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## Sri Lanka Medical Association

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### Abstracts

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**Results:** The combination of low dose of allopregnanolone with low dose of sodium valproate showed a similar beneficial effect to that of a higher dose of sodium valproate in significantly reducing the number of kindled animals (0/8) as compared to PTZ control group (5/8) as well as the seizure scores and the histopathological scores. The combination significantly decreased the oxidative stress by lowering the malondialdehyde levels and increased the super oxide and reduced glutathione levels in the hippocampus of rats. The data suggest the synergistic interaction between allopregnanolone and sodium valproate as anticonvulsant agents.

**Conclusion:** The study suggests anti kindling synergism between sodium valproate and allopregnanolone. It helps to reduce the dose of sodium valproate and thereby reduces the incidence of adverse effects.

#### OP003

##### Fat percentage derived BMI cut-offs for Sri Lankan adults

Jayawardena R<sup>1</sup>, Thennakoon SN<sup>2</sup>, Hills AP<sup>3</sup>

<sup>1</sup>Faculty of Medicine, University of Colombo

<sup>2</sup>Diabetes Research Unit, Faculty of Medicine, University of Colombo

<sup>3</sup>University of Tasmania

**Introduction and Objectives:** Obesity has become a major public health problem in Sri Lanka. However, the absence of fat percentage derived BMI cut-offs limit both clinical and public health decisions. The aim of this study was to derive BMI to define obesity for Sri Lankan men using deuterium dilution technique.

**Methods:** Demographic and anthropometric measurements were collected from a representative sample. Fat mass was estimated using the isotope (D2O) dilution technique based on the two-compartment model. Receiver-operating characteristics (ROC) curve analysis was carried out to determine the appropriate cut-offs of BMI at adiposity levels of 25% for men and 35% for women as the gold standards.

**Results:** A total of 258 subjects (M=99, F=159) completed the study; the mean age was 43.8 (±12.9) for men and 45.6 (±12.8) for women respectively. Majority were Sinhalese and from urban residential areas. Mean BMI values were 23.0 kg/m<sup>2</sup> (4.2) for men, and 24.8 kg/m<sup>2</sup> (4.5) for women. Fat percentage derived BMI values for men and women were 22.9 kg/m<sup>2</sup> (sensitivity 86.1, specificity 87.5, PPV=84 and NPP=89) and 23.3 kg/m<sup>2</sup> (sensitivity 87.5, specificity 83.6, PPV=91 and NPP=78) respectively. The areas under the curve for ROC curves were 0.91 (0.85-0.97) (P<0.001) for men and 0.93 (0.89-0.97) (p<0.001) for women. Both BMI of 25 and 30 cut-offs underestimated obesity among Sri Lankan adults.

**Conclusion:** Fat percentage derived BMI value was around 23 kg/m<sup>2</sup> irrespective of the gender. The results suggested to use lower BMI cut-offs for identification of obesity among Sri Lankan adults.

#### OP004

##### Development of herbal sunscreen formulations from the Sri Lankan medicinal plant, *Leucas zeylanica*

Napagoda MT<sup>1</sup>, Malkanthi BMS<sup>1</sup>, Abayawardana SAK<sup>1</sup>, De Soya WSG<sup>1</sup>, Witharana S<sup>2</sup>, Jayasinghe L<sup>3</sup>

<sup>1</sup>Department of Biochemistry, Faculty of Medicine, University of Ruhuna, Sri Lanka

<sup>2</sup>Faculty of Engineering, Higher Colleges of Technology, United Arab Emirates

<sup>3</sup>National Institute of Fundamental Studies, Kandy, Sri Lanka

**Introduction and Objectives:** The incidence of various diseases related to the excessive exposure to solar ultraviolet (UV) radiation has increased alarmingly over the recent years. Due to the adverse effects associated with the synthetic sunscreen products, there is a high demand for herbal sunscreens to be used as a preventive measure against the exposure to harmful UV radiation. Therefore, the present study focuses on the development of herbal sunscreens from the popular medicinal plant, *Leucas zeylanica* (Gata-thumba).

**Methods:** Hydroalcoholic extract of *L. zeylanica* was incorporated into the aqueous cream base at different percentages (25%, 50% and 75%). UV absorption measurements were obtained for each formulation to determine its UV filtering potential and subsequently the sun protection factor (SPF). A commercial synthetic sunscreen and



the aqueous cream base were used as positive and negative controls respectively, to compare the efficacy of the herbal formulations.

**Results:** The results clearly indicated that the formulation containing 75% of the extract was superior to other two formulations as well as the commercial sunscreen product, due to the high SPF, photostability and broad-spectrum of UV absorption. This formulation was found to be photostable as it has not displayed any significant reduction in its SPF value (26.7) after exposure to direct solar radiation for 21 days. Moreover, the high UV absorbance in 260-370 nm range was evident for the broad-spectrum sunscreen potential.

**Conclusion:** This study demonstrated the suitability of *Leucas zeylanica* to be developed into a commercial herbal sunscreen and the experiments are in-progress to enhance its bioavailability via nanotechnology.

#### OP005

#### Bio-available folate deficiency and its association with adiposity among primary school children aged 8-9 years in Colombo Municipal Area

Kalaichelvi T<sup>1</sup>, Thoradeniya ST<sup>1</sup>, Wickramasinghe VP<sup>2</sup>, Samaranyake D<sup>3</sup>, Lanerolle P<sup>1</sup>

<sup>1</sup>Department of Biochemistry and Molecular Biology, Faculty of Medicine University of Colombo

<sup>2</sup>Department of Paediatrics, Faculty of Medicine University of Colombo

<sup>3</sup>Department of Community Medicine, Faculty of Medicine University of Colombo

**Introduction and Objectives:** Folate plays a critical role in diverse metabolic pathways including lipid metabolism. Therefore the present study assessed the association between the bio available folate (serum folate) and adiposity among the primary school children attending government schools.

**Methods:** A case- control study design was conducted where cases and controls comprised of boys (n=161) and girls (n=163) with high (boys- >28.6%, girls-> 33.7%) and normal (boys≤28.6% , girls≤33.7%) body fat. Percentage body fat (bio electrical impedance analysis), folate (serum and RBC), anthropometry were measured. Socio demographic factors, diet and physical activity were assessed by interviewer administered questionnaires. Chi-square and binary logistic regression were used as statistical tools.

**Results:** Significantly higher % of cases (boys-42%, girls- 32.9%) had folate (serum) deficiency (≤4ng/mL) compared to the controls (boys-22.5%, girls- 17.9%) whereas nearly equal % (12-15) of cases and control had deficient levels (<151ng/mL) of RBC folate. Lower levels of serum folate were seen in boys (4.89±1.92ng/mL, p=0.009) and girls (5.22±2.55ng/mL, p>0.05) with high adiposity whereas, higher levels of RBC folate were noted among the boys (230.26±65.15ng/mL, p=0.001) and girls (222.68±57.58ng/mL, p>0.05) with high adiposity. Children with folate (serum) deficiency were nearly 3 times more likely to have high % body fat than the sufficient ones (Adjusted odd ratio for diet and physical activity- 2.606 (95% CI 1.088-6.245) and 2.950 (95% CI 1.028-8.465) for boys and girls respectively).

**Conclusion:** Serum folate level is an independent factor significantly associated with adiposity among the children aged 8-9 years.

#### OP006

#### A quick march towards the goal: Successful source finding in a hospital outbreak of bacteraemia

Patabendige CGUA<sup>1</sup>, Perera WPDP<sup>1</sup>, Vathshalan S<sup>1</sup>, Abeydeera WPH<sup>1</sup>, Caldera TSKRD<sup>1</sup>, Liyanage N<sup>1</sup>, Thennegedhara AL<sup>2</sup>, Liyanapathirana V<sup>2</sup>, Kothalawala M<sup>3</sup>

<sup>1</sup>National Hospital of Sri Lanka

<sup>2</sup>Faculty of Medicine, University of Peradeniya

<sup>3</sup>Teaching Hospital, Kandy

**Introduction and Objectives:** *Burkholderia cepacia* complex (BCC) is an opportunistic pathogen capable of surviving in a variety of hospital microenvironments causing nosocomial infections through contaminated disinfectants, nebulizer solutions, mouth wash, medical devices, local applications and intravenous solutions. Outbreaks of BCC bacteraemia were first reported in three major hospitals between July and August 2017 while number of blood culture isolates of BCC remained static at NHSL. By mid August, there was a sudden augmentation in number of blood culture isolates of BCC from ICUs at NHSL.