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Oral and Poster Presentations

at the

79th Annual Academic Sessions

of the

GALLE MEDICAL ASSOCIATION

25th September 2020

at the

Auditorium, Faculty of Medicine,

University of Ruhuna,

Galle, Sri Lanka

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The Galle Medical Journal

Journal of the Galle Medical Association

Volume 25: Suppl 1,   September 2020

Message from the Editors

It has been a great pleasure to publish the abstracts of the oral and poster presentations of 79th Annual Academic Sessions of the Galle Medical Association (GMA) as a supplement to the Galle Medical Journal for the year 2020 in keeping with the GMA tradition of the last 5 years.

The GMA Annual Academic Sessions is the pinnacle of academic events for many researchers and clinicians primarily in the Southern province. It provides an opportunity to disseminate their research findings and share their experiences - an essential step towards propagation of novel ideas and approaches that are instrumental to the advancement of the fields of medicine and allied health sciences. The considerable number of abstracts received this year from the researchers across the country despite the ongoing COVID-19 pandemic emphasizes the need for such opportunities.

The abstracts presented at the 79th Annual Academic Sessions of GMA cover a wide array of topics from several disciplines ranging from basic to applied research, which would undoubtedly stimulate the interest and enhance the understanding among the wider scientific community. We congratulate all authors and researchers whose work has been selected for presentations and extend our sincere thanks for choosing GMA Annual Academic Sessions as the platform for showcasing their research findings.

Champa Wijesinghe
Sudheera Jayasinghe
Editors - Galle Medical Association

Oral Presentation – 01

Frequency and factors associated with Burnout Syndrome among employees of Emergency Treatment Units at three Teaching Hospitals in Sri Lanka

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Introduction

Burnout Syndrome consists of depersonalisation, reduced personal accomplishment and emotional exhaustion. It was shown that among the health care workers those who work in the Emergency Treatment Units (ETU) are more prone to be affected by the Burnout Syndrome during their employment period.

Objectives

This study aimed to determine the frequency and factors associated with Burnout Syndrome among employees of ETUs in Karapitiya Teaching Hospital (TH), Kurunegala TH and Anuradapura TH.

Methods

A cross-sectional survey was conducted in three ETUs. The data were collected using a validated self-administered questionnaire developed incorporating Copenhagen Burnout Inventory (CBI), demographical data, general health related questions, and factors which may reduce burnout as perceived by workers.

Results

A convenient sample was recruited with 167 participants composed of 78 medical officers (46.7%), 66 nurses (39.5%) and 23 health care assistants (13.8%). The mean personal burnout, work related burnout and client related burnout was 37.1, 37.3 and 33.5, respectively. The prevalence of overall burnout was 54 (32.3%). There was no significant difference between the overall burnout of workers in different ETUs. None of the factors had a significant relationship with burnout (p>0.05). Seventy participants (76.9%) indicated that working in ETU was more stressful than other working areas.

Conclusion

The results of our study show that ETU healthcare workers are a vulnerable group for burnout and more than 30% of staff suffer from burnout. Preventive approaches to burnout are needed to promote quality of work life.

Oral Presentation – 02

Influence of knowledge and negative attitudes towards contact investigation of the patients with pulmonary tuberculosis

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Introduction

Contact investigation involves the systematic evaluation of the contacts of known TB patients to identify active disease or latent TB infection (LTBI). Poor knowledge and negative attitudes about the disease could adversely affect the contact investigations (CI).

Objective

To assess the influence of knowledge and attitudes towards contact investigation of patients with pulmonary tuberculosis (PTB) attending the Chest clinic, Matara

Methods

This cross-sectional study was carried out in the Chest clinic, Matara. A self-administered questionnaire was used to collect data. Response variables of knowledge on disease transmission, treatment, prevention and negative attitudes were compared among the individuals who completed and not completed investigation. Completion of contact investigation was defined as 'investigation of all the members sharing home of the index case'. Investigations included evaluation of the history, three sputum tests (especially adults), Mantoux test and chest radiography.

Results

Data of 133 patients were analyzed in this study. The male to female ratio was 5:4. Age was ranged from 12 years to 89 years (mean= 47, SD±17 years). Contact investigations were completed among 24% of the patients. The knowledge on disease transmission, treatment, and prevention among patients were good in certain questions. Bivariate analysis revealed that completion of contact investigation was significantly associated with knowledge on the availability of prophylaxis for close contacts below 5 years of age ($\chi2 =68$, p=0.0001), knowledge on the necessity of close contact investigation ($\chi2 =8.83$, p=0.002) and keeping a distance when talking to others ($\chi2=4.41$, p= 0.03). The negative thinking pattern was identified as self-distancing (78%), reluctance of divulging about the disease to people other than family members (74%), mental setback (61%) and hurt due to the attitudes of the others (41%).

Conclusion

Completion of contact investigations was inadequate among patients with PTB. In depth knowledge on beneficial effects had promoted contact investigations.

Oral Presentation – 03

The association of Body Mass Index (BMI) of school children to the nearest food-outlets and number of food outlets at one mile distance around the schools in rural Sri Lanka

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Introduction

Fast-food outlets around one mile distance of schools are associated with childhood obesity. This association is well explored in Western countries, yet not in South Asia where childhood obesity is on the rise. Thus, understanding the nature of this association is important at policy level. The aim of the study was to explore the association of body mass index (BMI) of schoolchildren with the nearest fast-food outlet and number of fast-food outlets at one mile distance around the schools in Monaragala district, Sri Lanka.

Methods

This cross sectional study was carried out with students (n=604) in the age of 14-17 years studying at 30 public-schools in Monaragala District. Locations of the school and shops were taken via GPS devices. The proximity of the school neighborhood food destinations and number of food outlets at the one mile distance around each school were calculated using ArcGIS 10.4 software. Spearman correlation was used to determine the associations within variables.

Results

Mean BMI of the students was 18.15 ± 3.29 kgm^{-2} and average numbers of fast-food outlets at the one mile distance around a school were 3 ± 2, while average distance to the nearest fast-food outlet was 0.134 ± 0.052 miles. It was observed that 8.3% of the study participants were overweight. The study demonstrated a poor association between BMI with number of fast-food outlets at one mile distance.

Conclusion

In conclusion, number of fast-food outlets around the schools at one mile distance or the distance to the nearest fast-food outlet is not directly associated with childhood obesity among school children in Monaragala District.

Oral Presentation – 04

The total polyphenol content, antioxidant and phytochemical profile of edible green leaves widely consumed in Sri Lanka

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Introduction

Antioxidant activity is one of the most important biological properties exhibited by plant polyphenols. Edible green leaves which are frequently consumed by Sri Lankans are considered as rich sources of natural antioxidants. Objective of this study was to determine the antioxidant and phytochemical profile of ten edible green leaves in Sri Lanka.

Methods

Coarsely ground, dried green leaves were refluxed and extracted in distilled water. Total phenolic content was evaluated using Folin-Ciocalteu reagent and antioxidant properties were determined using FRAP (Ferric reducing antioxidant potential) and DPPH (2,2-diphenyl-2-picrylhydroxyl hydrate) assays. Phytochemical screening was performed for saponin, anthracene glycoside, cyanogenic glycoside, polyphenols, cardenolide glycosides, reducing sugar, proteins, alkaloids, flavonoids, and tannins.

Results

Centella asiatica (Gotukola) and *Ipomoea aquatica* (Kankun*)* showed the highest total polyphenolic content followed by *Sesbania grandiflora* (Kathurumurunga). The best IC_{50} value for the DPPH assay and the highest FRAP value were observed for *C asiatica* and *Alternanthera sessilis* (Mukunuwenna) showed relatively lower antioxidant activity among the green leaves studied. Saponin, polyphenol compound, reducing sugar, alkaloids, and flavonoids were present in the green leaves studied. However, protein, anthracene glycoside, and cyanogenic glycosides were absent in all plants investigated.

Conclusions

The edible green leaf, *C asiatica* showed the highest antioxidant activity compared to the other green leaves studied. This study provided evidence that the green leaves commonly consumed by Sri Lankans in their diet are good sources of natural antioxidants and reinforces the common belief that it is important to have them regularly in our daily diet.

Oral Presentation – 05

Surgical treatment for valvular heart disease: A single center experience from Sri Lanka

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Introduction

Valvular heart surgeries (VHS) account for 20% to 35% of procedures in adult cardiac surgical centers in the world. In USA and Europe there has been a strong move to repair rather than replace valves to avoid problems of lifelong warfarin. Valve repair requires intraoperative transesophageal echocardiography (TEE) and experts who can perform it and liaise with the surgeon during surgery to ensure a good repair. VHS have been extensively reviewed in USA and Europe but not so in Sri Lanka. Therefore, local management decisions are based on "international data" that may not adequately represent actual conditions.

Methods

Data from the logbook containing all operations maintained in a single surgeon-led cardiothoracic unit from August 2010 to July 2020 was reviewed retrospectively to identify all VHS. Isolated and combined VHS involving all four heart valves were included. Valve repairs secondary to other major repairs were excluded.

Results

VHS accounted for 177/1135 (15.6%) of the workload of the unit. There were 106 (59.8%) males. The mean age was 51.5 years. The valves involved were: mitral (n=118; 56.9%), aortic (n=74; 36.1%), tricuspid (n=10; 4.8%) and pulmonary (n=3; 1.5%). The commonest haemodynamic pathology was mitral regurgitation (n=88; 49.7%) and the commonest etiology, rheumatic heart disease (n=78; 44.1%).

There were 152/177 (85.9%) valve replacements, 20/177 (11.3%) repairs, and in 5/177 (2.8%) a combination of both. Of the replacements, 25/152 (16.5%) patients had tissue valves while 127/152 (83.5%) had mechanical valves which essentially need life-long warfarin. Of the repairs, 34.6% were mitral valve repairs. These were done using intraoperative static water testing instead of TEE which was not available. The morbidity was 5/177 (2.8%) and mortality 15/177 (8.5%).

Conclusions

This study has established for the first time, baseline data of VHS in a single center in Sri Lanka, which will be useful for planning and research.

Oral Presentation – 06

Comparison of Heart Rate Variability (HRV) between professional hockey players and untrained healthy controls

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Introduction

Heart rate variability (HRV) is the beat-to-beat variation of the heart rate and is a reflection of the autonomic control of the heart. Low frequency (LF) and high frequency (HF) bands are short-term HRV indices that reflect sympathetic and parasympathetic activity of the heart respectively, while LF/HF ratio indicates sympatho-vagal balance. Comparing HRV indices of athletes with sedentary healthy controls is important to identify training induced changes in cardiac autonomic functions. The aim of this study was to compare HRV of professional hockey players in Sri Lanka with untrained healthy controls, and to identify training-induced adaptations in autonomic functions of the heart.

Methods

Age and gender matched 27 professional hockey players and sedentary controls were recruited for this study. Each group included 16 males and 11 females. Hockey players had their training for 3 days per week, 3 hours per day. They had playing experience of more than 2 years at competitive level. Five minute recordings of ECG were obtained through Power-Lab data acquisition device and LF, HF and LF/HF in HRV analysis were acquired. Resting heart rate (RHR) and blood pressure (BP) were also measured using the Power-Lab. Independent sample t-test was used to compare HRV indices of hockey players with untrained controls.

Results

Mean age of the athletes and healthy controls were 26.2 ± 4.7 and 25.5 ± 2.4 years, respectively. RHR was significantly lower in male and female athletes comparing with the controls ($p<0.05$). The LF/HF ratio and systolic BP were significantly lower in male hockey players ($p<0.05$) compared to controls while there was no significant difference in females. However, LF and HF indices of HRV did not show a significant difference in either males or females when comparing the hockey players with controls.

Conclusion

Training for playing hockey at competitive level has had a significant effect on sympatho-vagal balance, resting heart rate and blood pressure in this group of professional male hockey players.

Oral Presentation – 07

Risk factors for the development of cardiac dysfunction among breast cancer patients who received anthracycline chemotherapy at Teaching Hospital Karapitiya

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Introduction

Although anthracyclines have made remarkable advances as chemotherapy, clinical utility is hampered with its dose dependent cardiotoxicity. Various clinical risk factors have been identified in the development of cardiotoxicity including pre-existing cardiac disease, age >65 years, hypertension, hyperlipidemia and radiation exposure among cancer patients. The objective of this study was to investigate the risk factors related to cardiotoxicity among the breast cancer patients who received anthracycline chemotherapy at the Teaching Hospital, Karapitiya.

Methods

A prospective cohort study was performed on 196 patients. Patients with pre-existing cardiac disease and hypertension were excluded. A data extraction sheet was given and echocardiography measurements were obtained on each patient; 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.

Results

A reduction of left ventricular ejection fraction (LVEF) of 10% which was considered as sub-clinical cardiac dysfunction was observed in 33.16% patients six months after the completion of chemotherapy. BMI was the most independently associated ($p<0.05$) risk factor in these patients. Overweight patients had odds ratio (OR) of 4.02 and obese patients had OR of 4.21 with reference to the patients having a healthy weight. The second significantly associated ($p<0.05$) risk factor for the occurrence of sub-clinical cardiotoxicity was the treatment with chest wall radiation which showed an OR of 1.33. Although other cardiac risk factors including age >60 years, dyslipidaemia and trastuzumab administration also had an independent association with the occurrence of sub-clinical cardiotoxicity with OR >1, they were not significant.

Conclusion

Overweight, obesity and mediastinal / chest wall irradiation were identified as major risk factors to develop sub clinical cardiotoxicity in patients who received anthracycline chemotherapy.

Oral Presentation – 08

Anti-inflammatory effects of ethanol, hexane and aqueous extracts of three Sri Lankan medicinal plants: An *in vitro* study

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Introduction

Kalanchoe laciniata (Akkapana), *Asparagus falcatus* (Hathawariya), and *Eleusine indica* (Balathana) are popular among Sri Lankan ayurvedic medical practitioners in the preparation of anti-inflammatory therapeutics. However, the *in vitro* anti-inflammatory effect of these plants has not been studied scientifically. The aim of the present study was to evaluate the anti-inflammatory activity of the aqueous, hexane, and ethanol extracts using the human red blood cell membrane stabilization (HRBC) method.

Methods

Using heat-induced membrane stabilization assay, the percentage of membrane stabilization was determined in the presence of different concentrations of ethanol, hexane, and aqueous extracts of each plant against diclofenac sodium as the positive control. The absorbance of the control and the test samples were measured at 540 nm and percentage inhibition of hemolysis was calculated.

Results

Ethanol, aqueous, and hexane extracts of *Kalanchoe laciniata* and *Eleusine indica* showed percentage inhibitions of 86.77%, 66.34%, 30.44%, and 63.14%, 44.15%, 26.12% respectively compared to diclofenac sodium (96.19%) at 1000 µg/ml. The potency of ethanol, aqueous, and hexane extracts of *Asparagus falcatus* were 47.73%, 40.68%, and 27.75%, respectively. All extracts showed a dose-dependent significant ($p<0.01$) anti-inflammatory activity.

Conclusions

Ethanol extracts of all three plants showed higher anti-inflammatory activity compared to aqueous, and hexane extracts. Ethanol extract of *Kalanchoe laciniata* was the most effective compared to other extracts. Phytochemicals identified may be responsible for the anti-inflammatory effect and further analysis involving fractionation and identification of active constituents would allow us to identify the compounds responsible for the anti-inflammatory effect of these plant extracts.

Oral Presentation – 09

Clinical correlates of three different metrics of glycosylated haemoglobin during two-year period in patients with type 2 diabetes

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Introduction

Associations of different glycosylated haemoglobin (HbA1c) metrics such as its mean, visit to visit variation and the trajectory in patients with type 2 diabetes (T2DM) remain less explored. We aimed to study associations of mean, coefficient of variation and the gradient of the HbA1c trajectory over two years with several clinical correlates in T2DM patients.

Methods

Demographic data and serial HbA1c measurements carried out at the same laboratory (minimum of six) over two years were obtained from the clinical records of 103 patients with T2DM. Associations between clinical variables and HbA1c mean, coefficient of variation (CV) and gradient of HbA1c trajectory were studied with Pearson correlation coefficient and ANOVA.

Results

Mean (SD) age and duration of diabetes of 103 patients (54.37% males) were 54.5 (8.82) and 9.1 (4.28) years respectively. Upward and downward HbA1c trajectories were seen in 66.02% and 33.98% patients, respectively.

HbA1c gradient had significant associations with weight at diagnosis (r=-0.23, p=0.02) and weight at assessment (r=-0.24, p=0.02). Mean HbA1c showed significant associations with the age at diagnosis (r=-0.2, p=0.04), the number of used oral hypoglycaemic agents (Spearman correlation coefficient r_s=0.48, p=0.01) and gender (p=0.02, ANOVA). CV of HbA1c had significant association with number of cardiovascular comorbidities (r_s=0.24, p=0.01) and presence of dyslipidemia (p=0.04, ANOVA).

Conclusions

Different metrics of HbA1c vary in their associations with demographic and clinical correlates of patients with diabetes. These observations could explain the individual variations in pathogenesis of chronic hyperglycaemia related complications in patients with diabetes.

Oral Presentation – 10

Development of a sandfly anti-salivary gland-SG747-IgG antibody-based urine enzyme-linked immunosorbent assay (ELISA) for cutaneous leishmaniasis risk mapping using geographic information systems (GIS) in Sri Lanka

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Introduction

Sri Lanka needs a paradigm shift in its control of cutaneous leishmaniasis (CL) which demands accurate disease distribution maps. However, a proper mapping tool is lacking. Aim was to develop a new mapping tool using antibody titres against a sandfly salivary gland antigen-SG-747.

Methods

Serum and urine of a cohort of CL patients from Hambantota, Japanese-controls (JC) and urine from endemic-controls (EC- Hambantota) and endemicity unknown controls (EUC- Nuwara-Eliya) were examined for IgG antibody titres against SG-747 salivary-antigen of *Phlebotomus argentipes*. Validation was done using non-endemic sera, and cutoffs were developed using ROC analysis. Anti-SG-747 urine IgG titres were converted to binary values and combined with GPS coordinates to create sampling points. Probability of exposure was estimated by Support Vector Machine (SVM) analysis and GIS-based hotspot mapping.

Results

There were 190 CL patients (JC=40; EC=255 and EUC=344). Serum (S) and urine (U) ELISA IgG titres among CL cases were moderately and significantly correlated (r^s=0.504; p<0.01). Among CL cases seroconversion rates (S=88.3% and U=73.9%) were significantly higher compared to JCs (S=2.5% and U=37.5%), ECs (U=29.8%) and EUC (U=54.7%). Both serum and urine ELISA identified seroconversion in >70% of CL cases. Occurrence patterns of CL cases were highly correlated with the spatial distribution of the higher vector exposure index (Hot-High, Cold-Low; r^s = 1.000; p<0.01).

Conclusions

Anti-SG-747 urine ELISA can be successfully used to observe the spatial distribution of vector exposure and risk of CL. It is a promising, non-invasive tool for risk mapping in CL.

Oral Presentation – 11

Agreement between bioelectrical impedance analysis and dual energy X-ray absorptiometry for the measurement of body composition indices in obese children aged 5-15 years

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Introduction

The main aim of the management of childhood obesity is to reduce fat mass (FM) while preserving fat free mass (FFM) during weight loss. Although dual X-ray absorptiometry (DXA) is the reference standard for the measurement of body composition indices, its utility is limited due to the high cost, expertise required, lack of portability and restricted availability. Objective of this study was to determine whether Bioelectrical Impedance Analysis (BIA) represents a viable alternative to DXA for the assessment of body composition indices in overweight and obese children in community settings.

Methods

Ninety seven children aged 5-15years who had a BMI $\geqslant$ 85th percentile for age and gender based on the CDC 2000 growth charts were recruited. FM, percentage fat mass (% FM) and 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

Fifty seven boys with a mean age±SD of 10.8±2.4 years and 40 girls with a mean age±SD of 10.3±2.6 years participated in the study. Significant differences were observed in the FM (p=0.001) and the FFM (p=0.018) measurements made by DXA and BIA indicating an accuracy error with BIA but not with % FM. The % FMs measured by both DXA and BIA showed a liner relationship with BMI. According to the Bland Altman plots, there was a concordance between DXA and BIA with 95% of values observed within the limits of agreement. A higher SEE was observed for the mean difference for FM {-2.08 (-3.44 to -0.71)}, FFM {1.52 (0.32 to 2.72)} and % FM {-2.18 (-4.49 to 0.13)} among boys compared to girls between DXA and BIA.

Conclusion

Although few limitations were observed, BIA can be an alternative to DXA in the measurement of body composition in obese children.

Oral Presentation – 12

Adverse drug reactions reported during the active surveillance in Teaching Hospital, Karapitiya

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Introduction

Adverse drug reactions (ADRs) rank as the fourth leading cause of death in the western world. It increases hospital cost as they often lead to hospital admission, prolongation of hospital stay and emergency department visits. Hence an efficient surveillance of ADRs is important in taking actions to minimize the incidence of ADRs. The aim of this study was to determine the ADR pattern in inward patients of Teaching Hospital Karapitiya (THK).

Methods

An audit was done using the data collected during an active surveillance in THK from January 2017 to June 2020. The ADRs were categorized according to the severity by Modified Hartwig and Siegel scale. They were further analyzed to assess the causative drugs.

Results

Of the total 126 ADRs collected, 52.4% (n=66) were in females. The mean age (SD) of the patients was 43 (22) years. Out of ADRs collected 66 (52.4 %), 30 (23.8%), and 30 (23.8%) were categorized as mild, moderate and severe reactions, respectively. Seventy seven (61.1%) of them were due to antibiotics. Among the antibiotics, 26% and 16.9% were due to ciprofloxacin (n=20) and co-amoxyclav (n=13) respectively. The severity of ADRs due to ciprofloxacin was mild in 80% (n=16) of patients and only one (5%) developed anaphylaxis. Further 61.5% (n=8) of co-amoxyclav ADRs were anaphylaxis reactions. Out of the 126 reactions, 10 (7.9%) were due to non-steroidal anti-inflammatory drugs and paracetamol while nine (7.1%) were due to blood products.

Conclusions

Significant severe ADRs have been reported in the THK during last three years. Most of them were due to antibiotics.

Poster Presentations – 01

The knowledge and the factors determining the knowledge on first aid care in a cohort of nursing officers working in Teaching Hospital, Karapitiya

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Introduction

First aid is the initial treatment given to a victim to save the life or to reduce the damage caused by an injury before the arrival of a medical practitioner or sending the victim to a hospital. Studies performed to assess the knowledge of first aid among the nursing officers in Sri Lanka are sparse.

Objective

The study was aimed to assess the knowledge on first aid and the factors determining the knowledge on first aid among the nursing staff at the Teaching Hospital, Karapitiya (THK).

Materials and Methods

Participants were selected among the nursing officers of all the wards and special units of the THK using a non-probability convenient sampling method. Data were collected using a self administered pretested questionnaire which contained questions to assess the knowledge. Answers for each question were given a score.

Results

Total number of sample was 400 with 359 (89.80%) females and 41 (10.20%) males. Their working experience ranged from 10 to 19 years. A higher number of participants were form medical wards (69; 17.25) followed by emergency units (66; 16.5) and surgical wards (56; 14%). Majority of the participants (356; 89%) had god knowledge (score: 55-72) and 43 (10.75%) had moderate knowledge while, 3 (0.75%) had poor knowledge. Mean knowledge score was (62.11±6.57). Level of knowledge was different when considering the different types of emergencies. In contrast, nurses working in the emergency unit had a significant difference in knowledge when compared with the other units ($p<0.001$). Similarly, the female gender ($p=0.015$) and the working experience ($p=0.002$) affected the knowledge.

Conclusion

Majority of the participants had good knowledge while working experience, female gender and working in emergency units showed a positive correlation with the knowledge on first aid.

Poster Presentations – 02

Risk factors associated with diabetes status determined by fasting plasma glucose, glycated hemoglobin and fasting serum fructosamine in newly diagnosed patients with diabetes mellitus

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Background

Early identification of type 2 diabetes mellitus (T2DM) based on diagnostic tools and associated risk factors is important in the management of diabetes and its complications. We aimed to assess associations between selected risk factors of T2DM and the diabetes status diagnosed by fasting plasma glucose (FPG) concentration, percentage of glycated hemoglobin (HbA_{1C}) and fasting serum fructosamine concentration.

Methods

Data on age, gender, body mass index (BMI), waist circumference (WC) and self-reported family history of T2DM among first degree relatives were obtained from 145 patients with newly diagnosed T2DM (30-60 years) based on FPG concentration. Percentage of HbA_{1C} and fasting serum concentration of fructosamine were estimated. Logistic regression was used to calculate the association between the risk factors of T2DM (independent variables) and the diabetes status as determined by FPG $\geqslant 6.99$ mmol/L, $HbA_{1C} \geqslant 6.3$ % and fructosamine $\geqslant 0.45$ mmol/L (dependent variable).

Results

Mean age, BMI and WC of the study population were 48.48 ± 7.13 years, 25.16 ± 3.98 kg/m^2 and 88.81 ± 9.06 cm respectively. Of the 145 study subjects, 37.9% were males, 62.1% were females and 46.9% had a family history of diabetes among first degree relatives. The presence of diabetes status based on all three biochemical tests of FPG, HbA_{1C} and serum fructosamine was 23.4%. In the regression analysis, increased BMI was associated with significantly high odds (OR=1.24, CI 1.06 – 1.45, *p*=0.001) of having diabetes with all three diagnostic tests.

Conclusion

Out of all the selected risk factors, only rising BMI is strongly associated with diabetes status diagnosed by FPG, HbA_{1C} and fructosamine in the selected cohort of newly diagnosed patients with T2DM.

Poster Presentations – 03

The workload, outcome and waiting time of cardiothoracic operations: An audit performed at a single unit in Sri Lanka

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Introduction

Heart disease, especially ischaemic heart disease, is the commonest cause of death world-wide. Its surgical treatment is expensive, and resources are limited. The commonest cardiac operation in the world is Coronary Artery Bypass Grafting (CABG) followed by valvular heart surgery (VHS). The international mortality rate for CABG is 3% and the acceptable waiting time for elective surgery is 6-8 weeks. We have no scientific data pertaining to the above in cardiothoracic units in Sri Lanka. Our objective was to study the workload, outcome and waiting time of cardiothoracic operations in a single unit in Sri Lanka.

Methods

Data extracted from the clinic register and operation logbooks maintained at the unit for the last 10 years from August 2010 to July 2020 were reviewed retrospectively.

Results

Of 1135 patients, 782 (68.8%) were males. The mean age was 50.9 (SD 17.1) years. Coronary artery bypass grafting (CABG) was the commonest operation (n=595; 52.4%) performed. The remaining were thoracic operations (n=214; 18.9%), VHS (n=163; 14.4%), correction of congenital anomalies (n=90; 7.9%) operations for cardiothoracic trauma (n=22; 1.9%), excision of cardiac tumours (n=14; 1.2%) and operations for aortic aneurysms / dissections (n=6; 0.5%). There were 31 (2.7%) Extracorporeal Membrane Oxygenation (ECMO) procedures. Urgency categories were elective (n=876; 77.2%), urgent (n=192; 16.9%), emergency (n=36; 3.2%) and salvage (n=31; 2.7%). Morbidity consisted of reopening (n=17; 1.5%), wound infection needing surgical intervention (n=6; 0.6%) and cerebral infarction (n=5; 0.4%). The mortality rate for elective surgery was 3.1% (27/876) and that of CABG, 2.2% (13/594). In the first half of 2020, the average waiting time was 214 days; the death rate while waiting for surgery was 4.3%.

Conclusion

Coronary, thoracic and valvular operations are the commonest operations in this unit. The mortality rate for the index cardiac operation, CABG is within international standards. The waiting times are unacceptably long. This study provides a baseline for future research/audit to prioritize capacity building.

Poster Presentations – 04

Knowledge of the disease condition, counselling, alternative practices and social impact to the family among the children with cerebral palsy treated at Lady Ridgeway Hospital (LRH), Colombo, Sri Lanka

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Introduction

The number of children with cerebral palsy (CP) is increasing mainly due to the increased survival of premature babies. There are problems of parental awareness, follow up and related social problems in these children. Understanding the gaps in those areas would help in better care of the children with CP.

Objectives

To assess the parental knowledge, gaps in counselling, alternative practices used and social impact to the family among the CP patients treated at LRH.

Methods

A descriptive cross-sectional study included 300 diagnosed CP patients under 12 years, treated at medical clinics or in medical wards. Data were collected using an interviewer administered questionnaire after taking informed written consent.

Results

Majority (56.3%) of children were males, 82.3% were Sinhalese. 47% of the children had to travel more than 100km to reach the LRH. Majority (86.3%) of children were spastic, Gross Motor Function Classification System (GMFCS) stage of either IV or V. 74.3% of care givers had satisfactory knowledge on child's disease status and 61% have received satisfactory counselling. Only 8.3% families had high social impact. Almost all (97.3%) attend rehabilitation followed by Neurology clinic (66%). Overall, 43.3% of patients have tried alternative medical streams. Mothers' education up to Advanced level (A/L) and above and Sinhalese ethnicity were significantly associated with high level of knowledge about child's disease (p=0.05).

Conclusion

Majority of care givers had satisfactory knowledge on child's disease and received satisfactory level of counselling. Less than 10% of families had high adverse social impact due to child's disease.

Poster Presentations – 05

Incidence and morphology of Rectus sternalis muscle in a group of Sri Lankan subjects: A cadaveric study

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Introduction

Rectus sternalis is an uncommon but clinically important muscle in the pectoral region. The knowledge of its incidence is important for radiologists who interpret breast imaging to avoid false positive reports of breast lesions.

Objectives

The study was aimed to understand the morphology of the muscle and to identify its incidence in a group of Sri Lankan subjects.

Methods

Presence of rectus sternalis was observed over a 10 year period during the educational dissection of cadavers at the Department of Anatomy, Faculty of Medicine, University of Ruhuna. The location of the muscle and its attachments were recorded and photography was taken. The dimensions of the muscles were recorded in millimeters with a vernier caliper.

Results

There were 175 cadavers of both sexes: male (n=93, 53%), female (n=82, 47%). We encountered 2 (1.4%) rectus sternalis muscles in one male and a female cadaver. Both of them were unilateral. The origin and the insertion of both muscles were similar. When considering its dimensions, the muscle in the female cadaver was larger than that in the male.

Conclusion

This study gives baseline information of the incidence of the rectus sternalis muscles in Sri Lankan subjects. The incidence in our subjects is in the lower range when compared with the other studies. The knowledge of its presence is important in performing interventional and imaging procedures in the region.

Poster Presentations – 06

A regression model to predict anaerobic capacity of male hockey players in Sri Lanka

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Background

Anaerobic capacity is an essential component for achieving success in the sport of hockey. Mean-power is a marker of anaerobic capacity, which is assessed by supra-maximal Wingate-test. Laboratory facilities required to perform this test are not easily accessible for hockey players in developing countries. Thus, alternative methods are needed to predict anaerobic capacity of hockey players. Therefore, the aim of this study was to develop a regression model to predict mean anaerobic-power of male hockey players as an indicator of anaerobic capacity.

Methods

Height was measured using a stadiometer and weight was measured using a balance-beam scale in 23 male hockey players. Body-fat percentage was quantified using bioelectrical-impedance analysis (Omron-HBF-306) and back-muscle strength was measured using a back muscle dynamometer (T.K.K.-5002). Monark-Ergomedic 894E cycle-ergometer was used to perform the Wingate-test and mean anaerobic-power was calculated using Monark anaerobic-test software. Pearson's correlation test was used to assess the correlation between mean anaerobic-power with other variables. A regression-model for the mean anaerobic-power was developed via step-wise method.

Results

All variables were normally distributed and mean anaerobic-power significantly correlated with all measured variables. Only weight and back-muscle strength were included in the regression-model as predictors of mean anaerobic-power while height and body-fat were automatically excluded from our model at the stepwise regression modelling process. The final regression model is as follows: Mean anaerobic-power (W) = -208.101 + (6.931*weight in kg) + (2.373*back-muscle strength in kg). This regression model can explain 79.4% of the total variation of mean anaerobic-power.

Conclusion

Mean anaerobic-power of male hockey players can be predicted using the equation = -208.101 + (6.931*weight in kg) + (2.373*back-muscle strength in kg).

Poster Presentations – 07

Efficacy of current management protocol on candiduria in a tertiary care hospital, Sri Lanka

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Introduction

Candiduria can occur due to reasons including broad spectrum antibiotics, catheterization, and co-morbidities. Management of candiduria is not well-documented and may be ignored while it can serve as a marker of life-threatening candidaemia.

The objective of this study was to determine the efficacy of the local protocol for management of candiduria in a tertiary care hospital, Sri Lanka and to assess associated factors.

Methods

For 3 months from April 2019, 191 positive urine cultures (UC) with *Candida* were identified and all first-time positives were asked to repeat immediately after changing the catheter if any. Fourteen with simultaneous candidaemia were excluded as the management was different. Treatment was considered in positive repeat UC with factors like ongoing fever, high CRP, or urinary symptoms and such patients were followed-up.

Results

Adherence to the repeat-culture protocol was 72.8% (129/177). Significant candiduria was diagnosed in 49% (87/177) while 23.7% (42/177) were considered as colonization with negative repeat sample and no symptoms. Urinary catheterization (p=0.001), diabetes mellitus (p=0.003) and chronic kidney disease (CKD) (p=0.047) had significant association with candiduria. Treatment with monitoring was completed in 58 patients while 29 were lost to follow-up. Oral fluconazole for 14 days was effective in the clearance of candiduria in 72.4% of them, whereas 27.6% became culture negative in 7 days. Overall adherence to the protocol was 56.5% (colonization plus completely treated per 177) and the efficacy was calculated as 77% (100/129).

Conclusion

Oral fluconazole 7-14 days can be used to treat significant candiduria. Efficacy of the current protocol in candiduria management was 77%.

Poster Presentations – 08

Clinico-demographic profile of patients who underwent head imaging due to traumatic head injuries: Emergency Department of Teaching Hospital Kandy, Sri Lanka

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Introduction

Trauma is a major public health problem in Sri Lanka and accounts for the major health burden to the country. Objective of this study was to describe the epidemiological and clinical profile of adult patients with traumatic head injuries who had cranial computed tomography (CT) scanning and skull X-rays in emergency treatment unit (ETU), National Hospital, Kandy, Sri Lanka.

Methods

A prospective observational study was carried out from May to October 2016. Consecutive patients with head injuries who underwent cranial imaging were enrolled to the study. Age, gender, area, time and mechanism of injury, mode of transport to hospital, clinical features at presentation, mode of cranial imaging performed and the findings were recorded.

Results

Of the 468 patients, the majority were males (78%). Most of them belonged to the age groups of 21 - 30 years (23%) and 51-70 years (22%). Road traffic accident (RTA) (22.34%) and assaults (145; 30.98%) were the main causes of head injuries. Falling on ground level 97 (20.74%), falling from heights 47 (10.04%) and heavy objects falling overhead 24 (5.13%) contributed to 1/3 of the head injuries. Based on the Glasgow Coma Score (GCS) on admission, 87% had mild (GCS 13-15), 11% moderate (GCS 8-12) and 1.5% (GCS < 7) reported as severe head injury. Majority (74.6%) reached hospital within 6 hours of injury and three wheeled vehicles (61.11%) were the main mode of the transport. Of the total, 26.28% patients reported a loss of consciousness with a head injury while 23.50% reported nausea and vomiting. Laceration of the head and haematomas of the head accounted for the 19.28 % of presentations and 17.17% reported amnesia associated with a head injury. Total of 335 had computed tomography (CT) brain out of which 20 had skull fractures or cranial bleeding. The skull bones commonly fractured were parietal bones (n=45, 9.6%). Only 8 (5.08%) revealed skull fractures in X-rays among 149 patients who underwent skull X-rays. However, 20 (50.12%) showed fractures in X-rays of nasal bones and sinuses. Cerebral contusion (n=68, 14.64%) was the commonest finding in CT followed by Acute subdural haemorrhage 59 (12.62%) and extra-dural haemorrhage) 40 (8.54%).

Conclusion

RTAs and trauma are the leading causes of traumatic head injuries. GCS alone is a poor indicator in the assessment of the severity of head injuries in our study. The standard guideline should be followed when assessing head and neck injuries incorporating injury mechanisms and radiation exposure when deciding head imaging. Plain X-rays of nasal bone have high yield than skull X-rays when detecting fractures in head trauma.

Poster Presentations – 09

Prevalence of major vascular complications, non-vascular co-morbidities and indications for hospital admission among patients with diabetes mellitus admitted to medical units in Teaching Hospital, Karapitiya

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Introduction

Hospital admissions due to diabetes related complications are on the rise in Sri Lanka. We aimed to study the prevalence of micro and macrovascular complications and non-vascular comorbidities, indications for hospital admission in patients with diabetes mellitus admitted to medical units in a tertiary care hospital.

Methods

Hospital-based, cross-sectional study including 400 consecutive admissions of patients with diabetes to Teaching Hospital Karapitiya over six months was carried out. Diabetic peripheral neuropathy (DPN), diabetic retinopathy (DR) were screened with standard protocols by a medical registrar and evidence for diabetes nephropathy, presence of non-vascular co-morbidities and indication for admission were documented from medical records using a pretested data entry form. Statistical analysis was done using the SPSS software.

Results

One third (33.8%) had previous admissions during last year with significant female preponderance (66%). DPN and DR were detected in 55.4% and 52.9% respectively with significantly higher females. Diabetic nephropathy was diagnosed in 27.9% without significant gender variability. Nearly half (47.3%) of the sample were on drug treatment for hypertension. Four out of ten patients (39.4%) were on statins. Evidence of previous myocardial infarction or ischaemia on the ECG was reported in significantly higher percentage of females compared to males (72.8% vs. 27. 2%). Infections accounted for the highest number (142) of admissions with 52.8 % females.

Conclusion

A marginally higher number of females with diabetes related morbidity are admitted to state hospitals in Sri Lanka. DPN and DR are significantly higher among admitted females than in males. There is suboptimal use of statins for dyslipidemia among admitted patients. Infections account for the most frequent indication for hospital admissions among diabetic patients.

Poster Presentations – 10

Burnout and Job stress: Are they correlated? A study among doctors in Teaching Hospital Karapitiya

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Background

Burnout is defined as "a syndrome of exhaustion, cynicism and low professional efficacy". It is associated with decrease job performance and low career satisfaction. Due to the inherent demands of their profession, doctors are at great risk of suffering from job stress. Both together will frequently interfere with the professionalism and the responsibilities of a doctor.

Aim of this study was to determine the prevalence and association of burnout and job stress in doctors at Teaching Hospital Karapitiya.

Methods

This was a descriptive cross-sectional study using convenient sampling method. Self-administered questionnaires including basic information, Copenhagen burnout inventory (CBI) and Effort /reward Imbalance (ERI) questionnaire was used to record information.

Results

Number of participants was 202. Prevalence of personal, work related and client related burnout were 39.10% (95% CI 37.36% - 40.86%), 35.34% (95% CI 33.35% - 37.33%), 30.63% (95% CI 28.36% - 32.89%) respectively. Work related burnout was significantly associated with ongoing co-worker conflict in the work place (p=0.018). Client related burnout was significantly associated with practicing any coping method when feeling low (p=0.005). No other significant association was found with age, gender, marital status, work experience, engaging in private practice and financial satisfaction.

There was a mean value of 0.93 score (95% CI 0.90 - 0.95) in effort reward imbalance. 32.2% showed there is more effort than reward indicating a job stress. 65.3% did not show a job stress while 2.5% were neutral. Job stress was only significantly associated with marital status (p=0.019).

Conclusion

All three categories of burnout was less than 50% indicating doctors at TH Karapitiya had low burnout. Job stress and burnout were not correlated.

Poster Presentations – 11

Histopathological features of Ischaemic Heart Disease and other causes of sudden cardiac deaths

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Background

Sudden unexpected death due to cardiac reasons is the commonest entity encountered during day-to-day autopsy practice. The objective of this study is to identify the distribution and prevalence of features pathognomonic to ischaemic heart disease and compare them with other cardiac diseases.

Methods

The variables studied including body weight and height of the deceased, heart weight, thickness of left and right ventricles measured at one cm below the valves, and characteristics of myocardial fibrosis, wall-thickness of coronary arteries, morphology of atheromatous plaques in left main, anterior descending branch and right coronary arteries, degree of narrowing of coronary arteries were obtained during routine autopsy examinations. The prevalence of each variable was analysed together with the cause of death.

Results

According to the analysis of the underlying causes of death in 100 cases of the study group, combined effects of Hypertensive and Ischaemic Heart Disease (IHD) accounts for the majority of cardiac deaths [N-49], followed by 22 cases of Acute Myocardial Infarctions. Isolated hypertensive heart disease was responsible for 12 cases and there were 11 cases of isolated Chronic IHD [11%]. Other cases consisted of aortic stenosis [N=2], myocarditis [N-2], HOCM [N-1] and Alcoholic cardiomyopathy [N-1].

Conclusion

The combination of ischaemic and hypertensive changes of the heart appeared the most prevalent cause of sudden cardiac death followed by isolated ischaemic changes of the heart and coronary arteries. These findings can be utilized while formulating preventive measures.

Poster Presentations – 12

An audit on CT Colonography: Compliance with British Society of Gastrointestinal and Abdominal Radiology (BSGAR) CT colonography standards

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Introduction

Colorectal cancer is a major cause of cancer related morbidity and mortality. Computed Tomographic Colonography (CTC) is a relatively new minimally invasive radiological imaging modality that can be used for the purpose of screening and early diagnosis of colorectal carcinoma.

Objectives

To measure and compare the quality standards and performance indicators of the CTC studies of the centre with the CTC standards recommended by British Society of Gastrointestinal and Abdominal Radiography (BSGAR).

Methods

This audit was conducted at the Radiology Department of Withybush General Hospital of UK. The data of CTC studies including referral mode, presence of polyp or cancer and available optical endoscopy results in 197 patients were collected retrospectively for a period of 6 months using Picture Archiving and Communication System (PACS) Radiology Information System.

Results

The percentage of CTC studies rated diagnostic quality fulfilling minimal standards was 96.7%. Overall polyp detection was 10.8% and large polyp detection was 5.4%. More polyp detection noted in symptomatic population (11.4%) compared to screening, above 70 years' population (14.41%) compared to below 70 and rectosigmoid colon (60%) compared to rest of the colon. Cancer detection rate was 3.2%.

Conclusion

Imaging standards, polyp and cancer detection of CTC at Withybush Hospital are within standards. In CTC, sensitivity of findings is maintained despite wide variation in technique among centres, which is important with regard to widespread implementation of this investigation.