On Day five, she developed acute dyspnea and bilateral pulmonary emboli were radiologically confirmed. We initially managed with anticoagulation, main stay of treatment in general and further inserted IVC filter. Forearm rash developed on second week, skin biopsy showed micro-vascular occlusions, suggestive of SLE. Malar rash appeared with progressive generalized erythema later. Autoimmune profile showed positive ANA of 1:640, low complements, high ESR. Thrombophilic screening including Anti Phospholipid was negative. Virology screening was negative. High dose steroids and hydroxychloroquine started. With appropriate diagnosis and therapy, patient had a benign course during 12 months of follow-up.

**Conclusion:** SLE per se seems to be a risk factor for thrombosis, mainly in active phase. Presentations with flank pain could be confused with more frequent cases as urolithiasis. RVT in SLE is rare clinical condition, thus clinicians should have high index of suspicion especially in young women for early and prompt diagnosis.

**PP: 12**

**Common Knee Ligament Injury Patterns and Hamstring:Quadriceps (H:Q) Functional Strength Ratio in Injured Athletes from Universities in the Colombo District**

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**Introduction and Objective:** Knee ligament injuries are common among athletes. The functional H:Q ratio is used to assess the functional ability of the knee joint. Objective was to describe common knee ligament injury patterns Compare H:Q functional strength ratio between injured and non-injured athletes from universities in Colombo district.

**Methods:** A descriptive cross-sectional study was conducted using 80 athletes in 3 selected universities in Colombo district allocating two groups as injured and non-injured. Athletes who had ligament injury during last 6 months and have returned to playing without proper rehabilitation (had only rest, bandaging, ice and painkillers as treatments) were selected for the injured group. Interviewer administered questionnaire was used to collect details of ligament injury types and athletic events. Hand-held dynamometer was used to measure muscle strength. H:Q ratios were compared using independent sample t-test. Statistical significance was considered as 0.05.

**Results:** The mean functional H:Q ratio (0.58; SD+/-0.05) of the injured group was lower than that of non-injured (0.78; SD+/-0.10) group. The difference was significant in both males and females (p=0.000). The commonest knee ligament injury was found as anterior cruciate ligament (ACL) injury (37.5%). Majority of injured male athletes had ACL injury (45%) while the majority of injured female athletes had meniscal injury (40%). The athletic event which most of injured participants were engaged in were 200m and 400m in males (40%) and 200m in females (20%).

**Conclusion:** The low value of H:Q ratio might be a risk factor for further knee ligament injuries causing diminished performance in athletes.

**PP: 013**

**Twenty Long Years on Haemodialysis – a Case Report on Longest Dialysis Survivor in Sri Lanka**

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**Introduction:** Chronic Kidney Disease carries high mortality. Transplantation bears better prognosis

for End Stage Renal Failure (ESRF). Perception of longevity on haemodialysis (HD) beyond few decades is questionable. Long-term survival does occur, few have been described surviving beyond three decades on HD. We report a Sri Lankan on conventional in-center twice a week HD for 23 years. Our dialysis survivor diagnosed with dialysis related secondary amyloidosis.

**Method:** Burden of ESRF is enormous in Sri Lanka, state sector unable to provide required HD. Limited numbers are on maintenance HD and published data is sparse. Cross sectional analysis was performed and found out the best dialysis longevity in Sri Lanka.

**Results:** In 1983, Ms.K presented with nephritic state at 25 years, and diagnosed class IV lupus nephritis. She received cyclophosphamide and steroids. She reached ESRF needing HD in 1995. Radio-cephalic arterio-venous fistula remained intact over decades as access. Transplantation was never her choice. She had myocardial infarction in 2001. Bone biopsy revealed beta-2 amyloidosis on 17<sup>th</sup> year of dialysis.

Average Kt/V was 1.64. Blood pressure was well controlled with single antihypertensive. Haemoglobin maintained with erythropoietin injections. Ejection fraction was 60% with mild LVH. Reasonable quality of life(QOL) maintained. She is independent and continues occupation.

**Conclusion:** HD prolonged survival far more than expectations and offer appreciable QOL. Long-term survival on HD has repeatedly claimed for individuals. Although it is considered high mortality on long-term HD, rare cases who do exceptionally well. Implementing high-flux filter will reduce complications of developing dialysis related amyloidosis on long term.

#### PP: 014

##### A Case Report on Acute Pulmonary Oedema Following an Anaphylactic Shock

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**Introduction:** Pulmonary oedema following anaphylactic shock is rarely reported. We report a case of acute pulmonary oedema occurred in a

patient treated with intramuscular adrenaline for an anaphylactic shock.

**Case presentation:** A 59 year-old diabetic female was treated for cellulitis. She developed severe hypotension, hypoxia (SPO<sub>2</sub>-88%) with bilateral rhonchi immediately after administration of intravenous crystalline penicillin. Clinical diagnosis of anaphylactic shock was made and 0.5mg (1:1000) intramuscular adrenaline was administered up to 3mg at 5-minute intervals while monitoring vitals. She was treated with high flow oxygen, intravenous crystalloid 10ml/kg bolus, salbutamol nebulization, intravenous chlorpheniramine and hydrocortisone. She was then transferred to the ICU after stabilization, did not need further adrenaline and started on maintenance fluids. She developed worsening hypoxia with bilateral basal fine crepitations four hours later and CXR was compatible with pulmonary oedema. Clinically she was euvoalaemic. Electrocardiogram and bedside 2D-Echocardiogram were normal. Her clinical condition improved over the next 48 hours with CPAP ventilation and intravenous frusemide.

**Discussion:** Pulmonary oedema in anaphylaxis is due to pulmonary capillary hypertension, incompetent alveolo-capillary membrane or both. Adrenaline toxicity may also cause pulmonary oedema by increased workload on left ventricle and changes in pulmonary endothelium and Clara cells. Acute pulmonary oedema in this patient may be due to either of these mechanisms. Certain patients may need CPAP or mechanical ventilation with supplementary oxygen.

**Conclusion:** Pulmonary oedema in anaphylaxis may be multifactorial and life threatening. Continuous monitoring would lead to early identification and prompt management that would drastically improve outcomes.

#### PP: 015

##### Reference Intervals and Age Related Trends of Bone Turnover Markers in Adult Women

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**Introduction and Objective:** Reference intervals of bone turnover markers are not available for Sri Lankan women. This study was performed to establish age related reference intervals for bone formation marker; procollagen type I N-propeptide (P1NP) and bone resorption marker; cross linked C-telopeptide of type I collagen (CTX) in a group of adult women.

**Methods:** Adult women (n=347) aged 20-69yr were recruited from Galle, Sri Lanka using age stratified random sampling technique and categorized into age groups by decades. Serum P1NP and CTX levels were analyzed using ELISA. Geometric mean, 2.5th and 97.5th percentiles were calculated. ANOVA was used to compare the means between groups.

**Results:** P1NP level decreased by 18% from the age of 20yr to 49yr and then gradually increased by 5% until the age of 69yr. CTX levels were relatively low and remained unchanged between 20yr and 49yr. After the age of 49yr, mean CTX level increased by 43% (p<0.001) until the age of 69yr. The lowest levels of both CTX and P1NP were seen in between 40-49yr. Reference intervals were based on 2.5th and 97.5th percentile values. Reference intervals of P1NP for the age groups of 20-29, 30-39, 40-49, 50-59, and 60-69yr were 118-810 pg/mL, 119-772 pg/mL, 116-645 pg/mL, 108-684 pg/mL and 108-715 pg/mL respectively. Reference intervals of CTX for the same age groups were 0.19-0.97 ng/mL, 0.18-0.95 ng/mL, 0.20-1.29 ng/mL, 0.17-2.20 ng/mL and 0.17-2.85 ng/mL respectively.

**Conclusion:** In Sri Lanka, bone turnover markers are not used in evaluating patients mainly due to lack of normative data. These values can be used as reference data for women in this age group.

#### PP: 016

##### **Risk of Obstructive Sleep Apnoea in Chronic Liver Cell Disease Patients Admitted to a Tertiary Care Centre**

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**Introduction:** Morbidity and mortality caused by cirrhosis is on the rise due to population growth and ageing all around the world. Hepatic encephalopathy, a common complication of cirrhosis which is defined as potentially reversible

neuropsychiatric abnormalities seen in patients with liver dysfunction has sleep disturbances as an integral part of the disease itself. But cirrhosis patients also suffer from various other sleep disorders including obstructive sleep apnea (OSA) which is independent from hepatic encephalopathy manifestations. OSA when diagnosed early can be treated successfully to prevent further complications.

**Methods:** A cross sectional study was conducted among cirrhosis patients admitted to Colombo South Teaching Hospital using investigator administered questionnaire to assess the prevalence of OSA. Internationally validated STOP BANG was used to screen for OSA.

**Results:** Out of 42 participants two third were males and the mean age of the study population was 58. Majority of the patients were in Child's Pugh class C (76.2%) The 38.1% of the study population was having high STOP BANG scores (≥5) and was in the high risk group for obstructive sleep apnea. In the study population also the prevalence of diabetes and hypertension between low and high risk groups of OSA were found to be statistically significant. Higher severity of cirrhosis was associated with high risk STOP BANG scores. Having ascites conferred a higher risk for OSA.

**Conclusion:** Prevalence of OSA in cirrhotic patients is twice that of the general population in Sri Lanka.

#### PP: 017

##### **Gender Differences in Presentations of ST Segment Elevation Myocardial Infarction (STEMI) to the Accident and Emergency Department in a Tertiary Care Hospital of a Developing Country**

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**Introduction:** The clinical manifestation of STEMI varies, and patients present frequently with symptoms other than chest pain. Female, with STEMI present frequently with atypical symptoms. Early diagnosis and treatment of STEMI is crucial reduce the mortality and morbidity

**Methods:** The prospective observational study was carried out from 15<sup>th</sup> January 2017 to 15<sup>th</sup> July 2018 (18 months) to identify the gender differences in presenting symptoms of STEMI to the Accident and Emergency Department. Face

validation of the data tool was done by subject specialists.

**Results:** STEMI patients (n=370) were enrolled within 24 hours of admission. There were 272 (73.5%) males with a mean age 58.0 ( $\pm$ 12.8) years and females with a mean age of 64.4 ( $\pm$ 10.8) years. Women with STEMI were significantly older than men ( $p < 0.0001$ ). STEMI was more prevalent in men with no known risk factors (51.8 vs 32.7%  $p = 0.001$ ) and in women with hypertension (18.4 vs 10.7%  $p = 0.05$ ). The chest pain itself had no significance in gender whereas nausea was more prevalent among women (12.2 vs 5.1%  $p = 0.018$ ) and diaphoresis among men (10.3 vs 2.0%  $p = 0.010$ ). The squeezing nature of chest pain (19.1 vs 10.4%  $p = 0.029$ ) and pain radiation (73.2 vs 61%  $p = 0.032$ ) were prevalent among women.

**Conclusion:** Women with STEMI were 6.4 years older than men in average. A striking gender difference in STEMI symptoms found where diaphoresis was more common among men, nausea, pain radiation and squeezing nature were more common among women. STEMI was more common among men with no known risk factors and women with hypertension. Chest pain was the predominant presentation and there was no related difference between the two genders. This finding was not comparable with previous study findings.

**PP: 018**

**Allergy and Anaphylaxis Among Pre-Intern Medical Graduates of Three Universities in Sri Lanka**

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**Objective:** Data related to allergy and anaphylaxis are limited in Sri Lanka. We aimed to describe prevalence of allergy and anaphylaxis in a group of pre-intern medical graduates.

**Methods:** This cross-sectional study included MBBS graduates of three Sri Lankan universities, who graduated in 2019. Consecutive sampling was done. A self-administered questionnaire provided

data regarding self-reported prevalence of allergy and anaphylaxis.

**Results:** 392 participated (mean age:27.3 $\pm$ 1years; women:63.5%). Self-reported prevalence of allergy and anaphylaxis was 31.9% (125/392) and 2.3% (9/392), respectively. There was no gender-based difference in prevalence (allergy:  $p = 0.137$ ; anaphylaxis:  $p = 0.834$ ). Prevalence of allergy was higher in University-2 (40.6%;  $p = 0.005$ ) and anaphylaxis was higher in University-1 (5%;  $p = 0.03$ ). Commonest type was food allergy (14% among all; 44% among those with allergies). Drug allergy, allergy to dust and allergy to insect bites were reported by 4.6%, 6.6% and 1.3% of all participants, respectively. Commonest food items causing allergy were fish and pineapple (each: 25.5% of food allergies). Commonest drugs causing allergy were penicillins (44.5%), ciprofloxacin (27.8%) and NSAIDs (22.2%). Among nine participants who reported anaphylaxis, aetiology was unknown in three and it was ciprofloxacin in two. On regression analysis, allergy was 4.8 times (95% CI: 2.9-7.6) more common in those who had history of allergy in a first-degree relative. ( $p < 0.001$ ).

**Conclusions:** One third of study population had self-reported allergy. Food allergy was the most prevalent type. Family history was a strong predictor of allergy. Among the small number reporting anaphylaxis, aetiology was unknown in one third.

**PP: 019**

**Adherence to Surviving Sepsis Campaign Bundle at a Tertiary Care Hospital in Sri Lanka**

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**Introduction:** The global incidence of sepsis is increasing, and mortality remains high. The mortality is higher in resource poor countries. The Surviving Sepsis Campaign recommends an Hour-1 Bundle based on the evidence from International Guidelines for Management of Sepsis and Septic Shock 2016. To reduce mortality, compliance with the "bundle" is essential.

**Methods:** Patients admitted to the University Medical Unit of Colombo South Teaching Hospital from January-August 2019 were included.

**Results:** There were 387 patients: 163 males and 224 females. The age range was 15-95(Mean:63). 83.7% were direct admissions while 16.3% were transfers from a peripheral hospital. Most common source of infection: urine 82(21.2%), blood 105(27.1%), and skin and soft tissue 114(29.5%). One-hour SSC bundle compliance: administration of intravenous fluids: 42(10.9%), blood cultures before antibiotics: 225(58.1%), first dose antibiotic: 15(3.9%), Arterial blood gas: 60 (15.5%). Staffing capacity did not make a difference to adherence to the bundle. The study mortality rate was 37 (9.6%). Binary logistic regression indicates that Quick sequential organ failure assessment score (qSOFA) is a significant predictor of mortality, [Chi-Square=35.08, df=3 and p=0.000 (<0.05)] with an odds ratio (OR) of 7.529(95% CI 3.597-14.323).

**Conclusion:** In conclusion, mortality of sepsis is high and adherence to sepsis care bundle is poor in Sri Lanka even at a tertiary care hospital. Education and training of staff is needed to boost adherence which will improve outcomes of septic patients.

#### PP: 020

##### **Epidemiology of Stroke Subtypes and Aetiologies Among Sri Lankan Stroke Patients**

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**Introduction and Objectives:** Epidemiology of stroke subtypes in Asian countries is different from western countries. Data on stroke subtypes and aetiologies are limited from Sri Lanka. Therefore, we aimed to describe the same in Sri Lankans stroke patients.

**Methods:** We analyzed all the acute stroke admissions to Colombo North stroke unit over 5 years from 2013-2018 using the stroke registry. Data were collected prospectively using an interviewer-administered questionnaire and perusing medical records. Ischaemic strokes were classified into clinical subtypes using Oxfordshire Community Stroke Project (OCSP) and aetiological subtypes using Trial of Org 10172 in Acute Stroke Treatment (TOAST) classifications.

**Results:** 891 patients were admitted over 5 years; 765(85.5%) ischaemic strokes and 129 (14.5%) intracerebral haemorrhages (ICH). Of the ischemic strokes, 16(1.8%) were total anterior circulation,

253(29.0%) partial anterior circulation, 543(62.3%) lacunar, 59(6.8%) posterior circulation infarcts on OCSP classification. 542 ischaemic stroke patients who had complete investigations for TOAST classification were studied for aetiology of stroke. 17(3.1%) were of large artery atherosclerosis, 369(68.1%) small vessel occlusion, 11(2.0%) cardioembolic and 145(26.8%) of undermined aetiology.

**Conclusions:** Prevalence of ischaemic strokes and ICH were not different from western statistics but ischemic stroke subtypes and aetiologies were different in Sri Lankans. Total anterior circulation strokes were significantly lower and lacunar strokes were significantly higher among Sri Lankans compared to Western populations. Small vessel disease was the commonest cause of ischemic strokes and cardio-embolic and large artery strokes were less common compared to White Caucasians.

#### PP: 021

##### **Developing and Pilot-Testing an Oropharyngeal Dysphagia Screening Tool for Children with Cerebral Palsy Aged 4 – 6 Years**

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**Introduction and Objectives:** Children with Cerebral Palsy (CP) demonstrate a variety of dysphagic symptoms. Speech and language therapists (SLTs) are mainly involved in the diagnosis and management of oropharyngeal dysphagia (OPD). Objectives were to develop a screening tool to detect OPD among children with CP aged 4 – 6 years, Pilot test the OPD screening tool with SLTs for children with CP aged between 4 – 6 years and to identify the test-retest reliability and inter-rater reliability of the developed screening tool.

**Methods:** The screening tool was developed based on the Dysphagia Disorder Survey (DDS) with the assistance of an expert panel of speech and language therapists (SLTs) and a pilot study. The study included 30 children with CP aged between 4;0 – 6;0 years. The OPD Screening Tool conduct together with expert SLTs to evaluate the inter-rater reliability and the study was conducted initially and 2 hours later by the researcher to evaluate test-retest reliability.

**Results:** The OPD Screening tool was shown to be reliable and applicable in detecting dysphagia

amongst children with CP. The content validity was assessed by the five expert SLTs. The test-retest reliability and inter-rater reliability of the OPD Screening Tool was calculated and it was relatively high.

**Conclusion:** The screening tool was shown to be a reliable tool and it was found to be a tool that easy administer in clinical setting to detect OPD in young children with CP.

**PP: 022**

**Prevalence of Excessive Weight and Level of Physical Activity and Knowledge on Perceived Need on Physical Activity Among 10-19 Years Aged Visually or Hearing Disabled Adolescents in All Special Education Schools in the Western Province of Sri Lanka**

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**Introduction and Objectives:** Achieve health equity, eliminate disparities and health promotion among differently able children is an overarching goal in 2020. Differently able adolescents may be sedentary and may lead to excessive weight gain. Physically active life will ensure minimum co morbidity. The objective of the study was to describe the prevalence of obesity and overweight and the perceived need for physical activity among 10-19 years aged visually or hearing disabled adolescents in all special education schools in western province of Sri Lanka.

**Methods:** A descriptive cross-sectional study was conducted among age 10-19 years 376 visually or hearing disabled adolescents in all special education schools in western province of Sri Lanka. The Physical Activity Psychosocial and Environment PACE questionnaire was utilized to interview the perceived need and the anthropometric measurements were obtained to assess Body Mass Index (BMI). The validated Physical Activity Questionnaire –Sinhala (PAQ-S) was used to assess the level of physical activity.

**Results:** The response rate was 100%. The prevalence of overweight, obesity and underweight was 12%, 3.5% and 16.5%. The level of physical activity was 38.8%. A significant association was found with the level of physical

activity and felt of satisfaction following physical activities(p= 0.05), felt embarrassed when someone watching doing exercises (p= 0.04), the number of sports clubs participation in past 12 months (p=0.02).

**Conclusions and Recommendations:** Majority of the study group was insufficiently active. The study group may have done the physical activity merely for satisfaction. Social acceptance and social or family support played an important role in the physical activity encouragement. Health promotional physical activities are highly recommended.

**PP: 023**

**Readiness of Medical Students for Online Learning during COVID-19: Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka (FMAS, RUSL)**

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**Introduction and objectives:** In response to the COVID-19 pandemic, online learning was the best option to minimize the disturbances of university education. Hence, FMAS, RUSL promptly responded and transformed suitable curriculum contents into online deliverable formats. However, it is important to understand the readiness of students and availability of resources which would determine the effectiveness of e-learning. A Readiness survey was conducted aiming to obtain information on “availability of technology”, “competence in using Learning Management system (LMS)”, “self-confidence”, “acceptance levels” and “training needs” of the medical students.

**Methods:** Online survey was conducted using a self-administered questionnaire which included above mentioned five categories. The link of the google form was displayed at the faculty website and students were informed regarding the survey through batch representatives.

**Results:** Total of 997 students (out of 1080) responded and majority 544 used only Smart phones. Only 228 had a laptop or a tablet. 708 students used prepaid mobile data as their internet connection. Mobitel, Dialogue and SLT were reported as main internet providers. 719

students had good internet strength, 172 had poor strength and 2 (0.2%) had no internet access. Although 886 reported that they had previous experience with faculty LMS, 414 students requested training on LMS and 555 (56 %) requested for more focused instructions on online learning. 885 students agreed to continue education via online during COVID-19 pandemic.

**Conclusion:** For an effective implementation of online programme thoughtful planning is essential and this readiness survey helped us to appreciate the issues of students and to plan and implement a quality online programme.

**PP: 024**

**Graduate Perceptions on Factors Contributing to Stress During Different Components of the Colombo Medical Curriculum**

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**Introduction and Objectives:** Medical students experience high levels of stress throughout their programme. Stress decreases academic performance and leads to burnout. The MBBS curriculum in Faculty of Medicine, University of Colombo (UCFM) is structured as 'Streams'. Basic Sciences (BScS), Applied Sciences (AScS), Clinical Sciences (CScS) Streams are sequential. Behavioral Sciences (BSS) and Community Streams (CS) are conducted in parallel. This study aimed to determine the factors that contribute to students' stress in different streams of this curriculum.

**Methods:** A survey was conducted in 2020 among recent UCFM graduates. Their comments on the strengths and weaknesses of each stream and perceived stress during final year were collected through anonymised self-administered questionnaires. Comments related to stress were thematically analyzed.

**Results:** Questionnaire response rate was 100% (199/199). Adaptation to a new learning environment and inadequacy of time contributed to stress in BScS. While students reported less stress during AScS which follows, some were distressed by inadequate study leaves. During clinical years they found the strict behaviour of some teachers in CScS to be stressful. Students' perception on stressfulness of final year teaching varied with the discipline (39.7% to 3.5%). Some

students perceived simultaneous teaching of CS with other streams as stressful.

**Conclusions:** This study highlights the stressors in transition from school to university learning during early phases and the stressors in hidden curriculum during later clinical phases. Difficulties in managing time and learning in an integrated manner may be resultant secondary stressors. More gradual transitions, student support, and supportive clinical training with feedback may help students cope with stress.

**PP: 025**

**Burnout Syndrome, Associated Factors and Coping Strategies Adopted by Medical Students of the University of Jaffna**

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**Introduction and Objectives:** Burnout syndrome (BOS) is seen amongst Medical students which leads to chronic stress and need coping mechanisms to overcome it. This study aims to determine the prevalence of BOS, associated factors and coping strategies adopted by students of the Faculty of Medicine, Jaffna.

**Methods:** This descriptive cross sectional institutional based study was carried out among first to fourth year medical students. Data were collected using a self-administered questionnaire. BOS was measured using the Oldenburg Burnout Inventory (Student version)<sup>1</sup>. Data was entered and analysed using SPSS version 26. Chi Squared was used to assess the associated factors. Ethical clearance was obtained from the Faculty of Medicine, Jaffna.

**Results:** In total, 455 students participated (response rate 81%). The male:female ratio was 1:1.5; 51% were Tamil and 32.5% Sinhala with participation distributed near equally across batches. In the sample, 381 (83.7%) had BOS, which was significantly associated with year of study ( $p=0.048$ ); junior batches were more at risk. There was evidence of association with poor exam performance ( $p=0.048$ ), social media use ( $p=0.021$ ), less interaction with lecturers ( $p=0.032$ ) and change in dietary habits ( $p=0.027$ ) where 86.6% had missed meals. The coping

strategies were being positive (88.1%), getting advice (75.6%), listening to music (77%), finding comfort in religious activities (77.4%) and getting emotional support (77.9%). Of avoidant strategies, keeping feelings to one's self (54.5%) were common, while a proportion indulged in alcohol consumption (8.7%), smoking tobacco (7.3%) and substance abuse (7.6%).

**Conclusion:** BOS among medical students is seen and some groups are more vulnerable. Year of study, performance at examination, missing meals, use of social media and interaction with teachers contributed to the BOS.

**PP: 026**

**Prevalence of Stress and its Associated Factors Among Medical Students of the Faculty of Medicine, Colombo**

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**Introduction and Objectives:** Most studies which assessed the level of stress among medical students (MS), use tools which are not specifically designed for this study group. We aimed to study the prevalence and associated factors of stress among MS using a specific tool, Medical Student Stress Questionnaire (MSSQ).

**Methods:** This cross sectional study was conducted among 603 MS using a self-administered, validated MSSQ, a specific tool with six domains [Academic-Related Stressor (ARS), Interpersonal/Intrapersonal-Related stressor (IRS), Teaching and Learning-Related Stressor (TLRS), Social-Related Stressor (SRS), Drive and Desire-Related Stressor (DRS) and Group activity-Related Stressor (GARS)]. The level of stress is expressed as a mean score (0-4; 0-1: mild, 1.01-2: moderate, 2.01-3: high, 3.01-4: severe). Parametric tests were used for statistical analysis.

**Results:** The mean MSSQ score was 2.13 indicating high level of stress. The domains ARS, IRS and GARS revealed high level of stress (ARS= 2.55, IRS= 2.11, GARS= 2.18) and others domains revealed moderate level of stress(TLRS=1.96, SRS= 1.69,

DRS=1.54). Significantly higher scores were seen among females(p<0.001), those residing away from home(p=0.036), and first and final year MS(p<0.001) Lower mean scores were noted among students with good command in English(p=0.028), active members of student societies(p=0.003) and sports(p<0.001). There was a significant negative correlation between the results of the immediate past exam and MSSQ score (r= -0.151, p<0.001).

**Conclusions:** Psychological stress was high among the MS in the study sample especially in academic, inter/intrapersonal and group-related domains. Females, first and final year students and those who were away from home had higher levels of stress.

**PP: 027**

**Validation of the Medical Students' Stress Questionnaire (MSSQ) in a Cohort of Medical Students from the Faculty of Medicine, Colombo**

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**Introduction and Objectives:** Although studies have been done to assess the levels of stress among medical students, non-specific tools such as the General Health Questionnaire were used. Medical Student Stressor Questionnaire (MSSQ) which is a very specific tool to assess the stress in medical students, has not been validated in the local setting. Therefore, this study was aimed to contextually adapt the above tool and investigate its validity and reliability in the local context.

**Methods:** A total of 603 medical students from Faculty of Medicine, Colombo, in various phases in the undergraduate training participated in the study. This self-administered questionnaire was contextually adapted to the local setting and was approved by subject and language experts. Responses were checked for construct validity (including confirmatory factor analysis to check the factor structure of the scale), sample adequacy and internal consistency. Data were analysed using SPSS data package.

**Results:** The mean age of the sample was 23.3±SD 2.0 years and 258 (42.8%) were males. MSSQ total scale

correlated highly with Public health Questionnaire ( $p < 0.001$ ) Generalised Anxiety Disorder Questionnaire ( $p < 0.001$ ) and General health Questionnaire ( $p < 0.001$ ) indicating a strong concurrent validity. The MSSQ yielded a high internal consistency with a Cronbach's alpha 0.95 indicating good reliability. Confirmatory factor analysis showed that items loaded on 8 factors and Kaiser-Meyer-Olkin measure (0.953) and Bartlett's test of sphericity ( $p < 0.001$ ) showed excellent sample adequacy for the analysis.

**Conclusions:** Contextually adapted MSSQ is a valid and reliable instrument which can be used in assessment of stress among medical students.

#### PP: 028

##### **Risk Factors and School Absenteeism in Children with Asthma from an Urban Area of Sri Lanka**

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**Introduction and Objectives:** Genetic, epigenetic and environmental factors affect predisposition to asthma. This study assessed the factors associated with poorly and well controlled asthma in children.

**Methods:** An interviewer-administered questionnaire was used to record the socio-demographic data, risk factors and reasons for school absenteeism in 72 children (20 poorly controlled asthmatics, 25 well controlled asthmatics and 27 healthy controls). Anthropometric assessments were done to determine obesity. ESR and FBC were carried out in all children. A prospective cross-sectional survey was carried out among children (5-15 years) presenting to the Professorial Paediatric Unit of Lady Ridgeway Hospital. Socio-demographic data, risk factors, school absenteeism in 72 children (20 poorly controlled and 25 well controlled asthmatics and 27 healthy controls) were assessed using an interviewer-administered questionnaire. Anthropometric assessments were done to determine the nutritional status. ESR and FBC were carried out in all children.

**Results:** Having one parent with asthma ( $p < 0.001$ ), presence of allergies to pollen ( $p = 0.014$ ), animal dander ( $p = 0.022$ ) or dust ( $p < 0.001$ ), exposure to air pollution ( $p = 0.014$ ) and acquiring respiratory tract infections in early life ( $p = 0.035$ ) showed a

significant association in children with asthma compared to healthy controls. There was a significant difference in the incidence of allergic rhinitis and sleep disturbance between the well-controlled asthma group and the poorly controlled group ( $p = 0.029$ ,  $p = 0.053$ ). The mean number of days, absent due to asthma was 2.44 in the poorly controlled group and 0.92 days in the well-controlled group ( $p = 0.006$ ). There was a significant association between level of asthma control and eosinophilia ( $p < 0.05$ ).

**Conclusions:** Considering the burden of asthma in Sri Lanka adequate public health measures have the potential to improve the health of children and thus improve school attendance.

#### PP: 029

##### **Study of Mental Health, Anxiety and Depression among Medical Students of the Faculty of Medicine, Colombo**

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**Introduction:** This study was aimed to assess the mental health and wellbeing among medical students of Faculty of Medicine, Colombo and identify associated factors.

**Method:** A cross sectional survey was conducted among 603 students randomly selected from all batches using the self-administered, validated, screening questionnaires to assess general mental health (12-item General Health Questionnaire (GHQ-12)), depression (Patient Health Questionnaire (PHQ-9)) and anxiety (General Anxiety Disorder (GAD-7)). Likert scoring was used and parametric tests were used for statistical analysis.

**Results:** The mean age of the sample was  $23.3 \pm SD 2.0$  years and 258 (42.8%) were males. The mean GHQ-12 score was  $17.17 \pm SD 7.9$  and 69.3% ( $n = 418$ ) of the students scored more than 12 which is defined as the cutoff point. The mean PHQ score was  $9.13 \pm SD 5.74$  and 78.1% ( $n = 471$ ) students showed mild or greater level of depression (mild: 40.6%,  $n = 245$ ; moderate: 19.3%,  $n = 116$ ; moderately severe: 11.7%,  $n = 71$ ; severe: 6.5%,  $n = 39$ ). The mean

GAD-7 score was  $7.359 \pm SD=5.084$  and 61.4% (n=370) of the students had at least mild anxiety (mild:38.5%,n=232; moderate:13.9%,n=84; severe:9%,n=54). Significantly higher scores were associated with female sex (GHQ-12:p=0.002,GAD-7:p=0.033), perception of poor command in English (GHQ12:p=0.001,PHQ-9:p=0.032,GAD-7;p=0.03) and low family income(GHQ-12:p=0.032). Significant negative correlation was demonstrated between the immediate past examination results and the mean scores (GHQ-12:r= -0.228 ,p<0.001, PHQ-9: r = -.240 and p<0.001 and GAD-7: r = -0.133, r=0.001).

**Conclusions:** In this study, the validated screening questionnaires revealed moderate to severe anxiety and depression in a considerable proportion of students. Female sex, perception of poor command in English, low family income and low immediate examination results were associated with higher scores.

#### PP: 030

##### **The Relationship Between Learning Styles and Academic Performance among BSc. Nursing Undergraduates in a Sri Lankan Defence University**

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**Introduction and Objectives:** Learning Styles are considered as a key determinant of academic performance among undergraduates. This study aimed to determine the correlation between learning styles and academic performance among BSc. Nursing Undergraduates in a Sri Lankan Defence University.

**Methods:** A descriptive correlational study was conducted among BSc. Nursing Undergraduates of four academic years in a defence university. The Honey and Mumford questionnaire and Semester Grade Point Average (SGPA) were used to assess the learning styles and academic performance, respectively. The Pearson Correlation was used to evaluate the correlation between learning styles and Academic Performance. One-way ANOVA was used to assess the mean differences of SGPA and learning styles.

**Results:** The response rate of the participants was 69.6% (n=126), and the mean( $\pm$ SD) age of the participants was  $23.65(\pm 3.82)$  years. When

considering the mean( $\pm$ SD) values of learning styles, reflector scored the highest ( $7.93 \pm 1.57$ ), and Activist scored the lowest ( $6.16 \pm 1.61$ ). The Activist (p=0.002, r = -0.356), and Theorist (p=0.048, r = -0.234) had negative significant correlations with SPGA. There was no significant difference in mean SGPA among the four batches(p=0.095). Activist (p=0.004), Theorist (p=0.34) and Reflector(p=0.03) had significant mean differences among the four batches.

**Conclusions:** SPGA had significant negative correlations with Activist and Theorist learning styles.

#### PP: 031

##### **Implementation and Evaluation of an Electronic Case Management System for the Anti-Malaria Campaign**

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**Introduction and objectives:** A web-based system was essential to ensure proper follow up, reactive case detection and vector surveillance on reporting a malaria case. The objective of this study was to improve key areas in the electronic information system that was developed using district health information software 2 so as to replace the paper-based information system is used for monitoring malaria in Sri Lanka.

**Methods:** The web based system was tested along with focus group discussions. Feed back enabled further customization of the product. Following training the system was implemented island wide. Post-implementation evaluation was carried out by structured interviews supplemented by a self administered questionnaire.

**Results:** Following the test run, key areas which required further customization were modified. Thereafter, the previous paper-based surveillance system was replaced with the new web-based system. Following implementation, usage among participants was 100%. Overall, user satisfaction was high among the participants (83%). Most participants strongly disagreed (13.6%) or were neutral (36.4%) with the decision making support for case management offered by digitalization of the malaria case information system. All participants indicated that the system quality and the quality of information collected using

electronic information system were higher than the previous paper-based information system.

**Conclusion:** The electronic case based malaria recording and surveillance system has successfully replaced the paper based system island-wide. All malaria cases being reported since January 2019, have been entered into this system enabling real time data analysis. The system also enables GIS mapping of confirmed malarial cases.

**PP: 032**

**Pattern of Occlusive Arterial Disease in Patients Presenting to a Single Vascular Unit, a Cohort Study**

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**Introduction:** In Sri Lanka many patients with occlusive arterial disease (OAD) disease undergo revascularization. The pattern of OAD vary with the underlying risk factors but this was not described earlier in Sri Lanka. This study describes the computed tomographic angiography (CTA) pattern of OAD among Sri Lankan patients.

**Methods:** This study was done at the vascular unit of Teaching Hospital Anuradhapura. Patients with critical limb ischemia (ulcer, gangrene, rest pain) and disabling claudication were included. Data on patient demography, comorbid diseases the pattern of arterial occlusion were analysed.

**Results:** 100 patients with 81 (81%) males were included. Mean age was 67.6 years (53-83). 60 had ulcers, 25 gangrene, 10 rest pain and 5 had disabling claudication. 63 (63%) were smokers. diabetes mellitus, hypertension, ischemic heart disease, heart failure and chronic kidney disease were present in 65 (65%), 47, 25, 11 and 13 respectively. Distal vascular disease (anterior tibial- AT - 55 and posterior tibial - PT - 44) was present in 65 (65%). Iliac, common femoral (CFA), superficial femoral (SFA) disease were present in 15 (15%), 13 (13%) and 44(44%) respectively. 28 (28%) had isolated distal arterial disease. distal disease was not associated with diabetes mellitus ( $p = 0.3944$ ).

**Conclusion:** Distal occlusive arterial disease is the commonest followed by femoral disease. This study does not show an association between diabetes mellitus and the distal disease, contrary to the popular belief. Further countrywide studies

with larger study population are needed to come to a final conclusion.

**PP: 033**

**Jackstone in the Kidney: a Case Report of an Unusual Calculus**

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**Introduction:** Jackstones are stones in the urinary tract that have the characteristic appearance resembling six-pointed toy jacks. They are nearly always reported to occur in the urinary bladder and the occurrence in less capacious renal pelvis is unusual.

**Methods:** We report a solitary, typical jackstone in the renal pelvis without significant outflow obstruction that was successfully treated with retrograde intrarenal surgery followed by extracorporeal shockwave lithotripsy.

**Case Presentation:** A 63-year-old woman with diabetes presented with painless intermittent visible haematuria of 4 months duration with no history of flank pain, fever or vomiting. Clinical examination was unremarkable. X-ray KUB showed a typical jackstone in the right kidney. Non-contrast computerised tomography KUB confirmed the presence of jackstone in the right renal pelvis with mild hydronephrosis and no proximal hydroureter. The stone size was 2.4 cm x 2.3 cm and the stone density was 1355 Hounsfield units. A 99m Technetium diuretic renography ruled out significant obstruction with a differential function of 45% in the right kidney. She underwent cystoscopy which excluded bladder pathology accounting for visible haematuria. Right retrograde intrarenal surgery and lasertripsy completely fragmented the jackstone in the kidney. A retrograde JJ stent was placed and extracorporeal shockwave lithotripsy rendered her stone-free. She had an unremarkable recovery.

**Conclusion:** This highlights the complex pathophysiological mechanisms in stone formation within the urinary system which needs to be further studied. It is important to recognize the characteristic shape of the renal calculi on radiological investigation in the diagnosis of the jackstones.

**PP: 034**

**Lower Limb Arterial Spasm following Trauma: a Common and an Important Cause for Diagnostic Dilemma**

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**Introduction:** Spasm of arteries, following trauma is a diagnostic dilemma. This study presents a series of lower limb arterial spasms causing transient distal ischemia following trauma.

**Methods:** This is a prospective study of patients admitted to the National hospital of Sri Lanka Colombo from October 2019 to February 2020. The arterial spasm was diagnosed if the pulse was absent or of low volume in the injured limb and (1) The pulse reappeared after a period of observation or (2) Angiography demonstration of in line flow or (3) Visual confirmation of spasm on exploration. Confirmed arterial injuries (e.g. laceration, contusion, etc.) and mangled limbs were excluded. All who had injuries to the proximal Tibia and above, underwent angiographic confirmation of intact arteries.

**Results:** 18 patients with arterial spasm were included. 16 (88.9%) were males. Median age was 27.5 years (13-70). The causes of injuries were road traffic accidents in 17 (94.4%) and iatrogenic in one. There were 9 (50%) tibial, 5 (27.8%) popliteal, 2 femoral and 2 iliac artery spasms. All had fractures or joint injuries or underwent joint intervention. 3 (16.7%) patients underwent exploration and Fogarty dilatation of the arteries. 15 (83.3%) underwent only fasciotomy. In all patients the distal pulses appeared following a period of observation or after surgical exploration.

**Conclusions:** This study shows that young males are prone to develop spasms following trauma especially in tibial and popliteal arteries. Excluding obvious vascular injuries and confirmation of spasm with more angiographies, will help to avoid unnecessary surgical explorations.

**PP: 035**

**Study of Outpatient Department Surgical Unit Services at the Lady Ridgeway Hospital for Children, Colombo**

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**Introduction and Objectives:** Prospective analysis of number of new clinic attendees, surgeries done under GA and clinic procedures at OPD Surgical Unit (OPDSU) Lady Ridgeway Hospital for Children from 2014.01.01-2017.12.31 performed. Outcomes were discussed monthly with team members intending to improve quality. OPDSU composed of Clinic (OPDSC) functioning Monday-Thursday 8am-12noon and, Day Surgery Unit (DSU) managing post-operative patients operated on Friday 10am-2pm and Saturday 8am-12noon. Procedures not requiring GA were performed at OPDSC.

**Method:** Data collected prospectively from author's operations log book and clinic register.

**Results:** Mean number of new clinic attendees per month with range within parenthesis; 2014:408.3 (331-498), 2015:381.8 (305-458), 2016:400.8 (305-484) and 2017:412.2 (376-485). Mean number of clinic sessions per month; 2014:16.2, 2015:16.3, 2016:16.2 and 2017:16. Mean number of new clinic attendees per clinic session; 2014:25.3, 2015:23.4, 2016:25 and 2017:25.6. Mean number of surgeries per month; 2014:67.5, 2015:68.9, 2016:67.1 and 2017:52.7. Mean number of theatre sessions per month; 2014:8.2, 2015:8.8, 2016:8 and 2017:7.8. Mean number of surgeries per theatre session; 2014:8.2, 2015:7.8, 2016:8.4 and 2017:6.8.

Clinic procedures included: wound dressing, suture removal, neuropathic bladder/bowel management and surgeries done under local anaesthesia. Mean number of procedures per month: 2015:61.6, 2016:55 and 2017:51.3 (recording commenced in 2015). Mean number of procedures per clinic session: 2015:3.8, 2016:3.4 and 2017:3.2.

**Conclusions:** Mean number of data per session over the years ranged as; new clinic attendees: 23.4-25.6, number of surgeries: 6.8-8.4, number of clinic procedures: 3.2-3.8. During study period; clinic and theatre facilities, number of staff and, range of surgeries remained unchanged. Factors that changed were; varying anaesthesia time depending on anaesthetic doctors affecting number of surgeries per session and, establishing new surgical unit in May 2016 resulting in patient redistribution.

**PP: 036**

**Lower Limb Vascular Injuries - a Single Unit Experience in a Tertiary Centre**

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**Introduction:** Lower limb vascular injury (LLVI) is on the rise due to increase in road traffic accidents (RTA). We present a series of LLVI presenting to a single vascular and transplant unit at the National hospital of Sri Lanka Colombo.

**Methodology:** This prospective study was done from October 2019 to February 2020. Patients presenting with lower limb (LL) injuries and absent distal pulses were included. Data on demographics, mode of injury, ischemic time, and artery injured, intervention and outcome were collected. Non-viable and mangled limbs were excluded.

**Results:** 31 patients were included. 26 were (83.9%) males. Mean age was 37.2 years (13-79). Mean ischemic time (IT) was 8.5 (5-24) hours. 23 (74.2%) were due to RTA and 5 (16.1%) were iatrogenic injuries. 25 of 26 non iatrogenic injury patients had associated fractures or dislocations. Popliteal artery was the common vessel involved (10 / 32.2 %). 12 (38.7%) had either contusion or laceration and 18 (58.1%) had spasm. 6 of 10 patients who underwent vascular intervention underwent reverse saphenous vein graft repair, end to end anastomosis was done in 2. All limbs included in this series were salvaged.

**Conclusion:** RTA is the common case for LLVI and is expected to rise. Mean IT was 8.5 hours. This is more than the “golden 6 hours” and this study shows that such limbs can be salvaged provided they are viable and not mangled. Spasm results in significant increase in work load (58.1%). Performing more angiographies would prevent unnecessary interventions in these patients.

**PP: 037**

**Endoscopic Ultrasound Guided Biliary Drainage in Patients with Inoperable Malignant Biliary Obstruction and Failed ERCP: a Study to Assess its Efficacy and Complications**

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**Introduction:** Endoscopic ultrasound (EUS) is increasingly used to drain obstructed biliary tracts in patient with failed ERCP. Biliary tract is drained to the stomach (Hepatico-gastrostomy, HG) or

duodenum (Choledoco-duodenostomy, CD) using a self-expandable metal stent (SEMS). This is the first such study carried out in Sri Lanka.

**Method:** Five patients were referred for EUS guided biliary drainage (EUS-BD) from January 2019 to February 2020. Linear echo endoscope was used to visualize the biliary tree, puncture with a needle, create a tract and place a SEMS under fluoroscopy guidance to create an entero-biliary fistula.

**Results:** Indications for the procedure were obstructive jaundice after failed ERCP due to failed biliary cannulation(3/5) or distorted D1/D2 junction(2/5). CD was performed in patients with distal bile duct obstruction (ie Pancreatic cancer) and HG in proximal bile duct/hilar obstruction (ie Hilar cholangio-carcinoma). In all patients the EUS-BD was successfully performed. 1/5 patients died on post procedure D1 of Myocardial infarction. All other patients were followed up for at least eight weeks with 50% bilirubin reduction seen within 2 weeks. Two patients were lost to follow up after eight weeks. The other two had their bilirubin dropped to near normal at eight weeks. All patients developed cholangitis immediately after the procedure which was successfully treated with antibiotics and discharged within a week. 1/5(20%) developed a bilioma at the fistula tract which needed readmission and antibiotics.

**Conclusion:** EUS-BD is successful in relieving malignant obstructive jaundice in patients with failed ERCP and has minimal complications in experienced hands.

**PP: 038**

**Developing a Wound Dressing Based on Human Amniotic Membrane: a Pilot Study**

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**Introduction and Objectives:** Human Amniotic membrane (HAM) is composed of structural collagen and Extracellular matrix, biologically active cells and a large number of regenerative molecules. HAM embraces as a natural wound dressing in ophthalmology, burnt wounds and chronic non-healing wounds. Therefore, the study aimed to develop a method to increase the rate of wound healing using HAM.

**Methods:** An observational pilot study and replication study was conducted. Fresh, cleaned HAM obtained from consenting mothers (negative for HIV and Hepatitis B) undergoing cesarean section were stored at 4°C in glass bottles containing saline until application on wounds within 48 hours. HAM was applied to wounds occurred as a complication of Diabetes Mellitus, ischemia, venous insufficiency in 3 different ways; 1. Twelve instances without attention to the surface -epithelial or stromal, 2. In three, the epithelial surface was applied without separating it from the Chorion, 3. In four, the stromal surface of the Amnion was directly applied to the wound.

**Results:** Nineteen ulcers were studied. Mean age of the patients was 63 years(SD±9.6). In group 1, mean percentage of 63.25 (SD±46.78) decrease in the wound area showed. In group 2, mean percentage decrease of 16.85(SD±19.58) and group 3, 57.66(SD±82.90) mean percentage decrease observed. Mean time duration taken to heal was 38.5 days (SD±24.133). Formation of a dry scab was observed when a wound closed with Amnion.

**Conclusion:** This study confirms the facts that HAM provides better outcomes when applied in chronic wounds and the application of the Stromal surface provides better results than that of the epithelial surface.

**PP: 039**

**Squamous Cell Carcinoma of the Uterine Cervix Metastasising to Bilateral Cervical Lymph Nodes and Thyroid: a Case Report**

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**Introduction:** Carcinoma of the uterine cervix presenting as metastases to the thyroid and bilateral cervical lymph nodes is a rarity with only a handful of case reported thus far.

**Methods:** We present a patient with cervical cancer presenting with thyroid and bilateral cervical lymph node metastasis.

**Case presentation:** A previously well 56-year-old female presented with multiple neck lumps for 4 months duration. Examination of the neck revealed multiple firm/hard bilateral cervical lymph nodes with a hard thyroid nodule. Further examination of other lymph node groups showed inguinal lymph node enlargement. There were no

abdominal masses however, vaginal examination revealed a hard, unhealthy cervix. Biopsy of the uterine cervix and cervical lymph node and fine needle aspiration cytology of the thyroid gland was performed all revealing a squamous cell carcinoma. Contrast enhanced computed tomography revealed a growth in the uterine cervix with lymph node enlargement in the abdomen, chest and neck with a thyroid nodule. Pan-endoscopy performed to rule out any concurrent cancer of the upper aero digestive tract was negative. The patient was diagnosed of a metastatic cancer of the uterine cervix and started on a combination of palliative chemoradiotherapy following a multidisciplinary team discussion.

**Conclusion:** Cervical carcinoma metastasizing to the thyroid gland is very rare. Thorough clinical assessment and histological analysis is needed to make a definitive diagnosis.

**PP: 040**

**A patient with Multiple Gastrointestinal Carcinoid Tumours presenting with Jejunal Intussusception: a Case Report**

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**Introduction:** Carcinoid tumours are neuroendocrine tumours which arise from the enterochromaffin cells in the gastrointestinal and bronchopulmonary systems. The presentation of multiple gastrointestinal carcinoid with jejunal intussusception is rare and challenging to diagnose.

**Methods:** In this case report, we present an unusual case of multiple gastrointestinal carcinoid tumour presenting with a jejunal intussusception.

**Case Presentation:** A 49-year-old patient with adult onset bronchial asthma presented with pain in the umbilical region for 1 day duration. Physical examination revealed mild abdominal tenderness. Ultrasound scan revealed a small bowel intussusception with the classical target sign. Contrast enhanced computed tomography (CECT) of abdomen revealed a large segment proximal bowel intussusception, with two intra-abdominal masses with prominent arterial enhancement, attached to the proximal mesentery. Emergency exploratory laparotomy was performed. A proximal jejunal intussusception was identified which was easily reducible. There were three benign-looking tumours, two arising from the

proximal small bowel mesentery and a third one arising from the proximal jejunal wall which was the leading point for the intussusception. The tumours were excised with a wide margin and repaired primarily. Histopathological and immunohistochemical analyses confirmed the presence of Grade 1 carcinoid tumour of classic type. After surgery he had an uneventful recovery and was asymptomatic. He was referred to the oncologists for further follow up.

**Conclusion:** The combination of recent-onset asthma and the highly suggestive radiological findings raised the suspicion of a carcinoid tumour. These cases will require urgent surgical intervention with additional chemotherapy for carcinoid syndrome.

**PP: 041**

**Developing a Novel Device for Harvesting Pinch Skin Grafts**

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**Introduction and Objectives:** Pinch Skin Harvesting (PSH) is harvesting the donor site skin by freehand method or by using equipment without a precisely determined depth of tissue. Obtained grafts can be placed on healthy granulation tissue or prepared ulcer bed directly. Therefore, the study is aimed at developing a cost-effective, disposable, and feasible device, which is also suitable to be used at the Out-patient Department (OPD).

**Methods:** The study is composed of 2 phases. Phase I is for developing a prototype of the harvester and conducting a pilot study to evaluate efficacy. Phase II is for conducting a clinical study to evaluate the efficacy of harvested pinch grafts. Phase I was carried out in the current study. In Phase I the 3D structures of the prototypes were designed with Solidworks software, then these parts of the designs were printed using a 3D printer. Next, parts were assembled to build up the prototypes. Each prototype was tested upon pigskin.

**Results:** Four prototypes were developed each prototype was a progression of the previous prototype. With the results obtained from trying upon the pigskin, 5<sup>th</sup> prototype was developed from the identified gross adjustments and dimensions. Thus an ideal mechanism to harvest and collect the harvested pinch skin particles were identified.

**Conclusion:** Gross adjustments and mechanism of harvesting was identified. Fine adjustments for the prototype will be done and the microscopic structure of pinch skin grafts obtained from the human cadavers will be studied before the Pilot study. Hence, a feasible PSH mechanism to be used at OPD will be developed.

**PP: 042**

**Pattern, Related Conditions and Factors Associated with the Severity of Unintentional Home Injuries among Elderly in the Battaramulla Medical Officer of Health (MOH) Area**

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**Introduction and Objectives:** With increasing elderly population in Sri Lanka, unintentional home injuries amongst elderly population is an emerging public health problem. Such injuries may worsen the quality of life of elders and create a social and economic burden. The objective was to describe the pattern, related conditions and factors associated with the severity of unintentional home injuries among elderly (age 60 years and above).

**Methods:** A community based descriptive cross-sectional study was carried out amongst 510 elderly (aged 60 years and above) with at least one injury in the past three months in Battaramulla MOH area using probability proportionate to population size cluster sampling. Data collected through pre-tested interviewer administered questionnaire (IAQ). Socio-demographic characteristics, types, circumstances, environmental and medical conditions, knowledge and perception on prevention were recorded. Data were analyzed using SPSS 21 and associations were explored with Chi squared test at 5% significance level.

**Results:** Response rate 93.3%(n=476). The most common types: falls (n=299,62.8%), cuts (n=55,11.6%), banging against object (n=48,10.1%); places: kitchen (n=124,26.1%),

garden (n=106,22.3%) and bathroom/toilet (n=48,10.1%); environmental factors: slippery floor (n=188,39.5%) stairs (n=46,9.7%) and poor lighting conditions (n=46,9.7%). One third (n=159,33.4%) had experienced moderate-severe injuries which were significantly (p<0.05) associated with being male (n=97,37.7%), unmarried (n=38,51.4), unavailability of a companion at time of injury (n=20,26.7%), day time of occurrence (n=140,34.9%), having visual/hearing defects (n=31,25.2%). Participants with favorable perception on injury prevention had significantly less moderate-severe injuries compared to those with unfavorable perceptions (p<0.05).

**Conclusion:** Common characteristics and circumstances identified. Awareness on home injury prevention is essential.

#### PP: 043

#### Factors Affecting Overcrowding of the Preliminary Care Unit of District General Hospital, Gampaha, Sri Lanka

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**Introduction and Objectives:** The Preliminary Care Units (PCUs) in state hospitals were expected to provide prompt, quality and comprehensive patient care, reduce unnecessary admissions to wards and reduce the overall cost of care. Patients with acute medical conditions are admitted to PCU. The medical officer at PCU evaluates the patients admitted and starts the treatment. Ideally within 4 hours of stay in PCU the patients should be either discharged or transferred to the relevant ward for further management. The PCU in District General Hospital Gampaha, one of the busiest hospitals in the district, was established in 2001. The study aimed to find out the factors affecting overcrowding of PCU.

**Method:** This was a descriptive cross-sectional study. Desk review of admission book, Bed Head Tickets and record of monthly statistics of PCU was carried out. Two focus group discussions were conducted, with 10 medical officers and 8 nursing officers respectively. Their responses were coded, and thematic analysis was done.

**Results:** The 20 bedded PCU was staffed with 31 MOs and 22 nurses. Total admissions to PCU in

2018 was 72182. Among them 38.96% were discharged, 52.61% were admitted to wards and 0.26% were transferred, 8.06% were missing or left against medical advice and 0.11% died. The top five reasons for overcrowding were, inadequate inpatient capacity, lack of priority channel for laboratory tests, delays in referral to judicial medical officer, insufficient nursing staff and repeated and deliberate insisted self-admissions.

**Conclusions:** Overcrowding of PCU is mainly due to less organized process flow and inadequate resource availability.

#### PP: 045

#### Morbidities amongst the Late Postpartum Mother and Associated Factors

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**Introduction and Objectives:** Mother needs to be free of both physical and psychological morbidities to function in optimum capacity. Even though mothers are routinely assessed at four weeks postpartum, comorbidities do not receive the same attention during late postpartum. This study aimed to assess the physical and psychological morbidities during and within the late postpartum period and their associated factors among mothers in Kalutara District.

**Methods:** A cross-sectional study was conducted among 380 postpartum mothers 6-12 months following a low risk pregnancy and childbirth. They were selected using random systematic sampling whilst attending the polyclinics of Horana and Panadura MOH areas. An interviewer-administered questionnaire was used to collect self-reported morbidities. Prevalence of morbidities was assessed and their associations using Chi square.

**Results:** Majority of the mothers were Sinhalese, aged 21-30 years and unemployed. Amongst them, 77.6% had at least one physical morbidity. Of these, the commonest were chronic lower back pain (49.7%), lack of sexual desire (45%) and painful intercourse (20%). Only 11.1% were screened positive for depression. Undergoing caesarian section was associated with chronic back pain, constipation and lack of sexual desire (p<0.05). Mother being employed was associated with haemorrhoids and dysuria. Postpartum

depression was associated with lack of social support, ethnicity, number of dependents, work hours and maternity leave duration.

**Conclusion:** The prevalence of morbidities was substantial amongst mothers in late postpartum. These were determined by caesarean delivery and lack of social support. Expanding routine assessments of mothers to late postpartum period is highly recommended.

**PP: 046**

**Violence Seen on Facebook and YouTube Videos: a Qualitative Study**

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**Introduction and Objectives:** Social media is popular specially among young adults in Sri Lanka. In the recent past, violent and graphic content have been seen circulating on social media. An observation study was conducted to describe violence published on social media (Facebook and YouTube) in the last three months of 2019.

**Method:** Facebook and YouTube were searched for videos depicting physical, sexual, emotional violence and verbal abuse using Sinhala and English search terms (shoot\*, bomb\* etc.). Duplicate videos were removed and analysed for their content (types of violence, reactions of viewers). Two researchers individually interpreted the videos for their content.

**Results:** The analysis included 94 videos including 27 from Facebook and 67 from YouTube. YouTube had 28 promoting and 26 educational type violent videos while Facebook had 15 and 6 per each type respectively. Physical violence (YouTube=52; Facebook=21) was the most common type of violence seen on both media. Likes (n=5326), haha (n=805) and sad (n=286) were the most prominent reactions observed on Facebook. Videos on both Facebook and YouTube represented violence as newsworthy, entertaining items and depicted of misuse of power or law. Violence was also displayed by v-loggers as experiments and used for publicity and promotion of social media channels. Those who witnessed violence reacted against it only if the recipient was a female.

**Conclusion:** During the 3 months period observed, various types of violent content were shared on

Facebook and YouTube. Physical violence was prominently seen on both media. Violence was used to increase views and potentially as marketing tools for commercial interests.

**PP: 047**

**The Impact of Digitalizing the Satellite Laboratory Service (SLS) of Base Hospital Warakapola over Clients' Satisfaction**

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**Introduction:** The satellite laboratory service (SLS) of Base Hospital Warakapola (BHW) aimed to offer laboratory facilities to clients of eight Primary Level Institutions (PLIs) to support curative and preventive health services. PLIs could send blood and urine samples to BHW for selected basic laboratory tests. A transporter from BHW brought samples from each PLI and delivered the reports on scheduled days. Digitalization of SLS had following components; (I) Providing digital infrastructure to BHW and PLIs, (II) Staff training and supervision, (III) Initiation of emailing the reports to PLIs, password protected. The study aimed to assess the impact of digitalizing SLS over clients' satisfaction.

**Methods:** The satisfaction of clients was surveyed pre and post intervention with a three months gap between two phases. Z test for proportions was used to test the statistical significance and p value <0.05 was considered as level of significance. The clients were selected from each PLI proportionate to the number of investigations sent from each PLI in a selected quarter of the year to make the total sample of 400. An interviewer administered questionnaire with a Likert scale was used to gather data on patients' satisfaction on selected attributes.

**Results:** The improvement in clients' satisfaction with relevance to timely availability of reports was from 85.7% to 94.9% ( $p < .00001$ ) and that of convenience regarding cost and time spent was improved from 79.1% to 92.2% ( $p < .00001$ ) and both were statistically significant. But clients' satisfaction on trustworthiness of the service improved from 98.2% to 98.5% ( $p = 0.75656$ ) was not significantly changed.

**Conclusion:** Digitalizing of SLS had a positive impact on clients' satisfaction.

**PP: 048**

**Bypassing Primary Health Care Institutions: a Case Study from Sri Lanka**

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**Introduction and Objectives:** Bypassing local primary health care facilities and attending tertiary hospitals located far away from their residence is a major identified problem in many countries including Sri Lanka which had led to underutilization of primary health care facilities as well as over utilization of tertiary healthcare facilities. Our objective was to determine reasons for bypassing and not bypassing government primary health care institutes in patients residing within 1km radius from the maligawatta divisional hospital and socio-demographic characteristics of those patients.

**Methods:** A cross sectional descriptive study was conducted at a referral and a primary health care facility among 120 patients, where each group consisted of 60 patients. Data were collected using an interviewer administered questionnaire which included socio-demographic factors, reasons for bypassing and not bypassing.

**Results:** Majority of females [n=39, 65%] tend to bypass local hospitals compared to males [n=21, 35%] which was the only statistically significant socio demographic characteristic. Among the 14 reasons we assessed for bypassing, only five were shown to be significant. Out of 5 significant reasons 4 of these were reasons to choose hospital in non-bypassed population, namely convenience to reach hospital, hospital being more close to home, satisfaction with the availability of seating facilities and staff service in previous visits. Only significant reason to choose the hospital in bypassed population was availability of basic investigation facilities.

**Conclusions:** We found that phenomenon of bypassing is prevalent even in urban settings and contributory factors are diverse. In order to address bypassing and optimizing resource utilization urgent attention is needed in streamlining the referral system.

**PP: 049**

**Assessment of Drug Dispensing Practices at the Outdoor Pharmacy of Base Hospital Tangalle**

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**Introduction and Objectives:** Drug Dispensing Practices includes all activities that occur between the prescription or request for medicine that is presented to the pharmacy up to the time the medicines or other prescribed items are issued to the patient. Outdoor pharmacy of Base Hospital, Tangalle dispenses drugs to approximately 800 patients daily from both the outpatient department and clinics. This study aimed to assess drug dispensing practices at outdoor pharmacy.

**Methods:** We used a pretested validated direct observational checklist based on WHO/INRUD core and complementary drug use indicators, Malaysian good dispensing practice guidelines and Australian dispensing guidelines by trained pre intern medical graduates and principal investigator at all counters. Study observed drug dispensing practices of 404 patients selected by systematic random sampling after stratification according to the OPD and Clinic setting.

**Results:** Overall response rate was 91.8%. Average dispensing time was 2 minutes. Proportion of prescriptions validated was 188/371 (50.67%). Among the 371 observed drug dispensing episodes, all drugs were dispensed in 222 (59.83%), dispensed drugs were adequately labelled in 211 (56.87%), dispensed drugs were adequately packed in 221 (59.56%) and patients were provided minimum required information on medicines at the counter in 207 (55.79%) episodes. Dispensing errors, a discrepancy between the prescription and the dispensed medicine to the patient, were observed in four prescriptions among the 371 (0.01%).

**Conclusions:** Over 50% of patients received all drugs prescribed with adequate packing, labeling and minimum required information at the counter. Adoption of institution specific strategies would improve the patient validation, drug labelling, packing and provision of required information on medicines resulting improved drug dispensing practices.

**PP : 050****Knowledge on Epilepsy and its Associated Factors among Parents of Children Attending Epilepsy Clinics at the Premier Paediatric Hospital in Sri Lanka**

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**Introduction and Objectives:** Parents play a major role in the management of a child with epilepsy. Their knowledge on essential elements of epilepsy would influence the compliance to the management strategies as well as the satisfaction of care of the child's management. The objectives were to describe the knowledge on epilepsy and its associated factors among parents of children attending epilepsy clinics at the Lady Ridgeway Hospital (LRH) for children.

**Methods:** A descriptive cross-sectional study was done at the epilepsy clinic of LRH. Data was collected from 631 parents with male(Father): female (Mother) ratio of 1:9. Duration from March 2018 to January 2019. A judgmentally-validated interviewer-administered questionnaire was utilized by two trained medical officers in English or Sinhalese language which is convenient for the child's parent. After giving clinic numbers the odd clinic number was taken for the research. Ten equally weighted questions were used in getting a total knowledge score out of 100. The associations of knowledge were evaluated with Spearman correlation-coefficient and Mann-Whitney-U test.

**Results:** The median Inter Quartile Range (IQR) age of the parents was 37 (31 to 42) years. The highest education level of the majority (51.3%) was up to the GCE ordinary level whereas 201 (31.9%) had studied up to the GCE Advanced level and 15 (2.4%) had had tertiary education. The monthly income of the majority (52.1%) was between Rs 20000-40000. The most poorly-answered three questions were based on the domains of; IQ of epilepsy children (only 26.9% were correct), side of turning a child with an epileptic convulsion (16.6% got correct) and on the non-essential usage of anti-pyretic drugs in the prevention of epileptic seizure (23.5% were correct). The median (IQR) total knowledge score was 60 (50 to 70). The knowledge score among mothers to fathers ( $p=0.004$ ) and with education level ( $p<0.001$ ) of each parent. The

knowledge with age ( $p=0.462$ ) and with the salary ( $p=0.524$ ) of the parent.

**Conclusions:** There is a significant statistically difference regarding the knowledge on epilepsy among mothers and fathers. There is a statistically significant difference between knowledge with the level of education, but there is no significant statistically difference between level of education and on knowledge on management during an acute epileptic attack. There is no significant association with knowledge of Epilepsy with increasing age nor salary. In general, the knowledge on epilepsy of parents with children with epilepsy must be improved While targeting all parents irrespective of their age, fathers and parents with a lower education level must essentially be included in the interventions of raising awareness on epilepsy.

**PP: 051****Soft Drinks Consumption Practices, Awareness of Ill Effects, Sugar Content of Soft Drinks and the Factors Influencing Soft Drink Consumption amongst Students in the Kotelawala Defence University**

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**Introduction:** Consumption of soft drinks has been increasing worldwide along with its adverse effects. Improving the knowledge of harmful effects and sugar contents of soft drinks will help to curtail the rising health menace. Traffic Light colour coding system is an alarm to consumers.

**Methods:** A cross-sectional descriptive study was conducted among students of eight faculties of General Sir John Kotelawala Defence University (01.05.2019-30.07.2019). A self-administered questionnaire was used to assess knowledge of health issues, consumption, practices and influential factors of soft drinks.

**Results:** There were 166 students (mean age 22+/- 1.5 years, 72.9% were males). Soft drinks were consumed by 138 (84.8 %) students in all disciplines. More than 200 ml soft drinks per week {(19.5% (32) >200ml/day, 47.6% (78) >200ml/week} were consumed by 67.1% students. The strongest reason for soft drinks preference was taste (58%). The absence of other suitable drinks and the unavailability of water were

indicated in 18.5% and 11.7% of students. A 50.3% of students thought it as an essential part of youth, 43% think they are addicted to it and 53.3% noticed increased consumption after entering to the university. Medical students have significant awareness of associated obesity ( $P=0.00$ ), diabetes ( $P=0.02$ ) and colour coding compared to other students ( $P=0.012$ ).

**Conclusion:** Banning of soft drink selling in university premises, provision of safe and free drinking water, educating through social marketing campaigns, imposition of taxes on soft drinks and reducing the sugar content by reformulating the soft drinks will help to mitigate this issue. Further, comparison studies with soft drink consumption and physical status of students will be a more powerful eye opener to the society.

**PP: 052**

**Awareness on Malaria among Public and Healthcare Providers during the Prevention of Re-Introduction Phase in Sri Lanka**

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**Introduction and Objectives:** Prevention of re-introduction/re-establishment of malaria is a challenge for Sri Lanka due to high receptivity and vulnerability. Imported cases are being reported and an introduced case was reported in 2018. The objective of this study was to assess the awareness on malaria among public and healthcare providers which is essential during the prevention of re-introduction/re-establishment phase.

**Methodology:** Two national surveys were conducted among 3454 households and 766 healthcare providers in 2016. Household survey was conducted using a multistage cluster sampling method. Healthcare providers' survey used stratified random sampling and a self-administered questionnaire.

**Results:** The mean awareness score of healthcare providers was 54.7% (SD=10.6). Although 99.1% of healthcare providers (n=759) identified fever as a symptom of malaria, the majority (n=634) had not seen, diagnosed or treated a malaria case during the last 5 years. The mean awareness score of heads of households was 28.6% (SD = 9.03). 74.4% of heads of households (n=2570) had ever seen/heard messages about malaria; 7.2% (n=249) had seen/heard in the past 6 months. The common media of communication were television (n=2714,

78.6%) and mobile phones (n=2242, 64.9%). The majority knew that malaria is spread by a mosquito bite (92.7%, n=3202) and fever (71.8% n=2479) is a symptom of malaria.

**Conclusions:** The majority of healthcare providers have not seen a case of malaria; updates on malaria should be regularly given to suspect malaria in the differential diagnosis of fever. Television and mobile phone technology can be used to increase awareness on malaria among the general public.

**PP: 053**

**Healthcare Seeking Pathway and Perceived Severity on Health Seeking among Antenatal Mothers Admitted to the Anuradhapura Teaching Hospital**

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**Introduction and Objectives:** Sri Lanka, having a strong public-health system in world still face the combat in reducing maternal morbidity. Recognizing the health-seeking pattern of the antenatal mother would be beneficial to understand the impact of situations like the current pandemic on their health. Determining the characteristics of health seeking pattern of the pregnant mother who admitted to antenatal wards of the Anuradhapura teaching hospital.

**Methods:** All pregnant women who were registered in the maternal care programmed from July to September 2019 (Rajarata Pregnancy Cohort) were interviewed by a group of trained interviewers in occasions when they were admitted to Teaching Hospital Anuradhapura during early pregnancy. An interviewer administered questionnaire was used and data on management was extracted using hospital bed head ticket information.

**Results:** Total number of admissions studied during the period of 4 months was 268. The commonest complaint among mothers was per vaginal bleeding which was 24.62% and among

them only 53.06% were self-admissions. Other most common reasons for hospital admissions were identified as fever (10.7%), for monitoring the glycemic control (13.4%) and hyperemesis (11.5%). Out of all mothers who admitted to the hospital 30.7% (n=79) were self-admissions and 64.8% were referred admissions. 26.7% were referred by a specialist and 6.5% were referred by the public health midwives. Whatever the condition, 23% of the mothers admitted only when perceived severity was high.

**Conclusions:** The health seeking pattern reflects the shared care concept as well as high private health care seeking by pregnant women. Situations like the recent pandemic may disrupt morbidity referral.

**PP: 054**

**How do Men who Choose Not to Participate in Healthy Lifestyle Centres Reason About Their Decision?**

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**Introduction and objectives:** In Sri Lanka, both women and men are expected to visit a cost-free population-based cardio-vascular screening programme held at a specific centre called the Healthy Lifestyle Centre (HLC) at their nearest primary health care institution. However, screened male to female ratio in 2016 first quarter was approximately 3:7 portraying that many men choose not to visit HLC compared to their female counterparts. This study explored how men who declined participation in the healthy lifestyle centre reasoned out their choice.

**Methods:** This qualitative study was conducted using constructivist grounded theory in Gampaha and Kalutara districts in Sri Lanka. Three focus group discussions (n= 7) and six interviews from men who actively declined participation in the healthy lifestyle centre were analysed using thematic analysis.

**Results:** Factors related to men's decision not to participate in HLC included masculine perceptions such as male having a lower risk for diseases compared to a female, poor perceived susceptibility due to absence of symptoms, previous negative experiences related to health care services, lack of confidence in the tests conducted at the HLC and barriers due to their

employment as HLC is being conducted in a fixed day and a time.

**Conclusion:** Men's decision not to participate in screening at HLC is linked with individual attitudes and influence by masculinity. The existing male-unfriendly nature of the health-care services also had a significant impact on the decision. Thus, targeted interventions are urgently needed to improve utilization of HLCs by men addressing these identified reasons.

**PP: 055**

**Maternal Anaemia in Anuradhapura and Thalassemia; the Elephant in the Room**

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**Introduction and Objectives:** Anemia in pregnancy remains a major issue in Sri Lanka despite comparatively better pregnancy services. This study reports prevalence, distribution and etiology of maternal anemia in Anuradhapura.

**Method:** First trimester women registered for field antenatal care in Anuradhapura district during third quarter of 2019 were recruited as a part of large cohort study. Their thalassemia status if known was recorded. A full blood count was performed. A sample of women with microcytic anemia with high red cell counts (RCC= $\geq$  5) underwent HPLC. Peripheral blood film was examined in all normochromic, normocytic anemia cases.

**Results:** Of 3082 participants, 15.0% (n=463, CI 13.8 to 16.3) were anemic (Hb < 11g/dl). An intra-district disparity in prevalence was evident (22.6% to 8.8%). Mild (Hb 10.9 - 10g/dl), moderate (Hb 9.9 - 7g/dl) and severe (Hb < 7g/dl) anemia prevalences were 10.5% (n=326), 4.4% (n= 136) and 0.03% (n=1) respectively. Microcytic anemia with high RCC was seen in 19% (n=84) of anemic cases and 34 of 35 HPLCs among them indicated minor hemoglobinopathies. Combining data on already known thalassemia status with the predictions applying the specificity of this algorithm (95.6), at least 89 (19.2%) of anemic first trimester women may have minor hemoglobinopathies. One third of anemia (n=139) was normochromic normocytic. Iron deficiency, megaloblastic changes, mixed deficiency and South East Asian Ovalocytosis was seen in 40%,

12%, 24% and 0.8% of peripheral blood films respectively.

**Conclusion:** Thalassemia trait and nutrient deficiencies not limited to iron deficiency are important etiologies for maternal anemia in Anuradhapura.

**PP: 056**

**High Scores in the Edinburg Postpartum Depression Scale in Early Pregnancy is Not Showing Depression!**

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**Introduction and objectives:** Depression during pregnancy is considered a main public health problem worldwide. Prevalence of depression during the antenatal period is reported as 10-13% globally. The Edinburg Postpartum Depression Scale (EPDS) is the most widely used instrument to evaluate depression in pregnancy. We explored the components of EPDS to understand EPDS scores and its implications in early pregnancy in the Sri Lankan context.

**Methods:** All pregnant women registered with the public health system from July to September, 2019 were invited to be part of this baseline assessment of the Rajarata Pregnancy Cohort Study. Previously validated EPDS was used as a self reported tool. Descriptive and component analysis was carried out using SPSS.

**Results:** Completed EPDS were available for 3233 pregnant women. Mean and median EPDS scored were 6.33(SD4.42) and 7(IQR2-9). The EPDS scores were skewed to the right (.329 SE .042). Scree plots and parallel analysis in all different dimension reduction techniques clearly shows that the EPDS scores could be explained by three factors; "depression", "anxiety" and "anhedonia" explaining 20.6%, 28.0% and 11.8% of total variance. Items number 3,4 and 5 of EPDS which resembles anxiety had the highest communalities in initial extraction and also the effect on final EPDS score and diagnosis of depression. Clinical interviews with all women with high EPDS scores confirmed that the anxiety rather than depressive was the main issue during early pregnancy.

**Conclusion:** High EPDS scores in the Sri Lankan versions of EPDS during pregnancy are primarily due to anxiety symptoms. While it could be used as a mental health assessment tool, interpretation of EPDS should be done with cautions.

**PP: 057**

**Effect of COVID-19 on Routine Healthcare: an Experience of a Tertiary Care Unit**

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**Introduction and Objectives:** The epidemic of COVID-19 has disrupted healthcare systems around the world. We observed several changes in the functioning of wards since the first case was reported on 11th of March 2020. Documenting these changes will help improve coping by hospitals facing future epidemics. The objective was to describe the patterns of services in a tertiary care unit during the COVID-19 epidemic.

**Methods:** Data on admission and services provided was collected from records retrospectively, of the University Medical Unit at the National Hospital of Sri Lanka. Day 1 of the epidemic was considered as 11<sup>th</sup> March 2020. Weekly data was collected from 4<sup>th</sup> March to 12<sup>th</sup> May.

**Results:** The weekly admissions from 4-10<sup>th</sup> March (pre-epidemic week) were: 134 (males) and 131 females). The first week (11-17<sup>th</sup> March) had 180 male admissions (34% increase) and 98 female admission (25% decrease). By 3<sup>rd</sup> week male and female admissions were 40% and 34% respectively of pre-epidemic levels. Ultrasound scans (US) per week fell to 19% of pre-epidemic in males and to 42% in females in weeks 2 to 8. Number of echocardiography in males fell by 77% and of females by 100%. Weekly deaths remained mostly unchanged. During week 1 to week 8, the ratio of US per admission declined from 0.109 to 0.077 (US) and Echocardiograms from 0.045 to 0.017.

**Discussion:** COVID-19 has caused a significant decrease in the number services and in the services provided per person. Measures to

mitigate such disruptions should be considered when planning to meet the challenges of future epidemics.

**PP: 058**

**Unmet Need for Family Planning and Contraceptive Failure: an Experience of a Large Pregnancy Cohort in the Anuradhapura District, Sri Lanka**

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**Introduction and objectives:** In Sri Lanka, recent evidence suggests reduction in contraceptive prevalence and increased rate of induced abortions; thus, in-depth analysis of unmet need (UMN) for family planning and contraceptive failures is timely. This study aimed to describe the prevalence of UMN and contraceptive failures among pregnant women in Anuradhapura district.

**Methods:** A mixed-method study was conducted within a large maternal cohort, Rajarata Pregnancy Cohort (RaPCo), which included pregnant mothers registered in field antenatal clinics in 22 Medical Officer of Health areas in Anuradhapura district. Interviewer-administered questionnaires and focus group discussions were used to collect quantitative and qualitative data.

**Results:** Among 3,404 pregnant women, the prevalence of UMN was 9.6% (n=290). Out of the 914 (26.8%) unplanned pregnancies, 88 (8.8%) were on modern contraceptive methods and the common reasons for getting pregnant were “missed-pills” (n=13), delayed DMPA injection (n=8) and unavailability of condoms (n=8). Contraceptive failure was noted in 31 mothers and 48.4% were on oral contraceptives. Six mothers reported emergency contraceptive failures. Qualitative data from a sub-sample revealed that pregnancy due to contraceptive failure is a distressing experience. Mothers were embarrassed due to inadequate spacing between childbirths. Further, these mothers expressed a negative impact of the pregnancy on household economy. Some mothers have made up their mind to ‘accept’ the pregnancy, while some were contemplating to give the child for adoption.

**Conclusion:** The prevalence of UMN in the pregnancy cohort in Anuradhapura is higher than the national figure. Unplanned pregnancies due to

contraceptive failure are associated with negative health and economical outcomes.

**PP: 059**

**Estimation of Burden and Impact of Unplanned Pregnancies in a Cohort of Pregnant Females in the Anuradhapura District**

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**Introduction and Objectives:** Unplanned pregnancy may show gaps in health systems, social inequity, education access to services and many other public health related issues. We explored the unplanned pregnancies in Anuradhapura to identify the issue related.

**Methods:** Self reported unplanned pregnancies were identified during the Rajarata Pregnancy cohort (RAPCO) base line assessment; a population-based pregnancy cohort from Anuradhapura district. All pregnant women registered with the field midwives in 22 MOH areas during July-September 2019 were recruited for the study and assessed during special baseline assessment clinics.

**Results:** Of the 3404 pregnant women studied, 914 (27.5%) reported that the pregnancy was “unplanned”. However, only 1921 (56.4%) has taken pre conceptional folic acid and 527 (15.5%) participated in pre-pregnancy sessions. Of the unplanned pregnancies 68 (7.4%) were unmarried women and 38 were less than 18 years of age. 20.6% of the women with unplanned pregnancies were not happy about the pregnancy and 9 of them were physically abused after the pregnancy. Significantly higher percentage of women with unplanned pregnancies felt “sad or miserable” and 117(13.6%) had some degree of self-harm ideation. EDPS scores as well as all 10 individual statement scores among this group was significantly high compared to those who reported planned pregnancies.

**Conclusions:** Unplanned pregnancies have a bigger burden and impact than we expected. Interventions are needed to prevent as well as manage unplanned pregnancies in the public health system.

**PP: 060**

**Improving Participation of Clinicians in Hospitals in the Malaria Awareness Programs Conducted During the Prevention of Re-Introduction Phase of Malaria in Sri Lanka**

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**Introduction and Objectives:** There were 356 imported malaria cases reported since the elimination in 2012 and 53 imported malaria patients were reported in 2019. The diagnosis was made after the day five of admission in 25% of patients due to not considering of taking travel history or possibility of Malaria. The clinician training programs must be continued for clinicians of hospitals to maintain zero mortality due to malaria by initiating prompt diagnosis and treatment.

**Methods:** Considering the highest number of cases reported in the previous years and the vulnerability the hospitals secondary and tertiary level were selected to conduct the clinicians training programs. In western province six clinicians programs were conducted in National Hospital of Sri Lanka, Colombo South Teaching Hospital, Colombo North Teaching Hospital, Sri Jayawardhanapura, Kalutara and Negombo General Hospitals and Base Hospital Homagama. In other provinces Teaching Hospital Kandy and Peradeniya, General Hospital Matara and Base Hospital Karawanella were selected to conduct the programs. The participants' attendants were marked during the entrance to the program and requested to stay during the whole program.

**Results:** The total number of participants was 572 in all 10 hospitals. The Consultant and Senior Registrars participation was 8.39%(48). Medical Officers, registrars, House Officers and medical students' participation was 61%(349). Nursing officers' participation was 16.28%(93). And other Medical Laboratory Technicians, Public Health Laboratory technicians' participation was 9.61%(55). The participants who not mentioned their category was 27.

**Conclusions:** It is recommended to increase the participation of consultants and first contact medical officers to take travel history of fever patients and include malaria in their differential diagnosis, to reduce the complications at late stages.

**PP: 061**

**Prevalence of Musculoskeletal Symptoms in Drivers due to Prolonged Work Related Sitting Posture**

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**Introduction and Objectives:** Work-related musculoskeletal disorders (WMSDs) have become extremely common and affect workers in many occupations. WMSDs can lead to musculoskeletal (MSK) symptoms; pain, discomfort and ache. The objective of the study was to assess the relationship between musculoskeletal symptoms and prolonged sitting posture in bus drivers.

**Methods:** A cross sectional comparative study was conducted with 50 drivers(sample) and 50 conductors(control) and was done at Central Bus Stand-Colombo. The study consisted of self-administrated Nordic Musculoskeletal Questionnaire based symptom assessment. Data were analyzed using SPSS software (version 20).

**Results:** More than 50% of drivers(n=50,54%) and conductors(n=50,52%) had symptoms during last 12 months plus 46% from each group had symptoms during last seven days. Highest incidence of symptoms was reported in the back area among drivers and in knee area among conductors. Statistically significant relationships between MSK symptoms(past twelve months) and working years were found in shoulder(p=0.003), elbow(p=0.011) and wrist(p=0.014) among drivers and associations of symptoms(past seven days) and working years, were significant in upper back(p=0.031), lower back(p=0.025), knee(p=0.019) and ankle(p=0.009) among drivers. The relationships between working hours and symptoms(past twelve months), were significant in shoulder(p=0.003) elbow(p=0.004), wrist(p=0.014) among drivers and neck(p=0.018), upper back(p=0.004), lower back(p=0.006) among conductors, presented symptoms(past seven days) were significant in upper back(p=0.014) and lower back(p=0.035) in drivers group.

**Conclusion:** The results showed the extent of developing MSK symptoms in drivers and conductors in different body regions. Findings of this study showed the strong significant relationships between prolonged working duration and MSK symptoms in both drivers and conductors.

**PP: 062**

**Prevalence of Postural Changes in Drivers due to Prolonged Work Related Sitting Posture**

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**Instruction and Objectives:** Prolong work-related postures have become a main reason for changes in proper body posture in workers of many occupations. Prolong sitting may lead to postural changes in head, torso and pelvis areas among drivers.

The objective of the study was to assess the relationship between postural changes and prolonged sitting posture in bus drivers.

**Methods:** A cross sectional comparative study was conducted with 50 drivers (sample) and 50 conductors (control) at Central Bus Stand-Colombo. The study consisted of postural analysis in three body areas, head, torso and pelvis according to two views, antero-posterior-APV and lateral-LV using Posture Zone mobile application (Free Public Version). Data were analyzed using SPSS software (version 20).

**Results:** More than 70% of drivers(n=50,mean age±SD,41.82±5.30) and conductors(n=50,mean age±SD,41.38±5.94) presented markedly high postural changes(more than 1° of deviation) in three body areas. Among drivers postural changes were observed in head(1.00±0.73-APV/ 1.02±0.75-LV), torso(2.03±1.63-APV/1.98±1.36-LV) and pelvis(2.22±1.71-APV/1.60±1.43-LV) and conductors showed changes in head(1.118±0.731-APV/ 1.164±0.808-LV), torso(2.034±1.637-APV/ 2.736±1.401-LV) and pelvis(2.318±1.693-APV/ 1.986±1.264-LV). Both groups showed more postural changes in torso and pelvis than in the head. Relationship between working hours and postural changes in pelvis area in both APV(P=0.041) and LV(P=0.039) among drivers were observed. Significant correlations were found between working years and postural changes among conductors in head(P=0.003) and torso(p=0.046) areas in APV.

**Conclusion:** The results showed extent of developing postural changes among study groups. Findings showed a significant relationship between working time and postural changes in pelvis area among drivers and in head and torso areas in conductors.

**PP: 063**

**Timing of Starting a Family, the Desired Family Size and their Associated Factors among Women attending Antenatal Clinics at the Colombo South Teaching Hospital**

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**Introduction and Objectives:** Identification of client perceptions on fertility is useful in decision making on reproductive health. Present study aimed at describing the timing of starting a family, desired family size and their associated factors among women.

**Methods:** A descriptive cross sectional study was conducted among systematically sampled 327 pregnant women attending antenatal clinics at a government-sector teaching hospital using an interviewer administered questionnaire.

**Results:** The mean desired age for starting a family was 25.2 years (SD=5.08) and desired family size was 2.32 (SD=0.70). Desire for early pregnancy was seen among women with self-employed husbands while pregnancy postponement was seen among highly educated, employed women with long working hours and more siblings (p<0.05). Minor gynecological diseases caused delaying in pregnancies (p<0.05). Preferred family size was 2 for Sinhala and Tamil women and 3 for Muslim women. None of the Muslim women preferred to limit their family to 1 (p<0.05). Women with husbands working in the government sector and with an increased age at marriage and less number of siblings desired more children (p<0.05). History of gynecological surgeries, long term illnesses, and past cesarean sections were associated with a desire for more children (p<0.05).

**Conclusions:** Timing of starting a family and the desired family size were significantly associated with socio-demographic, economic and health related factors.

**PP: 064**

**The Rising Complexity of Multimorbidity in a Middle-Income Country**

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**Introduction and Objectives:** Multimorbidity is an emerging healthcare problem in primary care as well as the secondary health care system. Particularly the low and middle-income countries face limitations in knowledge on aetiology, epidemiology and risk factors for multimorbidity. These limitations have hampered the incorporation of multimorbidity into Sri Lankan healthcare strategies for more integrated models of care. This study aimed to examine the distribution of multimorbidity in relation to age, sex and socio-economic status, as well as to determine comorbid interrelations between physical and mental disorders.

**Methods:** A descriptive cross-sectional study was carried out in a University primary care department and a tertiary care hospital based medical clinic. Data were extracted from the medical records of patients aged of 20 years with at least a single non-communicable disease (NCD) on to a data extraction form.

**Results:** The prevalence of multimorbidity was 63.5% within this sample (n=1600). Nearly, a third had a minimum of two disorders as they reached age range 36-50 years. Five percent of those aged 65 years and over had four or more disorders. Diabetes and hypertension were identified in a quarter, whereas a fifth had diabetes and coronary heart disease. Multiple regression analysis confirmed that as the number of disorders increases, the risk of developing mental disorders increases by 1.47(95% CI = 1.13 – 1.66).

**Conclusion:** Horizontal integration of multidisciplinary teams to manage patients needs to be emphasized. These integrated care models to manage patients with multimorbidity need to be integrated with mental illness as urgent priority.

**PP: 065**

**Screening of High Risk Groups: a Key Strategy in the Prevention of Reintroduction of Malaria to Sri Lanka**

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**Introduction and Objectives:** Parasitological surveillance of Sri Lankans and foreign migrant workers arriving from malaria endemic countries is a key strategy to sustain malaria elimination in Sri Lanka. The objective of this study is to describe the results of active case detection carried out amongst high-risk groups.

**Methods:** Socio-demographic data including travel history was collected from 425 individuals identified as high-risk for acquiring malaria using an interviewer administered questionnaire from January to March 2020. Malaria was diagnosed by microscopy and Rapid Diagnostic Tests (RDT). PCR was done if there was an inconclusive result.

**Results:** Two-hundred-and-twenty-six foreigners and 199 Sri Lankans who had arrived from India (54%), Africa (22%) and other Asian countries (24%) were screened for malaria. The foreigners screened included Indians and Chinese migrant workers (31%), foreign students (13%) and asylum seekers (10%). The Sri Lankans screened were displaced individuals and businessmen (11%) returning from India and gem traders (7%) and Air Force personnel (5%) returning from Africa. A majority screened were males (78%), and excluding the 6.5% who were less than 15 years the rest were between 16-60 years. Two Sri Lankans, who were asymptomatic, tested positive for malaria by RDT. One was diagnosed with Plasmodium falciparum and confirmed by microscopy. The other diagnosed with Plasmodium vivax was negative by microscopy and PCR indicated a false positive with RDT.

**Conclusions:** High-risk group screening is important to diagnose malaria infections which may otherwise be missed, especially if they are asymptomatic. PCR has been useful as a confirmatory test in cases where there are inconclusive results.

**PP: 066**

**Preventing the Threat of Malaria Reintroduction through Military Personnel arriving from Malaria Endemic Countries**

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**Introduction and Objectives:** Security forces personnel arriving in the country following United Nations Peace Keeping Missions continue to pose a threat to sustaining the malaria elimination status in Sri Lanka. The present study characterizes the malaria cases reported in Air Force personnel (AFP) during their period of deployment in the Central African Republic (CAR) and following their return to Sri Lanka and outlines measures to prevent the occurrence of malaria.

**Methods:** Data regarding malaria infections was collected from 110 AFP throughout the period of deployment in CAR for 24 months and following their return to Sri Lanka. A pre-tested questionnaire was used for data collection and focus group discussions were also carried out.

**Results:** Eight malaria infections were reported from this group while in CAR. Two individuals suffered malaria twice. These personnel had to travel out of the central camp frequently. Following their return to Sri Lanka, four new malaria cases, all *Plasmodium ovale* were diagnosed. AFP are routinely screened on arrival at the Airport by the Anti Malaria Campaign (AMC). During this screening two individuals were diagnosed with malaria but were asymptomatic. The other two individuals were negative on screening but presented with fever on a later day.

**Conclusions:** Standby treatment has been recommended if personnel develop fever while on overseas missions. Ensuring adequate quantity of anti-malarials as chemoprophylaxis and consistency in supplying chemoprophylactic drugs is critical as the Anti Malaria Campaign issues drugs only for 6 months. Screening for malaria parasites on arrival will be continued.

**PP: 067**

**Knowledge and Practices of Mothers Regarding Multiple Micronutrient (MMN) Supplementation in the Boralesgamuwa Medical Officer of Health Area, Sri Lanka**

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**Introduction and Objectives:** Micronutrient supplementation (Specially iron and vitamins) has been proposed as an intervention for improving micronutrient intake in children under two years of age by the World Health Organization. We aimed to assess the knowledge and practices of mothers regarding Multiple Micronutrient Supplementation (MMN) in Boralesgamuwa Medical Officer of Health (MOH) area, Sri Lanka.

**Methods:** A descriptive cross-sectional study was conducted among purposively selected 522 mothers who were having children between 12 ≤ months to ≤24 months of age in Boralesgamuwa MOH area, using an interviewer-administered questionnaire.

**Results:** From the total sample, only 406 mothers responded. Majority of them (54.7%) were 20-30 years of age, Sinhalese (92.4%), Buddhist (85%), and 404 were married. There were 182 (44.8%) mothers with secondary education and 193 (47.5%) were unemployed housewives. Monthly income of 35,000 rupees or less seen with 133 (32.8%) mothers. Most mothers (n=317; 78.1%) had administered MMN supplements given by the MOH to their children with 90.9% (n=288) positive response from their families. Mothers with good, fair and poor knowledge were 5.9% (n=24), 70% (n=284) and 24.1% (n=98) respectively with a mean knowledge score of 6.66 ± 1.864 (within the range of 0-14). Mothers with good and poor practice were 87.4% (n=277) and 12.6% (n=40) respectively with a mean practice score of 8.83 ± 1.654 (within the range of 0-13). Barriers seen when obtaining (n=163; 51.4%), preparing (n=236; 74.4%) and administering (n=226; 71.3%) MMN supplements. There were statistically significant associations between knowledge and monthly income (P=0.008), practice and religion (P=0.001),

and practice and occupation(P=0.001). A few mothers(n=37;11.3%) had noticed vomiting and dark discoloration of stool as adverse effects of MMN supplements.

**Conclusion:** Mothers had a fair knowledge and good practice level in MMN supplementation and had some barriers as well.

**PP: 068**

**Knowledge, Attitudes and Practices on Dengue and its Control Among Grade 9 Students in the Horana Educational Zone**

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**Introduction and Objectives:** Dengue affects 390 million people worldwide, 70% of whom live in Asia. It is hyper-endemic in Sri Lanka, with ≈30% of affected patients being of school-going age. Many curriculum and behavioural interventions have been done in schools to improve the knowledge, attitudes and practices on dengue among schoolchildren to empower them to help prevent and control dengue. The objective was to describe the knowledge, attitudes and practices on dengue and its control among grade 9 government schoolchildren in Horana Educational Zone in the District of Kalutara.

**Methods:** A descriptive cross-sectional study was conducted among grade 9 students in Horana Educational Zone. The calculated sample size was 768. The subjects were selected using multi-stage cluster sampling technique with probability proportionate to population size. A pre-tested, structured, self administered questionnaire with face and content validity was used for assessment. The scoring system was prepared after weighting of the questionnaire by five independent experts in the field.

**Results:** The majority (85.7%; 95%CI= 83.1-88.1) of the schoolchildren demonstrated adequate knowledge on Dengue and its control. Further, the overall attitude on Dengue control in relation to the burden, human behaviour and source reduction was good among 85.7% (95%CI=83.2-88.0) of the participants. Overall reported practice was good among 86.2% (CI=83.6-88.5) with a good understanding of the dynamics of Dengue mosquito vectors.

**Conclusions:** Grade 9 government school children in Horana Educational Zone had adequate knowledge on Dengue and Dengue control, good attitude towards Dengue control, and good practice on prevention and control of Dengue.

**PP: 069**

**Factors Associated with Selected Maternal and Foetal Outcomes Among Mothers with Gestational Diabetes Mellitus, Delivering at Two Selected Tertiary Care Maternity Hospitals in Colombo**

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**Introduction and Objectives:** Gestational diabetes is a cause for many maternal and fetal complications. This study aimed to describe the factors associated with selected maternal and fetal/neonatal outcomes among mothers with gestational diabetes mellitus, delivering at two selected, tertiary care maternity hospitals in Colombo

**Methods:** A descriptive cross-sectional study was conducted among 265 mothers diagnosed with gestational diabetes mellitus, who delivered at De Zoysa Hospital for Women and Castle Street Hospital for Women, Colombo, recruited through consecutive sampling. An interviewer-administered questionnaire and a data extraction sheet were administered. Factors associated with selected maternal and fetal/neonatal outcomes were analyzed using Chi-square test and odds ratios.

**Results:** Cesarean section (37.0%, n=98), placenta previa (14.3%, n=38) and pregnancy induced hypertension (8.7%, n=23) were common maternal complications. Polyhydramnios (29.4%, n=78), macrosomia (16.6%, n=44), respiratory distress (16.6%, n=44) and neonatal jaundice (40.0%, n=106) were common foetal/neonatal complications. All complications were significantly associated with poor glycemic control. Increased maternal age (OR=2.48;95%CI=1.00-6.28) and excess weight gain in pregnancy (OR=2.18;95%CI=1.21-3.92) were associated with one or more maternal complications. Having one or more foetal/neonatal complications was significantly associated with poor compliance, with

medical nutrition therapy (OR=1.81;95%CI=1.62-2.03), with exercises (OR=1.72;95%CI=1.05-2.83), and with drugs (OR=2.63;95%CI=1.07-6.47), poor attendance to field clinics (OR=2.01;95%CI=1.20-3.34), poor attendance to educational sessions (OR=2.30;95%CI=1.35-3.91) and excess weight gain in pregnancy (OR=5.33;95%CI=2.94-9.66).

**Conclusions:** Poor glycemic control, poor utilization of health services and poor compliance were associated with both maternal and foetal/neonatal complications. Pregnant mothers should access care, comply with management and achieve ideal glycemic control to prevent these complications.

**PP: 070**

**Factors Associated with the Utilization of the Dengue School Card for the School Based Dengue Control Programme among Grade 9 Students in the Horana Educational Zone**

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**Introduction:** Dengue is hyperendemic in Sri Lanka. Dengue incidence (surveillance) and premise inspection (entomology) data show that schoolchildren are at excess risk. An intersectoral collaboration programme between Health and Education Ministries was initiated to combat this risk. It includes weekly school premise inspection, curriculum based awareness-raising activities and the dengue school card programme for premise inspection at home.

**Objectives:** The objective of the study was to describe the factors associated with the utilization of Dengue school card among grade 9 students in government schools in Horana Education Zone of the District of Kalutara.

**Methods:** A descriptive cross-sectional study was conducted among grade 9 students in Horana Educational Zone. The calculated sample size was 768. The subjects were selected using multi-stage cluster sampling technique. A pre-tested, self administered questionnaire was used to collect socio-demographic data and Knowledge, Attitude and Practice levels. The utilization of the dengue school card was objectively assessed individually for correct use.

**Results:** Among 768 study participants only 341 had brought the cards with 179 (52.5%) having good utilization. There is a statistically significant association with the being a student of type 2 school (p=0.003), the level of knowledge (p<0.001) and the reported practice (p=0.003) on Dengue and Dengue control. The gender of the participant, education or employment of parents, socio-economic level and previous experience of dengue and attitude regarding dengue are not significant associations.

**Conclusions:** Utilization of the DSC among students was significantly associated with attending a Type 2 school (p=0.003) and levels of knowledge (p<0.001) and practices (p=0.003) regarding Dengue.

**PP: 071**

**Body Weight Perception among Treatment Seeking Obese Young Adults in the Colombo District**

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**Introduction and Objectives:** Accurate body weight perception is important in weight reduction and the current study assessed the body weight perception of a selected group of obese young adults.

**Methods:** This descriptive cross-sectional study was conducted among 18-35 year olds (n=261), BMI ≥ 25kgm<sup>2</sup>, attending an out-patient nutrition clinic of a teaching hospital in the Colombo district. An interviewer administered questionnaire validated elsewhere was used after face validation for data collection. Data was analysed by SPSS, 23. Significance was set as 0.05.

**Results:** 57.9% of participants were females. The mean (±SD) age was 27.9(±5.6) years and BMI was 29.0(±3.6) kgm<sup>-2</sup>. The mean (±SD) actual and ideal body weights were 74.6(±12.6) and 59.0(±7.2) kg respectively. Though 31.8% (n=83) of participants accurately predicted their ideal body weight closer to the calculated ideal body weight (±2kg), only 16.1% (n=42) of participants had accurate body

weight perception as being 'obese'. 72.8% (n=190) perceived themselves as being 'overweight' and 6.1% (n=16) as 'about right weight'. Of all demographic and anthropometric parameters, higher BMI was the only significant predictor of accurate body weight perception (OR=1.23; 95% CI=1.07-1.47). Although all participants who had accurate body weight perception had attempted weight reduction at least once, only 54.8% (n=23) of them had sought professional advice. Accurate body weight perception was significantly associated with previous attempts of weight reduction ( $p=0.005$ ) and tendency to seek professional advice ( $p<0.001$ ).

**Conclusion:** High BMI was the only significant predictor of accurate body weight perception and the tendency to misperceive their body weights were common in obese adults of lower BMI categories.

**PP: 072**

**Shortage of Public Health Midwives in Sri Lanka**  
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**Introduction and Objectives:** Sri Lanka has a very well established Primary care system in which the Public Health midwives play a pivotal role. Public health experts believe that full time equivalents of existing PHMs in the system is not adequate for performing all the tasks assigned to them by various programmes. To date, a systematic assessment of PHM workload that considered population changes, assigned tasks, quality standards and quantify the actual PHM time gaps in the system has not been carried out. This study attempts to fulfill above void.

**Methods:** Study consisted of 3 components namely desk reviews, consultative workshops, and Workload indicator staffing needs (WISN) analysis complimented by One Health tool

**Results:** 7087 field PHMS are employed in 9 provincial health departments in Sri Lanka. The analysis of time requirements of various program related interventions indicated that the major share of PHM's time is utilized by Maternal and newborn (45%) and childcare programs (45%). Exclusively nutrition activities conducted in the field consumed around 7% of the FTE. Results showed that at least one field PHM is required per

1878 population to meet the current service demands; meaning that Sri Lanka needs further 4525 field PHMs as of January 2020.

**Conclusion:** Ministry of Health should take steps to train at least 1000 PHM per year, until the target number is met. As there is a lack of applicants, from Science stream students steps should be taken to recruit students from any GCE Advanced Level stream for PHM training.

**PP: 073**

**Role of Inventions to Tackle the COVID-19 Epidemic in Sri Lanka: Patent Law Perspective**  
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**Introduction and Objectives:** In recent months, there has been a myriad of COVID-related inventions in Sri Lanka. This study aims to investigate the role of inventions to address health emergencies caused by the outbreak in Sri Lanka from the patent law perspective. A patent is an exclusive right that is given to an inventor for his/her inventions for a limited period by the government.

**Methods:** This research was carried out as a critical review of the literature. Comparative study & analysis was employed to glean the experience of selected jurisdictions. Furthermore, the landscape of pandemic related inventions (around 80) in Sri Lanka were investigated via the top five e-newspapers in Sri Lanka during the past three months, patent statistics in national databases were referred as well.

**Results:** Considering the number of inventions created during this period, around 15 % have been channeled through the patent path, which is inadequate. As they do not get registered in the national intellectual property office and it could create precarious situations such as the same invention being repeated, anomalies in the patent filing process, etc. Most strikingly, IP awareness among the inventors is inadequate.

**Conclusions:** It is exigent to register novel inventions as it would sustain competitiveness among the inventors, and basic knowledge in patents should be vital to secure their creativity through legal means. Patents would be a supporting tool for allocating R & D grants during these extraordinary times. New normal has forced

policymakers to rethink how they can promote home-grown creativity in Sri Lanka.

**PP: 074**

**Vascular Endothelial Growth Factor Receptor - 02 Expression on Oral Squamous Cell Cancer – an Immunohistochemical Assessment**

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**Introduction and Objectives:** Neovascularization in a tumor plays an important role in tumor growth and metastases. The present study examined the immunohistochemical expression of vascular endothelial growth factor receptor-2(VEGF-R2) in oral squamous cell carcinoma(OSCC) and compared with clinicopathological parameters.

**Methods:** Thirty formalin-fixed, paraffin-embedded tissue blocks of OSCC from Apeksha Hospital, Maharagama, and 03 normal oral cavity tissues obtained from the post-mortems at Colombo South Teaching Hospital were subjected for immunohistochemistry. The immunohistochemical signal was assessed using Image J software version-1.52 for chromogen percentage(CP) area and optical density(OD).

**Results:** Mean VEGF-R2, CP levels in OSCC were 42.41±5.61, and controls were 38.04±2.21. The difference was not statistically significant(P=0.15). Within the OSCC group, the mean VEGF-R2 percentage in males was 42.60±5.30, and 41.8±6.76 in females was. The stage I-II of the OSCC, had mean value of 41.99±5.18 while stage III-IV had 44.49±7.78. The well-differentiated OSCC(n=18), VEGF-R2 CP was 41.20±5.32 and moderately-differentiated OSCC(n=08) was 43.21±6.48. The VEGF-R2, CP for poorly differentiated OSCC(n=04) was 46.21±3.78. Mean VEGF-R2 OD-levels in OSCC was 0.54±0.16 while controls 0.31±0.007. Within the OSCC group, mean VEGFR2 OD in males was 0.56±0.16 with and 0.49±0.14 in females. The tumor stage I-II of the OSCC had a mean value of 0.52±0.14 while stage

III-IV of OSCC had 0.67±0.22. The well-differentiated OSCC group(n=18), mean VEGFR2 OD-level was 0.48±0.12 and that in moderately-differentiated OSCC(n=08) was 0.61±0.18. The OD level of poorly differentiated OSCC (n=04) was 0.68±0.17

**Conclusions:** Chromogen percentage and OD of VEGF-R2 increases with the stage and the grade of the tumor. Males have higher VEGF-R2 expression than females.

**PP: 075**

**Knowledge, Experience and Self-Perceived Barriers for Engaging in Clinical Audits among Medical Officers in Paediatric Setup**

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**Introduction and Objectives:** Clinical audit is a pillar of clinical governance. Exploring knowledge and barriers of involvement enable policy planners in implementing interventions to promote an audit-culture. There is paucity of local documented literature related to these. This study was done to assess the knowledge while describing the experience and self-perceived barriers among medical officers in engaging in clinical audits.

**Methods:** A descriptive cross-sectional study was done among the medical officers working at paediatric units from September to December 2019. A convenient sample of 384 were recruited using a sample size calculation formula. Data collection was done with a pre-tested, structured questionnaire in printed format as well as in online format according to the preference of the participants. A knowledge score was calculated (with a potential highest value of 100) and factors associated with it were explored with spearman-correlation -coefficient. The attitudes were captured in Likert scale from 1 to 9.

**Results:** The majority of the participants (n= 200, 52.1%) were in Teaching Hospitals and were senior house officers (n=138, 35.9%). Nearly 55%(n=211) had not done an audit in last five years (n=194, 54.9%) whereas more than half (n=194) had no past involvement in audits. The mean (SD) knowledge score was 62.9 (14.9). The knowledge was positively associated with previous involvement ( $r_s=0.338$ ,  $p<0.001$ ) and frequency of conduct of audits ( $r_s=0.230$ ,  $p<0.001$ ). Highest

mean barrier-scores were assigned to lack of awareness and time.

**Conclusions and recommendations:** Opportunities of involvement in clinical audits must be increased among medical officers and interventions must be done to refresh their awareness.

**PP: 076**

**Knowledge and Practices on Antipyretics among Caregivers of Paediatric Patients at Teaching Hospital Ragama**

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**Introduction and Objectives:** Fever is the commonest presenting complaint to paediatric units worldwide. Here we aim to describe the knowledge and practices of fever and antipyretics among caregivers of paediatric patients in Teaching Hospital, Ragama.

**Methods:** A descriptive study was conducted at Teaching Hospital Ragama between June-November 2019. Care givers of consecutive children above 1 month admitting with a complaint of fever were recruited. Data were collected using a pre-tested interviewer-administered questionnaire to gather information on socio-demographics, knowledge and practice about fever and antipyretics. Ethical approval was obtained from Sri Lanka College of Paediatricians.

**Results:** Care givers (mean age-31.8±7.1yrs; females-84%) of 495 children (mean age-35.5±35.0months) were recruited; 98% were married, 44% studied beyond grade 10 and 77% were housewives. 35(7.1%) children had febrile convulsions before. 341(69%) caregivers used thermometers however, only 96(19.4%) could accurately use them. Paracetamol is the preferred antipyretic in 98.4% while some used ibuprofen (4.2%), diclofenac (0.6%), aspirin (0.4%) and mefenamic acid (1.6%) additionally. 83% mothers knew that paracetamol is given according to weight but only 12% knew how to calculate. 40.7% of children were given supra-therapeutic (>15mg/kg/dose) doses of paracetamol while 11.7% had received very high

doses(>20mg/kg/dose). Children of male care givers (18.8%vs10.4%,  $\chi^2=4.56$ ,  $p<0.05$ ) and who never had febrile convulsions (12.6%vs0.0%,  $\chi^2=4.99$ ,  $p<0.05$ ) were at significantly higher risk of receiving very high doses.

**Conclusions:** Although one-third of mothers used thermometers to measure temperature, only one-fifth knew the correct method. 12% of children were given very high doses (>20mg/kg/dose) of paracetamol; who were cared by male caregivers in particular.

**PP: 077**

**Clinical Characteristics, Antibiotic Susceptibilities and Treatment Outcome in Paediatric UTI - Comparison of *E. coli* and Non *E. coli* Group in a Single Centre**

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**Introduction and Objectives:** Urinary tract infection (UTI) is an important clinical problem in childhood. We analyzed the pathogenic spectra causing UTI in children and defined the clinical and laboratory characteristics, antibiotics susceptibilities and treatment outcomes associated with *E. coli* (*Escherichia coli*) and non *E. coli* (non *Escherichia coli*) infections.

**Methods:** Data was collected from a retrospective study carried in all children with confirmed UTI admitted to Pediatrics ward, Armadale Health Service, Western Australia. Data regarding the clinical characteristics, laboratory work up, antibiotic susceptibilities and radiological findings were analyzed using statistical methods.

**Results:** *E. coli* infections were significantly associated with higher temperatures at presentation, elevated C reactive protein (CRP), white cell counts and negative renal tract sonographies. Non *E. coli* infections occurred in younger children and had longer duration for fever defervescence. Gentamycin has shown the highest sensitivity against both *E. coli* (93%) and non *E. coli* (92%) organisms.

**Conclusions:** The study highlights the use of Gentamycin as single agent therapy for both *E. coli* and non *E. coli* UTIs. The author emphasizes the

need for larger studies to ascertain the differences among the *E. coli* and other organisms and incorporate into the clinical guidelines.

**PP: 078**

**Neonatal Hypothermia and its Aftermath in Babies less than 34 Weeks Gestation**

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**Introduction and Objectives:** Neonatal mortality is one of the most important factors which affect infant mortality. Hypothermia during the neonatal period is a major factor which affects significant neonatal morbidity and mortality in developing countries. Identification of incidence of neonatal hypothermia and aftermath is important to reduce morbidity and mortality. Objectives were to describe the incidence of hypothermia and morbidity among neonates <34 weeks of gestation and to determine the association of the hypothermic state at the time of admission with subsequent complications.

**Methods:** Descriptive, prospective study at neonatal unit of CSHW for one year among 146 preterms <34 weeks recruited by systematic sampling. This was analysed with descriptive statistics, chi square test and odds ratios and their 95% CIs.

**Results:** Out of 146 admissions, 21.2%(n=31) were <28weeks, 54.1%(n=79) were 28-32 weeks and 24.7%(n=36) were 32-34weeks, 40.4%(n=59) had normal temperature on admission (ToA), 35.6%(n=52) cold stress (36-36.4°C), 24%(n=35) moderately hypothermic (32- 35.9°C) and no severe hypothermia (<32°C). Out of 44.6%(n=65) blood culture and/or CRP proven sepsis, 29.2%(n=19) early onset and 78.8%(n=46) late onset. There is a statistically significant association between hypothermia on admission (HoA) and onset infection (p=0.002)(OR=7.4, 95%CI 2.1-25.7). There were no statistically significant

associations between HoA with surfactant deficient lung disease, transfusion, chronic lung disease and Necrotizing enterocolitis.

**Conclusions:** The incidence of neonatal hypothermia was high among preterm newborns with an increased risk of getting early onset sepsis. Therefore, development and strict implementation of “warm chain” is an important measure for preventing neonatal hypothermia.

**PP: 079**

**Level of Stress, Factors Associated with Stress and Coping Strategies among Advanced Level Students Attending Tuition Classes in a Selected Educational Zone in Sri Lanka**

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**Introduction and Objectives:** Advanced level is a challenging examination due to the limitation of the University entrance opportunities leading to high level of stress. Several issues have affected them irrespective of the stream of study, for which they tend to adapt different coping strategies. Objectives were to determine the level of stress, factors associated with stress and coping strategies among Advanced Level students attending tuition classes in Nugegoda Educational zone.

**Methods:** A descriptive cross sectional study was conducted among 364 advanced level students aged between 17-20 years attending a selected tuition class in Nugegoda educational zone. Self administered questionnaire was used with 35 item Coping Strategy Check list (CSCL) and 21 item Depression Anxiety and Stress Scale (DASS-21). Both tools were pretested and validated in Sri Lanka. Data was analyzed using SPSS 15.0 software.

**Results:** Vastness of the A/L curriculum was a significant stress factor between males and females (p= 0.001). Stress of getting lower grades and poor time management were higher among

females ( $p=0.027$ ,  $p=0.003$ ). Males reported change in sexual habits( $p=0.003$ ) and alcohol /cigarette use ( $p=0.001$ ). Lack of vacation and fear of academic failure was the most common physical and emotional stressor respectively. Seeking advice from a trusted person, being with others, blaming themselves for the situation, engaging in religious activities, listening to music, constantly thinking about the problem and crying to self were common coping strategies adopted by females. Immediate problem solving and consuming alcohol/ drugs were common coping strategies by males.

**Conclusions:** Males had more social and physical stress associated factors whereas females had academic and emotional stressors. Different methods of coping strategies were adopted by males and females.

**PP: 080**

**Psychological Morbidity and Correlates of Patients Presenting with Burn Injuries to a Tertiary Care Hospital in Sri Lanka**

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**Introduction and Objectives:** Intentional and unintentional burns are associated with significant psychological morbidity. Our objective was to describe the psychological morbidity and psychosocial associations in patients with burn injuries referred for a psychiatric assessment in National Hospital of Sri Lanka(NHSL).

**Methods:** A descriptive cross sectional study was carried out using all clinic records of patients with burn injuries referred to University Psychiatry Unit of NHSL from 1<sup>st</sup> January 2018 to 31<sup>st</sup> December 2019. Details related to sociodemographic factors, burn injury, psychiatric morbidity factors related to burn injury, psychiatric diagnosis related details and their associations were extracted.

**Results:** Total of 87 records of burn patients were analyzed and 49(56.3%) were females. Mean age was 37.8 years(SD=15.8). Majority (57.5%) were employed. Mean burn surface area was 36.2%(SD=16.6). Most reported accidental burn injuries (61.5%), 27(34.6%) of self-inflicted burns and 3.9% inflicted by another. Twenty four reported a conflict within 24 hours and 18(66%) of

them reported the intention was to influence or frighten another. Diagnosis of a mental illness prior to burn was present in 31 (38.3%): Substance use 12.2% and personality disorder 11%. After the burn 52(62.8%) were newly diagnosed with a mental illness. Commonest diagnosis was depression (35.5%) followed by adjustment disorder (17.7%), delirium (7.6%), post-traumatic stress disorder (2.5%), substance use disorder (1.3%) and schizophrenia (1.3%). Patients below 60 years experienced >30% burns ( $p=0.015$ ) and patients diagnosed with mood or psychotic disorder had further ongoing suicidal ideas( $p=0.012$ ).

**Conclusions:** Self-infliction of burns to influence others reflect the suicidal culture in Sri Lanka. Psychiatric sequelae is high after burn injuries.

**PP: 081**

**A Preliminary Study of the Effectiveness of Locally Composed Receptive Music Medicine on Short Term Symptomatic Relief of Sri Lankan Patients with Mild to Moderate Depression**

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**Introduction and Objectives:** There is paucity of knowledge on the effectiveness of music medicine as a therapeutic option for depression in resource limited settings. Objectives were to determine effectiveness of receptive music medicine on short term symptomatic relief of mild to moderate depression.

**Method:** A randomized single blinded interventional study conducted at the out-patient psychiatric clinic of National Hospital Sri Lanka using 41 patients with newly diagnosed mild to moderate depression. Music medicine was composed by a multidisciplinary group with incorporation of multiple styles and genres. The control group received standard care and the experimental group received the music medicine in addition to standard care. Outcome assessment was with Beck Depression Inventory (BDI – II).

**Results:** Mean age was 38.02 +/- 13.632 and mean BDI pre score was 18.61 +/-7.074. There were no baseline differences between groups. At endpoint, the control group and experimental achieved a BDI mean difference of 6.81 (SD=3.265) and 15.15 (SD=6.352) respectively;  $p < 0.01$ . The improvement in BDI in patients with moderate depression was more compared to those with mild depression 21.00 (SD=3.742); vs. 10.36 (SD=3.075)  $p < 0.01$ . There were no other significant associations noted in subgroup analysis based on age strata, gender, income, familiarity to music and genre preference.

**Conclusions and Recommendations:** Music medicine in addition to the standard therapy, lead to a statistically significant improvement in depressive symptoms assessed using the BDI – II in comparison to standard therapy alone.

**PP: 082**

**Stress across Different Social Demographic Groups in Suburban Areas of Sri Lanka**

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**Introduction and Objectives:** Enduring stress responses are associated with health problems. Objectives were to assess perceived stress levels (PSL) across different social classes and age generations.

**Methods:** PSL was calculated among 75(N=75) subjects selected by convenient sampling distributed across five social strata (upper, upper-middle, middle, working, poor-classes) and three age generations (Millennial: 23-38, Generation-X: 39-54 and Boomers: 55-73 years), fifteen from each social stratum, equally divided among three generations. The 56% of respondents were males. Sheldon-Cohen Perceived-Stress-Scale (PSS) was used 0-13, representing low (L), 14-26 moderate (M) and 27-40 high (H), stress levels. The statistical significance was tested using ANOVA employing SAS-software.

**Results:** The mean PSS in the sampled population was 15.89±6.50 with PSLs of H=8%, M=56% and L=36%. Further, males and females PSSs were 16.11± 6.08 and 15.60±7.08. Generation-X and Millennials showed moderate PSSs 17.68±6.18 and 17.28±5.87, while Boomers indicated low stress (12.72±6.46). Millennials had the highest proportion of high stress (12%), whereas majority of Boomers showed low stress (56%). Association of age and PSLs was significant ( $p<0.05$ ). Despite the social classes, all groups indicated moderate PSLs and poor-class had the highest PSS (18.6±5.80). The highest proportion with high stress (13%) in Upper-middle-class and majority with low stress (60%) were recorded in Working-class. The association of social class and PSLs was significant ( $p<0.05$ ).

**Conclusion:** This study revealed that both ends of the social class spectrum carried higher risks for stress. Older-aged middle-class persons had comparatively lower stress levels. This study warrants further studies in this area in applying interventional tools to address stress.

**PP: 083**

**Psychological Morbidity and Associated Factors Among Perinatal Patients Referred for Psychiatry Assessments at a Tertiary Care Centre in Sri Lanka**

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**Introduction and Objectives:** Pregnancy and childbirth is a time of increased vulnerability for mental health issues. Our objective was to study the psychological morbidity and associated risk

factors among antenatal and postnatal patients referred for the psychiatric assessment at University Psychiatry Unit of National Hospital of Sri Lanka.

**Methods:** All the Clinic records of perinatal referrals from 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2019 were assessed. Sociodemographic details, delivery details, health of the newborn, past and present psychiatry illness related details were obtained using a questionnaire. Data were analyzed using SPSS.

**Results:** Total of 161 perinatal referrals were studied. Mean age of the mothers were 28.7 years (SD=6.60). About 18 (11.8%) were not legally married, partner passed away or estranged. Above Ordinary level education was having 34.5% of participants. Majority were postnatal mothers (61.5%). Some mothers (32.3%) have reported the pregnancy was unexpected whilst 20(32.3%) and 49(30.8%) have experienced delivery complications and neonatal illnesses respectively. Past mental illnesses were found among 31(20.7%) of mothers. Out of whole perinatal referrals maternity blues (28.9%) was the commonest current psychiatry diagnosis. Among antenatal mothers, adjustment disorder (28.8%) and depressive disorder(17.3%) were the commonest. Schizophrenia, Schizophreniform disorder and bipolar illness were found among 8(5%), 6(3.7%) and 3(1.9%) mothers respectively. Major psychoactive substance use disorder was found among 4 (2.5%) mothers. Presence of pregnancy related complications were significantly associated with postpartum mental illnesses(p=0.008).

**Conclusion:** Commonest perinatal mental illness was the maternity blues. Depressive disorder was the commonest major mental illness and neonatal complications were associated with psychological morbidity in postnatal mothers.

**PP: 084**

**Are Future Nurses Knowledgeable on Known Risk Factors of Blood Borne Viruses to Combat with Blood Borne Viruses?**

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**Introduction and Objectives:** Nurses have a high risk of being exposed to blood borne viruses (BBV) during their day to day practices. Yet, this can be prevented by having a good knowledge. Objectives were to describe the knowledge on known risk factors of transmission of BBV, among nursing students in Nursing Training School- Kalutara and their associated factors.

**Methods:** A descriptive cross-sectional study was carried out among 209 nursing students from a nursing school in Sri Lanka. Data collection was done using a self-administered questionnaire. Statistical significance was tested at 5%.

**Results:** Most of nursing students gave correct answers for transmission of HIV and Hepatitis B virus (HBV) by needle stick injury(82%, 87%), through blood transfusion(90%, 80%), from mother to child at birth(90%, 64%), through organ transplant(80%, 66%), by direct contact with blood(75%, 62%) and through unprotected sexual intercourse(93%, 50%). Surprisingly, majority gave incorrect answers on transmission of HIV and HBV via sharing household equipment (50%,84%), by kissing/hugging (57%,75%), through mosquito bites (76%, 86%), by swimming in pools (80%, 87%), by eating contaminated food (81%, 88%) and through exposure to excreta (89%, 92%). Majority (56.9%) of them had poor overall knowledge on transmission of BBV. There was a statistically significant association between knowledge on transmission of BBV with higher academic year. However, there was no statistically significant association between studying in Advanced level bio-science stream and knowledge on transmission of BBV.

**Conclusions:** The knowledge on known risk factors for transmission of HBV is poor compared to HIV. Therefore BBV transmission needs further emphasis on the curriculum for future nurses.

**PP: 085**

**Haplotypes of Tmprss6 Gene are Associated with Iron Deficiency among Urban Sri Lankan Pregnant Women: Preliminary Evidence**

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**Introduction and Objectives:** Iron deficiency is the commonest nutritional problem among pregnant women. Its genetic predisposition is still not clearly defined. A previous study conducted on Tmprss6 gene, which regulates iron metabolism, has shown that rs855791T>C polymorphism is associated with iron deficiency among a cohort of Sri Lankan pregnant women. Another polymorphism, rs2413450, located on Tmprss6 has also been reported to be associated with hemoglobin levels in African, European and Indian populations. Thus, the current study was conducted to investigate the association of iron deficiency with rs2413450 and haplotypes defined by rs855791 and rs2413450 among urban Sri Lankan pregnant women.

**Methods:** DNA extracted from blood samples of 73 healthy pregnant women at  $\leq 12$  weeks gestation within Colombo municipal council area were used for genotyping rs2413450 via a PCRFLP assay designed in-house. Iron deficiency was defined as serum ferritin  $< 30 \mu\text{g/L}$ . Results were analyzed in SPSS v21 and UNPHASED v3.1.7.

**Results:** Among the study population, 69.86% were iron deficient. Genotype and allele frequency distribution of rs2413450 did not differ significantly among the iron sufficient (IS) and iron deficient (ID) groups (Allele frequencies; TID: 0.59, TIS: 0.48; Genotype frequencies; TTID: 0.37, TCID: 0.43, CCID: 0.20; TTIS: 0.32, TCIS: 0.32, CCIS: 0.36;  $P > 0.05$ ). rs2413450 itself was not associated with iron deficiency. However, haplotype rs855791T/rs2413450T was found to be significantly associated with iron deficiency with a two-fold risk (OR = 2.18, 95% CI = 1.0124-7.14).

**Conclusion:** Haplotypes of rs2413450 and rs855791 polymorphisms can be potential molecular markers of iron deficiency risk among Sri Lankan pregnant women.

**PP: 086**

**Design and Implementation of Novel Pharmacogenomic Assays for CYP2D6\*10 and CYP2D6\*41 Variants to Predict Response to Tamoxifen Therapy in Breast Cancer Patients**

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**Introduction and Objectives:** Tamoxifen is widely used as adjuvant endocrine therapy in oestrogen receptor positive premenopausal breast cancer patients. However, in nearly 30% of such patients, pharmacogenomically important variants in the

CYP2D6 gene are known to affect tamoxifen metabolism resulting in reduced drug efficacy due to inter-individual variations. This study was undertaken to design and implement novel pharmacogenetic assays for selected CYP2D6 gene variants to predict response to tamoxifen.

**Methods:** CYP2D6 gene variants related to tamoxifen metabolism showing the highest frequency in the Sri Lankan population were identified through survey of published literature and an existing de-identified genomic database. Two variants causing reduced enzymatic activity: CYP2D6\*10:100C>T (rs1065852) and CYP2D6\*41:2988G>A (rs28371725) were selected. Novel single variant tetra-amplification refractory mutation system (T-ARMS) polymerase chain reaction (PCR) assays were designed. The assays were implemented and optimized by genotyping the two variants in an existing blood resource obtained from a cohort of breast cancer patients. 19 samples were genotyped for CYP2D6\*41 and 5 samples for CYP2D6\*10.

**Results:** The desired specific bands were obtained by the single variant T-ARMS PCR method. Genotype frequencies for CYP2D6:rs28371725G>A were: GG - 52.6% (10/19); GA - 47.4% (9/19); minor (A) allele frequency - 23.7% (9/38). Genotype frequency for CYP2D6:rs1065852C>T was: CT - 100% (5/5) and minor (T) allele frequency was 50% (5/10).

**Conclusion:** We successfully designed and implemented novel genotyping assays for CYP2D6\*10 and CYP2D6\*41 variants. Minor alleles of both variants were identified in the genotyped cohort. These low-cost optimized pharmacogenomic assays could be offered to breast cancer patients to predict their response to tamoxifen.

**PP: 087**

**Preliminary Data from Genetic Screening of the Parents of Children with Retinoblastoma Associated with Germline RB1 Mutations**

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**Introduction and Objectives:** Retinoblastoma (RB), a tumour affecting those <5y, has a prevalence of 1 in 20,000 (20 cases/year in Sri Lanka). Around 40% with a germline mutation of *RB1* have a higher risk of second RB. Around 10% of cases have a mutation inherited from a parent with an elevated sibling recurrence risk. The objective was to identify presence of the mutation in parents of children with germline mutations.

**Methods:** An ongoing study identified nine RB patients with germline mutations of *RB1* using targeted amplicon sequencing of 27 exons of *RB1* and subsequently confirmed by Sanger sequencing. The genomic DNA of the parents were used to PCR amplify exons containing these mutations and then Sanger sequenced to determine the presence of their child's mutation.

**Results:** Nine RB cases (3 unilateral, mean age at presentation, 15 months; 6 bilateral, mean age at presentation, 15 months) including 1 familial case were identified with germline mutations. The mean ages of parents (n=18) were 29 years (maternal) and 32 years (paternal) respectively. There were no germline mutations identified in any of the parents.

**Conclusion:** In about 10% of heritable RB cases, a germline mutation is identified in a parent. In the remainder, the cause may be a new mutation or presence of somatic or gonadal mosaicism in a parent. Genetic testing in these families helps to determine the recurrence risk and to target intensive screening to at risk family members and it may balance the resource limited healthcare services of developing countries.

**PP: 088**

**Development of a Taqman Based Multiplex Quantitative PCR Assay for the Molecular Diagnosis of Williams Beuren Syndrome**

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**Introduction and Objectives:** Williams Beuren Syndrome (WBS) is a genetic disease caused by a 1.5 to 1.8 Mb deletion of chromosome 7q11.23 involving the loss of around 23 genes including the elastin (ELN) gene. Its manifestations include congenital heart defects, developmental delay, hypercalcaemia and characteristic facial features. The aim of this study was to identify whether a group of Sri Lankan children with a clinical diagnosis of WBS could have their diagnosis confirmed by genetic testing using Taqman qPCR.

**Methods:** Twenty-four clinically suspected WBS cases were recruited following ethical clearance and informed consent. DNA was extracted, spectrophotometrically quantified and a multiplex TaqMan qPCR was performed. A normal (N), positive control (with a confirmed deletion) and patients' (P) DNA was amplified using 2 designed primer pairs (Target : ELN gene; Control : TES gene) and TaqMan probes. A calibration curve of normal (N) DNA was used for dosage analysis. A ratio (R) of P:N of 0.5 indicates the presence of a deletion while a ratio of 1 indicates the absence of a deletion.

**Results:** Among twenty-four suspected cases, 19 had an ELN gene deletion while 5 cases did not and the findings correlated strongly with the clinical suspicions.

**Conclusion:** This qPCR method was able to distinguish ELN gene deleted cases from the non-deleted ones.

**PP: 089**

**OCT and Threshold Visual Field Test in Diagnosis of Anterior Visual Pathway Tumours**

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**Introduction and Objectives:** Anterior visual pathway tumors present to ophthalmologists with varying symptomatology mimicking other ophthalmic diseases. Recognition of subtle changes of optic disc and correlation of findings with OCT (Optical Coherence Tomography) and threshold visual fields is necessary for early accurate diagnosis.

**Methods:** A case series review of 4 patients presenting with features of NA AION, glaucoma, BIH and macular atrophy later found to have suprasellar tumors. Different optic disc

appearances and results of OCT and threshold visual fields are described.

**Results:** Case1: 58 year old man presented with further deterioration of vision in his amblyopic eye with acute onset disc oedema. VF was limited to the nasal half of the other eye with bilateral asymmetrical ganglion cell loss. Case 2: 47 year old woman recently diagnosed to have glaucoma with an arcuate scotoma converting to bi temporal hemianopia with binasal ganglion cell loss. Case 3: 40 yr old obese woman with acute onset severe headache and subtle disc oedema, peripheral field loss confirmed to be bi temporal hemianopia on VF and intact ganglion cell layer. Case 4: 51 yr old woman investigated for bilateral asymmetrical poor vision found to have R mild disc pallor, HVF limited to L inferior hemifield and macular thinning.

**Conclusions:** Initial diagnoses were challenged after review of examination and investigation findings to reach a correct diagnosis.

**PP: 090**

**The use of Ultrasound Scanning (USS) to Determine the Association of Non-Alcoholic Fatty Liver Disease (NAFLD) with Impaired Glucose Tolerance in Pregnancy (IGTIP); does the use of USS increase IGTIP Detection?**

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**Introduction and Objectives:** Although USS is a routine practice of obstetric care in Sri Lanka (SL), USS is not being used to diagnose fatty liver (FL) in pregnancy despite the growing global evidence for the association between NAFLD and Diabetes in pregnancy (DIP). The objective of this study is to determine the yield of USS to improve diabetes care.

**Methods:** A prospective cohort study was conducted among antenatal mothers attended to selected field antenatal clinics of Anuradhapura district during July-August 2019. USS was done under the supervision of consultant radiologist for all the first trimester mothers. Fasting blood sugar (FBS) and Oral glucose tolerance test (OGTT) was performed in first trimester and at Period of amenorrhoea (POA) of 24-28 weeks (2<sup>nd</sup> visit). Impaired glucose tolerance (IGT) was defined according to criteria of International Association of Diabetes and Pregnancy Study groups (IADPSG) and FL was graded according to USS criteria.

**Results:** USS was performed among 632 mothers and 1<sup>st</sup> trimester blood sugar was tested among 611 mothers and of them 338 (55.3%) attended the 2<sup>nd</sup> visit. The mean age was 28.8 years (SD, 5.6). The prevalence of FL grade 1 and 2 were 90 (14.2%) and 234 (37%) respectively. Presence of FL (Ad. OR=1.7, p=0.049), presence of FL grade 2 (Ad. OR=2.9, p<0.000), and increased age (Ad. OR=1.049, p=0.028) were significant predictors of IGT in first trimester. Among the normoglycemic mothers of first trimester, the incidence of IGT at 2<sup>nd</sup> visit was 11 (3.5%). FL grade 2 was the only significant predictor of IGT at the 2<sup>nd</sup> visit (Ad. OR=3.3, p=0.09).

**Conclusion:** Incorporating USS to public health system to determine FL will improve GDM care of SL.

**PP: 091**

**Rapid Increase of Prescription Drug Abuse Potential in Sri Lanka**

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**Introduction and Objectives:** Globally, in 2017 it has been estimated, there were 585,000 deaths and 42 million years of "healthy" life lost; half who are younger than 50 years as a result of the abuse of drugs including prescription drugs. In Sri Lanka, recently there has been a significant increase in the non-medical use of prescription drugs over controlled drugs making it an emerging threat to the country. Seizures related to misuse of pharmaceuticals have identified that effortless access to domestic distribution channels, sales without the requisite medical prescription, and also diversion of prescription drugs from distribution channels are the major reasons for this new trend in Sri Lanka. This study emphasizes the current trend and need for an appropriate

national control mechanism over the non-medical use of prescription drugs.

**Methods:** The samples received from law enforcement and regulatory institutions for the confirmation of the content for legislative purposes, were analysed and the statistical update was recorded with accordance to the identified analyte.

**Results:** According to the samples analysed in the period 2017 to 2018, with 120 cases related to the pharmaceutical drugs, majority of the substances was identified as Tramadol with 48%, following Pregabalin and Diazepam as 32%, 11%, respectively. In comparison to 2017, substantial increase (20%) in misuse of Tramadol was observed.

**Conclusion:** Based on the emerging trend demonstrated by this study and concerning the illicit manufacture, and diversion of pharmaceutical drugs from the licit channels, it is vital to address the matter and initiate comprehensive national control measures over diversion of pharmaceutical drugs with high abuse potential.

**PP: 092**

**Emerging Trend of Adulteration of “Street” Heroin with Legitimate Pharmaceutical Drugs**  
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**Introduction and Objectives:** Illicit trafficking and abuse of Heroin has become a severe threat to the health and welfare of the people in Sri Lanka. Street Heroin is often adulterated, for many reasons including increase of dealer’s profit and /or to enhance psychoactive effects. The objective of the study is to identify the toxic adulterants, high abuse potential pharmaceutical drugs and other substances present as cutting agents which are important to medical practitioners to treat adverse health consequences.

**Methods:** This study was based on the 341 street heroin samples submitted for analysis by the National Narcotic Laboratory from 2016 to 2018.

Samples were analysed using GC-FID and GC-MS techniques.

**Results:** Analysis of the samples revealed the presence of etoricoxib, diclofenac, pimethixene, prednisone, paromomycin, dextromethophan, etofylline, theophylline, imidazole in samples reported in 2018 when compared to caffeine, acetaminophen, sorbitol and lactose identified in 2017. Presence of caffeine and acetaminophen in samples were decreased by 105%, 75% and 64% in 2016, 2017 and 2018 respectively. Presence of diazepam, tofisopam and chlordiazepoxide has decreased by 30%(2016), 15%(2017) and 7%(2018) and the use of olanzapine decreased from 10%(2017) to 8%(2018). Dothiepin a tricyclic anti (TCA) depressant and tramadol an opioid were newly identified adulterants in 2018.

**Conclusion:** This study has demonstrated the increasing trend that street heroin are being extensively mixed with a variety of adulterants of pharmaceutical drugs which have serious public health implications and need urgent attention of the medical practitioners.

**PP: 093**

**Pharmacists’ Interventions in the Management of Drug Related Problems**

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**Introduction and Objectives:** Pharmacists’ interventions result in reduced numbers of drug related problems (DRPs) and contribute to improvements in patient care. The objective of this paper is to assess the success of interventions made by pharmacists to resolve identified DRPs, which were identified as part of a study which assessed the effectiveness of pharmacists’ counselling at outpatient clinics.

**Methods:** 800 participants with diabetes attending outpatient clinics of two Sri Lankan hospitals were included in the study and two trained pharmacists worked at the clinics. The pharmacists reviewed clinic notes and interviewed patients to achieve the main objectives of the study. If the pharmacists identified DRPs, they

intervened to resolve the DRPs by discussing them with prescribers and/or patients. The nature of interventions and outcomes were recorded and classified according to the Pharmaceutical Care Network of Europe classification scheme version 6.2.

**Results:** The pharmacists identified 252 DRPs and made 241 interventions to resolve 235 problems. (Some problems needed more than one intervention.) Seventeen problems could not be addressed due to issues such as busy environment of the clinic and inability to have a discussion with doctors. Of the 241 interventions made, 99 (41%) were with prescribers and 142 (59%) were with patients. 75.64% of the problems identified were totally or partially solved.

**Conclusion:** Employing pharmacists at outpatient clinics with opportunities to work closely with doctors and patients is beneficial in reducing DRPs. This needs to be considered nationally, as in the current healthcare system, opportunities as such for pharmacists are minimal.

**PP: 094**

**A Double Blind Randomized Placebo Controlled Clinical Trial of *Coccinia grandis* (L.) in Patients with Newly Diagnosed Type 2 Diabetes Mellitus**  
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**Introduction and Objectives:** Promising antidiabetic effects of the aqueous leaves extract of *Coccinia grandis* (Linn.) Voigt (Cucurbitaceae) have been reported in chemically induced animal models of diabetes mellitus. The present study was to evaluate the efficacy and safety of a newly developed herbal drug of *C. grandis* in newly diagnosed patients with type 2 diabetes mellitus (T2DM).

**Methods:** The study was three months long, randomized, double blind, placebo controlled clinical trial including 158 patients with newly diagnosed T2DM of both gender (30-60 years age). Patients were randomly assigned to two groups receiving either 500 mg of herbal drug or placebo drug (corn starch, 500 mg) once daily for three months. The investigators and patients were blinded to the herbal and placebo drug due to identical shape, color, weight and size. Several

glycemic indices, renal, liver and hematological parameters and blood pressure (BP) were assessed through-out the study in two weeks intervals till the end of study. The study protocol was registered in the clinical trial registry, Sri Lanka (SLCTR/ 2018/012).

**Results:** Mean glycosylated hemoglobin (HbA<sub>1c</sub>), fasting plasma glucose (FPG), fructosamine, serum insulin and homeostatic model assessment for insulin resistance (HOMA-IR) of the study subjects were 6.41%, 7.47 mmol/L, 0.35 mmol/L, 17.96 mIU/L, 6.00 respectively at the baseline. The treatment of herbal drug led to significant reductions in the mean HbA<sub>1c</sub>, FPG and fructosamine by 11.98, 16.71, and 11.11% with compared to the placebo respectively (p<0.05). Serum insulin level and HOMA-IR were significantly decreased by 10.04 and 26.9% respectively (p<0.05) in the herbal drug treated group at the end of intervention as compared to the base line. All the renal, liver and hematological parameters and BP were within the normal reference range at each visit.

**Conclusion:** Treatment with herbal drug of *C. grandis* (500 mg per day) for three months for patients with newly diagnosed T2DM significantly improved the glycemic parameters with well tolerated safety.

**PP: 095**

**School Environment Factors Associated with Eating Behaviours among Adolescents in Government Schools in the Rathnapura District**  
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**Introduction and Objectives:** Adolescence is a period of rapid growth and development, bridging childhood and adulthood. Practicing healthy eating behaviours is important to meet the high nutritional demands during adolescence. Objective of this study is to describe school environment factors associated with eating behaviours among adolescents in government schools in Rathnapura district.

**Methods:** A descriptive cross-sectional study was conducted among cluster sampled, 384 secondary school children aged 12-16 years using a self-administered questionnaire consisted of variables related to school environment and food habits.

The 23-item Adolescents Food Habits Checklist (AFHC), including dietary intake of fat, fibre, fruit and vegetables was used to assess food habits. Content and face validity of the AFHC was assessed by a panel of experts representing public health, medical nutrition and behaviour sciences. Pilot test confirmed appropriateness of AFHC in Sri Lankan context. Descriptive statistics and independent sample t test were used in data analysis. The level of statistical significance was taken as  $p < 0.05$ .

**Results:** Mean age was 14.33 (SD=2.63) years. Females were 50.8% (N=195). Majority (88.0%) were living in rural areas. Mean AFHC score was 15.54, SD=3.62 (min=3; max=23). Significantly higher mean AFHC scores were associated with school programmes on healthy eating behaviours [(M=15.82, SD=3.51)  $t=4.09$ ,  $p < 0.001$ ] healthy food practice from childhood [(M=15.63, SD=3.55)  $t=4.14$ ,  $p < 0.001$ ] and bringing home-made meals (M=16.54, SD=3.17)  $t=2.62$ ,  $p=0.009$ .

**Conclusions:** School programmes on healthy eating, childhood healthy food habits and bringing home-made meals have a positive influence on healthy eating behaviours among adolescents.

#### PP: 096

##### A Study on Prevalence and Factors Associated with Flat Feet in a Selected Group of Female Nurses in the National Hospital of Sri Lanka

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**Introduction and Objectives:** Flatfoot is a postural deformity in which the foot doesn't have a normal medial longitudinal arch when standing. The objective was to study the prevalence and factors associated with flat feet among female nurses in National Hospital of Sri Lanka (NHSL)

**Methods:** A cross sectional study was carried out among 100 randomly selected nursing officers aged 25-55 years from 20 wards in NHSL. Harris mat was used to mark foot prints on white papers. Plantar Arch Index (PAI) and Normalized Navicular Height Truncated (NNHT) measurement were used to assess flatfoot. Electronic weighing scale,

standard stadiometer and short self-administered questionnaire were used to collect data on body weight, height, age, duration of standing and family history. Data was analyzed using on SPSS version 23 using descriptive statistics and Chi-square test

**Results:** The PAI showed that 31.0% (n=31) had bilateral flat foot and 13.0% (n=13) had unilateral flatfoot. However, the NNHT method showed that 38.0% (n=38) had bilateral flatfoot and 4.0% (n=4) had unilateral flat foot. There were 13.0% (n=13) who were found to have bilateral flatfoot from both methods. Although no factors were found to be significantly associated with flat feet on the NNHT method. BMI, age and family history was significantly ( $p < 0.05$ ) associated with flat feet in the PAI method. Only BMI was significantly ( $p < 0.05$ ) associated with those who had bilateral flatfoot from both methods

**Conclusion:** This study found a 13.0% prevalence of bilateral flatfoot in female nurses in NHSL. Increased BMI was associated with bilateral flatfoot.

#### PP: 097

##### A Case of Recurrent Multiple Evanescent White Dot Syndrome -Truly Evanescent!

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**Introduction and Objectives:** Multiple Evanescent White Dot Syndrome (MEWDS) is an uncommon idiopathic form of uveitis affecting females in their second to fourth decades. It resolves spontaneously but may recur. The characteristic fundus appearance of white dots is faint and transient adding to the risk of missed diagnosis.

**Methods:** A single case history of a 45-year-old lady presenting with 3 episodes of blurring of vision with scotoma is described with the interpretation of clinical signs and investigations.

**Results:** The first episode initially diagnosed and treated as optic neuritis due to the presence of a scotoma and RAPD has led to confusion as the VEP was normal. The next clinician noticing the scotoma to be positive has investigated the macular structure which too was normal. Few months later the contralateral eye was affected with the appearance of mild disc oedema. In the third episode presented to me with R blurring (R/BCVA 6/18 and N5) and R/RAPD, the characteristic multiple faint white spots, (seen better with red

free illumination) were noticed on the retina with disruption of outer retina on OCT, leading to diagnosis of MEWDS. Although cyclosporin has shown benefit in controlling multiple episodes of MEWDS the patient did not opt as all three episodes resolved spontaneously within a few weeks.

**Conclusions:** A high degree of suspicion and an understanding of this uncommon entity leads to the correct diagnosis and avoids inappropriate treatment.

**PP: 098**

**In Vitro Anti-Lipase Potential of Five Sri Lankan Medicinal Plants**

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**Introduction and Objectives:** Obesity has become an epidemic worldwide and it has been defined as the New World Syndrome. It is a risk factor for various diseases such as coronary heart diseases, diabetes mellitus, stroke and hypertension. Various enzyme inhibitors are used as anti-obesity medications. Among those, pancreatic lipase which is responsible for the digestion and absorption of triglycerides is targeted in the discovery of many drugs in the treatment of obesity. Objective of the study was to determine the effect of five medicinal plants on the inhibition of pancreatic lipase.

**Methods:** Potential anti-lipase activity of ethanol and hexane extracts of Sri Lankan medicinal plants *Allium sativum* (Garlic) – fruit, *Trigonella foenum-graecum* (fenugreek) – seeds, *Tinospora cordifolia* (rasakinda) – stem, *Terminalia chebula* (myrobalan) – fruit and *Bacopa monnieri* (lunuwila) – whole plant were evaluated for their inhibitory effect on porcine pancreatic lipase enzyme using p-nitrophenylbutyrate as the substrate. Five concentrations (50, 100, 200, 300, 400 µg/mL) of each plant extract were used in the study. Orlistat was used as the positive control and dimethyl sulfoxide was used as the negative control.

**Results:** A 50% inhibition of pancreatic lipase activity was observed at 177.15, 127.54, 22.50, 25.0 and 20.0µg/mL concentrations of ethanol extract and 366.10, 433.33, 422.36, 140.38 and 84.43µg/mL concentrations of hexane extract of

garlic, fenugreek, myrobalan, rasakinda and lunuwila respectively compared to 15µg/mL of orlistat.

**Conclusions:** Ethanol extracts showed higher anti-lipase activity compared to hexane extracts and *Bacopa monnieri* (lunuwila) showed the highest anti-lipase activity compared to the other four plant extracts.

**PP: 099**

**Clinico-Epidemiology of Washing Powder ('Prinso') Poisoning**

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**Introduction and Objectives:** 'Prinso' is a washing powder which consists of two sachets of crystals: calcium oxalate (white) and potassium permanganate (purple). Oxalate causes acute kidney injury (AKI) and permanganate causes respiratory failure. The objective of this study was to describe clinico-epidemiology of 'Prinso' poisoning.

**Methods:** An observational clinical study was conducted for patients admitted with 'Prinso' poisoning to Teaching Hospital, Ratnapura. Data collection was done for 3 years commencing from May 2017 using an interviewer-administered questionnaire and were analyzed using SPSS version 21.

**Results:** There were 274 patients with 'Prinso' poisoning from which males were 140 (51%) and females were 134 (49%). Most affected age group (218;79.6%) was 12-41 years (range 12-80). Ingested chemical types were oxalate (117;43%), permanganate (31;11%) and both sachets (126;46%). Majority was unemployed (109;40%). Main occupations were labourer (29;11%), gem miner (26;9.5%), garment worker (21;8%) and estate worker (16;6%). Twenty two (8%) were schooling children. Most (145;53%) were admitted to hospital within 1- 4 hour of ingestion (IQR 2-4 hrs) from Ratnapura (74;27%) then from Nivithigala (59;21.5%). Smokers were 86 (31%) and alcoholics were 75 (27%). Most (78;28.5%) were treated for 3 days (IQR 2-6 days) at hospital.

Decontamination was done for 239 (89%). Common clinical manifestations were nausea (90;33%), vomiting (193;70%), epigastric pain (141;52%), difficulty in breathing (26;9.5%), haematemesis (25;9%), diarrhea (23;8%) and dysphagia (18;7%). Complications were AKI (110;40%), hypotension (29;11%) and methaemoglobinaemia (26;9.5%). Haemodialysis was done for 39 (14%) patients and 20 (7%) were treated at ICU. Methylene blue (antidote) was given to 25 (9%) and 22 (8%) patients died of the poisoning. Case fatality rate (CFR) for 'Prinso' poisoning was 8%.

**Conclusions:** 'Prinso' is a deadly poisoning household agent which has a high CFR. Acute kidney injury and methaemoglobinaemia are common complications of its poisoning.

#### PP: 100

##### Clinico-Epidemiology of Drug Overdose in a Tertiary Care Hospital in Sri Lanka

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**Introduction and Objectives:** If a drug is administered as the dose greater than recommended, it is called drug overdose. Recently drug overdose is becoming popular in both urban and rural areas of Sri Lanka. The objective of this study was to describe clinic-epidemiology of drug overdoses in Ratnapura district.

**Methods:** An observational clinical study was conducted in Teaching Hospital Ratnapura over one year commencing from September 2018. Data was collected from a purposive sample using an interviewer-administered questionnaire and were analyzed using SPSS version 21.

**Results:** There were 212 (22%) overdoses from which adults were 202 (95%) and children were 10 (5%). Most were young females (128;60%) and commonly affected age group was 11-30 years (164;77%). Majority was unemployed (148;70%) and 15 (7%) were garment workers. Common overdosing agent was paracetamol (114;53.8%), next anti-epileptic drugs (16;7.5%) and psychiatric drugs (14;6.6%). Most (102;48%) were admitted to

hospital within 1-4 hour of ingestion (median 2 hrs and IQR 2-4 hrs) from Ratnapura (62;29%) then from Kuruvita (21;10%). Smokers were 43(20%) and alcoholics were 42 (20%). Most (86;41%) were treated for 2 days (mean 2.8 days, SD 1.4, 1QR 2-3 days) at hospital. Decontamination was done for 161 (76%). Nausea (89; 42%) and vomiting (113;53%) occurred prominently with epigastric pain in 40 (19%), vertigo in 28(13%) and confusion in 11 (5%). Complications were detected in 15 (7%) including ECG changes (7; 3%), respiratory failure (5; 2%), acute liver failure (4; 2%), acute kidney injury (3; 1%) and hypotension (3;1%). Six (3%) were treated at intensive care unit from which 5 (2%) were intubated and 2 (0.9%) died.

**Conclusions:** Drug overdoses are common in adults as intentional type. Young females are mostly affected and common overdosing agents are paracetamol, antiepileptics and psychiatric drugs.

#### PP: 101

##### The Effect of Music Tempo on Heart Rate, Blood Pressure and Respiratory Rate Changes in Submaximal Treadmill Walking Exercise of Untrained Undergraduates

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**Introduction and Objective:** The use of music has been identified as a potential ergogenic aid which enhances the exercise performances. Objective was to identify the effect of music tempo on heart rate (HR), blood pressure (BP), and respiratory rate (RR) changes in treadmill walking exercise of untrained undergraduates.

**Methods:** A randomized crossover study, conducted at the strength training gymnasium involving 50 untrained undergraduates of the Faculty of Sciences, University of Colombo. 25 females and 25 males were selected using stratified random sampling. Each subject underwent three sessions of 10-minute treadmill walking exercise at 60%- 70% of the maximum HR (submaximal intensity) while listening to no music, slow tempo music and fast tempo music in three separate days. HR, BP and RR values were measured immediately before and after the exercise in each session.

**Results:** Immediately after exercise, each session showed significant increases in mean values of HR, BP, and RR. Furthermore, there were significant mean differences of HR ( $p=0.000$ ), systolic blood pressure (SBP) ( $p=0.000$ ) and RR ( $p=0.002$ ) changes while listening to fast tempo music when compared to no music. Similarly, there were significant mean differences of HR ( $p=0.001$ ), SBP ( $p=0.03$ ) and RR ( $p=0.000$ ) changes in fast tempo music when compared to slow tempo music. However, there was no statistically significant difference between slow tempo music and no music.

**Conclusion:** This study suggests that a combination of fast music tempo with acute submaximal treadmill walking exercise could improve the HR, SBP and RR of untrained young adults.

**PP: 102**

**Effectiveness of an Aerobic Exercise Programme on Cardiovascular Endurance and Body Weight in Sedentary Overweight Females of the University of Colombo and their Knowledge Regarding Aerobic Exercises**

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**Introduction and Objectives:** Cardiovascular endurance plays an important role in physical fitness. The sedentary, overweight individuals have low cardiovascular endurance. The aerobic exercises improve cardiovascular endurance and reduce body weight. Objectives were to determine the effectiveness of an aerobic exercise programme on cardiovascular endurance and body weight in sedentary overweight females of the University of Colombo and their knowledge regarding aerobic exercises.

**Methods:** Randomized controlled intervention was conducted on 40 sedentary overweight females. Simple random sampling was used to assign them similarly into experimental (EG) and control groups (CG). Queen's college 3-min step test was used to measure maximal oxygen consumption ( $VO_2max$ ) which indicates cardiovascular endurance (CE). Moderate intensity, low impact aerobic exercise programme was performed 40 min/day, 4 days/week with 32 sessions by the EG participants and it was supervised. Pre-post intervention audit questionnaire regarding knowledge was given to

all participants before and after the programme. Data was analyzed using descriptive statistics, independent sample t-test and paired sample t-test at the significance level of 0.05.

**Results:** Mean age, body mass index(BMI),  $VO_2max$  and body weight(BW) of the total study population were  $21.58\pm 0.87$  years,  $23.96\pm 0.62$  kg/m<sup>2</sup>,  $40.39\pm 3.12$  ml/kg/min and  $56.99\pm 5.26$  kg respectively. There was a statistically significant improvement ( $p<0.05$ ) in CE in the EG (Mean difference  $VO_2max$ : EG -  $1.68$  ml/kg/min, CG  $0.02$  ml/kg/min). Similarly, the effect of intervention on reducing BW was statistically significant ( $p<0.05$ , mean difference BW: EG  $0.33$  kg, CG  $-0.06$  kg). Knowledge regarding aerobic exercises was improved in the EG compared to the CG.

**Conclusions:** The moderate intensity, low impact aerobic exercise programme is effective in improving cardiovascular endurance and reducing body weight in sedentary overweight females and resulted in improved knowledge regarding aerobic exercises.

**PP: 103**

**Morbidity Status and its Association with Activities of Daily Living among the Elderly Living in Informal Caregiving Settings in the Colombo District**

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**Introduction and Objectives:** Morbidity is closely linked to limitation of activities of daily living (ADL). We examined the association between morbidity and ADL limitations among the elderly living in informal caregiving settings in Colombo District.

**Methods:** Community-based cross-sectional study of a representative sample obtained by multi-stage cluster sampling of participants >65 years. ADL scores were obtained by the validated Sinhala version of 10-item Barthel Index. Statistical analysis was by SPSS.

**Results:** N=723; mean age 72.23±6.3 years with 40.2% females, of whom 71.9% reported at least one morbidity and 16.9% one ADL limitation; 24.7% reported neither morbidity nor ADL limitations. Hypertension (43.6%) and diabetes (32.1%) were common morbidities. Morbidity was significantly associated with ADL limitations ( $p<0.05$ ). Although 41.4% reported multimorbidity, this had no significant association with ADL limitations. Stroke (OR=6.12,  $p<0.001$ ) and chronic arthritis (OR=1.96,  $p<0.05$ ) were predictors of ADL limitation, when adjusted for age, gender and presence of one or more diseases. Of total sample 43.4% perceived their health as poor, which was significantly associated with ADL limitations ( $P<0.001$ ). Majority (68%) with ADL limitations perceived their health as poor.

**Conclusions:** Morbidity is associated with ADL limitations in the elderly. Stroke and chronic arthritis are significantly associated with ADL limitation. Majority of the affected elderly perceive their health as poor. We recommend addressing diseases that lead to ADL limitations to enhance self-perceived health and wellbeing of the elderly citizens.

**PP: 104**

**Impact of a 6-Month Combined Exercise Regimen on Taste Perception for Sucrose in Patients with T2DM**

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**Introduction and Objectives:** Regular exercise is a key element in the management of type 2 diabetes mellitus (T2DM). Although the importance of regular exercises on glycaemic control is studied extensively, its impact on sweet taste perception is less reported. The aim of this study was to assess the impact of regular combined exercises for 6 months on taste perception for sucrose in T2DM.

**Methods:** T2DM patients (n=115) aged 35-60 years were recruited and assigned randomly into an exercise group (n=55) and a control group (n=60). A graded exercise protocol was introduced to the exercise group which included aerobic exercises (brisk walking) for 30 minutes/day, 4-5 days/week and resistant exercises (with Thera bands) 20 minutes/day, 2-3 days/week for 6 months without changing diet and medications. Supra-threshold intensity ratings for sucrose were tested using 'General Labeled Magnitude Scale' and preference for sucrose by 'Monell 2-Series-Forced Choice Method'. Data were compared after 6 months.

**Results:** Exercise group showed increased supra-threshold intensity ratings for all solutions with statistically significant results for 2.02M (Mean difference; 9.14/±0.72,  $p=0.016$ ) and 0.64M (Mean difference; 11.78/±0.68,  $p=0.011$ ) concentrations when compared to baseline values. Also, the preference for sucrose was significantly reduced compared to the baseline (Mean difference; 0.08/±0.05,  $p=0.001$ ) in the exercise group. The above changes in supra-threshold intensity ratings and preference for sucrose were not observed in the control group.

**Conclusions:** Taste sensitivity increases especially for higher sucrose concentrations and taste preference decreases in T2DM patients with regular combined exercises for a duration of 6 months.