REGISTERED AT THE DEPARTMENT OF POST QD/138/NEWS/2021

SLMA NEWS+

The Official Magazine of The Sri Lanka Medical Association

www.slma.lk

NOVEMBER 2021 | VOLUME 14 | ISSUE 11 | ISSN: 1800-4016 (PRINTED) eISSN: 2550-2778 (ONLINE)

SCAN THIS CODE TO READ ONLINE

Monthly theme: STROKE

Adverse events occur not due to bad people, but due to bad systems

Timely and accurate reporting leads to;

- Generation of "**alerts**"
- Dissemination of "**lessons learnt**"
- Improvement of patient and Health worker **safety**

To Err is Human; Reporting is safe, NO blame, NO fault finding

Report adverse events to the quality management unit in your institution.

For more details contact;

Directorate of Healthcare Quality and Safety

Premises of Castle Street Hospital for Women,

Castle Street,

Colombo 8 – Sri Lanka

Tel : 0112678598

Fax : 0112698602

SLMA NEWS+

ISSN : 1800-4016 (PRINTED) eISSN :2550-2778 (ONLINE)

"Wijerama House", No. 6, Wijerama Mawatha, Colombo 07, Telephone: +94 112 693 324, Email: office@slma.lk

● **PRINTING & PUBLISHING ASSISTANCE**
RS Printek (Pvt) Ltd.
765/2, Lake Crescent,
Waduwegama Road,
Biyagama, Sri Lanka
(Gen.) +94-011-2488434,
+94-011-2488339
Mobile: 0712690275

CONTENTS

Author guidelines for articles to the SLMA NEWS+

- **Title:** Give a catchy title, not so lengthy
- **Word count:** about 2000
- **Number of references:** maximum 8 (preferably less)
- **Referencing style:** (preferably) vancouver
- **Images:** It is the responsibility of the author to get permission from the original author. Please give the reference to the original owner.
- **Sending images:** Please send as attachments. Pasting images on MSWord reduces the quality of image and affect the print quality outcome.
- **Author details:** prefix, Name, designation, current working station
- **Optional:** email and photo (if you wish to add them along with the article)

Thank you.
Professor Hasini Banneheke,
Editor-in-Chief-SLMA@2021

Education in the Post-COVID Era: Urgent reforms are the need of the hour

COVID-19 has had a major adverse impact on the education sector. "An estimated 131 million students in 11 countries have missed more than three-quarters of their in-person learning" proclaimed UNICEF in September 2021. Bangladesh, Philippines, and Panama are at the top of that list. Most fortunately, Sri Lanka is not among those 11.

Sri Lankan educational system has produced internationally renowned professionals serving around the world. However, the focus of the world has changed from seeking a person with knowledge to a person with skills. With the experience gained during the COVID pandemic, digital technology will continue to rule the world for many years to come. Thus, it is time that we changed our education system gradually, not overnight like the short-sighted decision to use organic fertilizers. Careful planning is essential to address the long-term and short-term goals but in this post-COVID era, there are a few problems needing urgent solutions.

There are many repercussions of missing school during the pandemic. Some of these may be quite difficult to overcome fully. While all other aspects are equally important, mostly students and parents worry about the lost time that push the age of graduation to a higher digit. Sri Lankan education authorities may have to think of re-structuring of the curriculum, delivery, and assessments to reduce the impact of lost time for children. If not, it will lead to an early brain drain situation as there is already a shift to international examinations by many, at least those living in the main cities. This may also discriminate against children whose parents cannot afford to provide such education.

Like most Sri Lankan mothers, I had to study most of the technical textbooks used in schools in order to help my children. While admitting that I am not an expert on school education or on the subject matter concerned, I still feel that there is a lot of repetition and unnecessary content that can be done away with. These include things that are anyway covered at the university level. As a university academic, I can confirm that the majority of medical students could not recall the relevant subject matter learned during school time. We can probably take an entire year out of middle school, thereby allowing the students face the 'O' Levels in Grade 10.

The development of soft skills is important. However, the practice of organizing the school concert to match the standard of "American idol" or the sports meet to match "Olympics' is just a waste of time, human resources, and money. As a parent, I have witnessed the school system in the United Kingdom which had more events all around the year than Sri Lankan schools but without any after-school practice sessions, or extra work for teachers and parents, or fundraising. The practice of having big tamashas and inviting politicians should definitely be stopped. After all, considering the fact that more than 100 parliamentarians have not even 'Ordinary level' qualified, and regional politicians even less they are not the best role models for students.

While being proud of the Sri Lankan system, we should be humble and wise enough to learn things from the rest of the world to improve our system. In that context, we have a lot to learn regarding the mode of delivery of the subject matter. There are plenty of anecdotal stories of some children performing exceptionally well when they switch from the local to the international system. There may be many other confounding factors responsible, but this may indicate some defects in our local system, possibly in the delivery and assessment, as the knowledge targeted remains more or less similar. We also could introduce new subjects, to be taught and accepted for university entrance, and reduce the depth and range of content taught, etc. After referring to the recommended textbooks of London curricula, I realized that we have a lot to learn regarding the compilation of textbooks for schools targeting the delivery of basic concepts to the average student.

Whenever a new government is elected, we have witnessed that documents on educational policy and reforms are prepared (eg: in 1992, 2003, and 2016). But mostly those were to address political issues (eg: teaching of the second language since 1999 "to overcome racial violence and to promote peaceful living and coexistence") than to prepare the children for the future. The current Minister of Education recently stated that there would be reforms implemented by 2023, paving the way for students to become graduates in their early twenties. With two educated people as the Minister and the Secretary of education, the public do hope that these reforms have been targeted for the betterment of the country and not just another propaganda gimmick to secure votes. Until such reforms are in place, Sri Lanka needs immediate solutions to address the current backlog.

Editor-in-Chief
Professor Hasini Banneheke
MBBS, Pg Dip Med Micro, MD (Med Parasit)

President's Message

Dear Colleagues,

After a lapse of about 8 weeks, we have started seeing an increase in the number of cases of COVID -19 again over the last two weeks. This is definitely not a trend that one could be contented with as it clearly indicates that unless public health measures are strictly adhered to, another surge of cases of COVID-19 will be inevitable. As at present, 65% of the Sri Lankan population has received two doses of vaccines. Further, the Government has already commenced vaccinating the health care professionals with the booster dose. The decision has already been taken to vaccinate all people more than 60 years with the booster dose as early as possible. In this context, it would be imperative for people to adhere to public health measures since considering closing schools or the country again could not even be contemplated.

Stroke is a leading cause of death and disability in adults. There were many activities organized Island wide to celebrate World Stroke Day that fell on 29th October 2021. Being a Neurologist with a special interest in stroke care, I am pleased that SLMA in 2021 was able to carry out many activities to promote stroke care in Sri Lanka. We were able to conduct a Conference on Rehabilitation over two days and another Pre-Congress Workshop on Stroke Rehabilitation under the sponsorship of the World Health Organization. I am pleased that the SLMA could publish a comprehensive book, "Guide to Stroke Rehabilitation for Health Care Professionals" as a component of the Workshop on Stroke Rehabilitation. The soft copy of the book is available on the SLMA website. Furthermore, the SLMA Newsletter in November concentrates mostly on Stroke Care. There are three publications on Acute Management of Stroke, Prevention of Stroke, and Rehabilitation of Stroke written by Consultant Neurologists. The article on Prevention of Non-Communicable Diseases through Healthy Lifestyle Centres written by a Consultant Community Physician at the Directorate of NCD, Ministry of Health highlights information on facilities available in the Government sector for screening for risk factors of stroke. I fervently believe this information published will be made use of by our members for the benefit of patients under their care.

I am pleased to let you know that we completed the Foundation Sessions successfully in October 2021. The event that had four symposia on Nephrology, Gastroenterology, Endocrinology, and Women's Health was well attended. Also, I am delighted to let the members know that following the 134th Anniversary International Medical Congress, we have made a significant surplus revenue out of the sponsorships obtained and now are in the process of using some of it to renovate the SLMA premises. Along with activities conducted for professional development and the benefit of the public, 2021 would become a year with remarkable achievements, if we accomplish the renovations as well.

I wish all members great success in all your future endeavours.

With kind regards

Dr. Padma Gunaratne
MBBS, MD(SL), FRCP (Edin, Glasg, Lond), FCCP, Hon FRACP, FAAN, FWSO
President,
Sri Lanka Medical Association

To All Members of the SLMA

Dear Sir/Madam,

Annual General Meeting: 22nd December 2021 at 7.00 pm
Notice is hereby given that the Annual General Meeting of the Sri Lanka Medical Association will be held on Wednesday, 22nd December 2021 at 7.00 pm at the Lionel Memorial Auditorium, at No. 6, Wijerama Mawatha, Colombo 7.

All members are cordially invited to be present.

Dr. Sumithra Tissera
Honorary Secretary, SLMA

COVID related activities during October - November 2021

By Dr. Sumithra Tissera, Hony. Secretary of the SLMA

5th October

Media Seminar on the topic - Post COVID-19 infection: Anxiety & Depression was conducted with the participation of Dr. Padma Gunaratne, President, SLMA, Dr. Pabasari Ginige, Consultant Psychiatrist & Senior Lecturer University of Peradeniya & Dr. Sajeewana Amarasinghe, Consultant Psychiatrist, National Institute of Mental Health (NIMH).

24th October

A meeting of the Expert Committee on COVID-19 was held to discuss the way forward regarding management of COVID-19 pandemic and it was decided to write a letter to HE President and to release it to the media.

26th October

The letter addressed to H E the President, titled 'Recommendations to prevent another wave of COVID-19' included following points;

Stringent enforcement of current regulations by monitoring

Third dose/booster of Pfizer vaccine to priority groups/ healthcare professionals

Continuation of restrictions on super-spreader situations and events

Sustain a high level of case surveillance by testing

The contents of the letter were released to the media.

1st November

Media Seminar on the topic 'Third Dose for Adults & Vaccination for Children' was conducted with the participation of Dr. Padma Gunaratne, President, Professor Sharman Rajendrajith, President, Sri Lanka College of Paediatricians and Dr. Rajiva de Silva, Consultant Immunologist, MRI, Colombo.

Many TV appearances and media releases on COVID -19 and other health related issues were published in the electronic and print media.

Other Activities

2nd October

SLMA Saturday Talk on 'Epilepsy in Children' was done by Dr. Saraji Wijesekara, Senior Lecturer in Paediatrics, Faculty of Medicine, University of Sri Jayawardenapura.

9th October

SLMA Saturday Talk on 'Hypertension in Pregnancy' was done by Dr. Prabhodana Ranaweera, Senior Lecturer in Obstetrics & Gynaecology, Faculty of Medicine, University of Colombo.

11th October

The commemoration of the World Hospice & Palliative Care day was organized by the National Cancer Control Programme at the MoH auditorium.

Dr. Padma Gunaratne, President, SLMA, was invited to this event.

The first copy of the Second Edition of the Palliative Care Mannual for Healthcare Professonals in Sri Lanka published by the Palliative and End of Life Care Task Force was launched and presented to Dr. Janaki Vidanapathirana, Director, National Cancer Control Programme.

Dr. Padma Gunartne, President SLMA presented a review of the Manual and Drs. Dilhar Samaraweera and Udayangani Ramadasa attended this occasion.

16th October

SLMA Saturday Talk on "Pyrexia of Unknown Origin" was done by Professor Panduka Karunanayaka, Professor in Medicine, Faculty of Medicine, University of Colombo.

16th October

SLMA- SLIC road traffic crash prevention programme was organized in Matara. Dr. Sunil Seneviratne Epa, Past President SLMA participated representing SLMA.

Ruhuna Clinical Society supported this initiative by providing doctors for medical screening and resource persons for the awareness programme.

18th October

A meeting of the Board of Trustees was held at the Council Room, Wijerama House. Dr J B Peris Chaired the meeting. Prof Ravindra Fernando, attended in-person and Prof Anoja Fernando, Prof Geetha Fernando and Prof Wilfred Perera attended on line. The committee approved the proposal for the renovation of the SLMA building and premises.

21st October

The SLMA Expert Committee on Medical Rehabilitation organized a webinar on 'Cerebral Palsy at a Glance' by Dr. Jayathri Jagoda, Consultant in Rheumatology & Rehabilitation, LRH, Colombo.

23rd October

SLMA Saturday Talk on 'Dementia' was done by Prof Shehan Williams, Professor in Psychiatry, Faculty of Medicine, University of Kelaniya.

25th October

Signing of the contractual agreement to refurbish the exterior the SLMA building and premises was held. Drs. Padma Gunaratne, President SLMA, Manilka Sumanatilake, Vice President, SLMA, Sumithra Tissera, Secretary, SLMA and Professor Sudarshani Wasalathanthri, Vice President, SLMA was present at this occasion.

26th October

The clinical meeting for the month of October was held in collaboration with the Ceylon College of Physicians.

The resource persons for the meeting were Drs Chanirdi K Wickramatunga, Registrar in Medicine, Dr. J Philip Anpahalan, Senior Registra in Medicine & Dr. FHD Shehan Silva, Senior Lecturer in Medicine, University Medical Unit, Colombo South Teaching Hospital (CSTH).

A discussion on tetanus, "A Reminder of a Disease in Oblivion"

29th October

A panel discussion Big Focus programme, TV Derana to commemorate the World Stroke Day was held. Dr. Padma Gunaratne, President SLMA was one of the panelists at the discussion.

29th October

WHO SEAR organized Webinar on Improving Stroke Care Services in the South-East Asia Region to commemorate the World Stroke Day. Dr Padma Gunaratne, President, SLMA took part as a panelist in the Webinar.

30th October

The inauguration of the SLMA Foundation sessions 2021 and the Dr. NDW Lionel Memorial Oration was conducted.

Vidya Jyothi Professor Vajira HW Dissanayake, Dean Faculty of Medicine, Colombo & Past President, SLMA, was the orator. This was the first oration after it was changed from a lecture. The title of the oration was 'From Wijerama House to Marlborough House – the Story of Creating Capacity for Data Driven Health

Care in Sri Lanka and Beyond'.

The Chief Guest at the occasion was Professor Indika Karunathilake, Immediate Past President, SLMA, He spoke on 'Beyond the Comfort Zone: Challenges and Lessons Learnt'.

Awarding certificates and cash prizes for the award winners of the oral and poster presentations of the 134th Anniversary International Medical Congress was also held on the same day. The names of the prize winners are published in the Newsletter.

30th October

SLMA Saturday Talk on 'Colorectal Cancer' was done by Professor Aloka Pathirana, Dean Faculty of Medicine, University of Sri Jayawardenapura.

31st October

The foundation sessions was held as a hybrid event. There were four symposia covering; Endocrinology, Gastroenterology, Nephrology & Women's Health. Around 60 persons participated online.

5th November

The Medicinal Drugs Committee of SLMA organized a therapeutic update on 'Management of Superficial Fungal Infections' by Dr. Indira Kahawita, Consultant Dermatologist, NHSL, Colombo.

2nd November

A MoU between the Sri Lanka Medical Association & 1990 Suwaseriya Foundation was signed. This will enable triaging of patients and facilitation of providing ambulance service to patients identified by the SLMA DoC Call 247 volunteers.

Dr, Padma Gunaratne, President SLMA welcomed the invitees. Drs Sunil de Alwis, Additional Secretary, Medical Services, MoH, Ruvaiz Haniffa, Chairperson, SLMA DoC Call 247, Professor Indika Karunathilake, Member SLMA DoC Call 247 Admin Team and Mr. Dumindra Ratnayake, Chairman, Suwaseriya also spoke at this occasion. Dr. Sajith Edirisinghe, Convener SLMA DoC Call 247 Admin Team delivered the vote of thanks.

Dr. Padma Gunaratne, President SLMA signed the MoU on behalf of SLMA and Mr. Sohan de Silva signed on behalf of 1990 Suwaseriya Foundation.

Drs Ruvaiz Haniffa and Surantha Perera, Vice President Elect 2021/22 council signed as witnesses from SLMA and Dr. Sunil de Alwis & Mr. Dumindra Ratnayake signed as witnesses for 1990 Suwaseriya Foundation.

Several council members attended this occasion.

PROBIOTICS for COVID-19

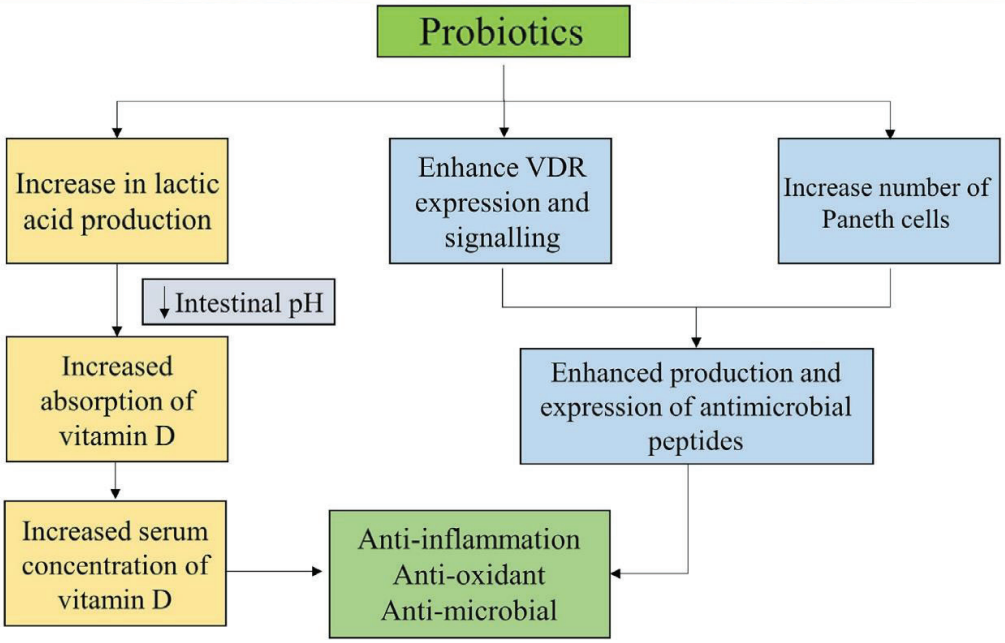


Figure explicit the probable combined / synergistic effect of probiotics with vitamin D in COVID-19. Probiotic secreting lactic acid will lower the intestinal pH, there by increasing the absorption of vitamin D and consequently improves its levels. Certain probiotics enhances the expression of vitamin D receptor (VDR) protein and its transcriptional activity, subsequently increasing the expression of cathelicidin. Moreover, probiotics also increases the number of panethcells, thereby enhancing the levels and expression of defensins.

Adopted from: Kurian S.J. et al., JID: ARCMED 2021

References:
1. Ceccarelli G. et al., Frontiers in Nutrition 2021, 2. Jamal M.A. Khaled, Saudi Journal of Biological Sciences 28 (2021) 865–869, 3. Kurian S.J. et al., JID: ARCMED 2021,
4. Singh K. et al., Nutrition Research 87 (2021) 1–12, 5. Zafar N. et al., Biomedical Research and Therapy, 2020, 7(11):4086-4099

E.M. Wijerama Oration

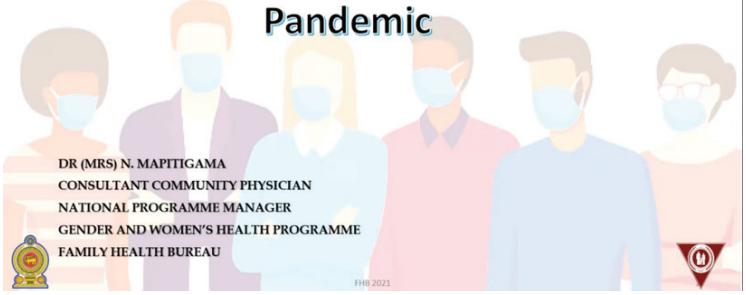
Foundation Sessions

Perspective of a Nurse in Covid 19

Nalin Herath
Special Grade Nursing Officer
National Hospital
Kandy

"The War Against Invisible Enemy....!"

Way Forward in Addressing Gender Related Issues During COVID-19 Pandemic



Proceedings of The SLMA Foundation Sessions - 2021

The inauguration of the SLMA Foundation Sessions 2021 and the Dr. NDW Lionel Memorial Oration were held on 30th October 2021 at the Dr. EM Wijerama Memorial Auditorium, Colombo 07.

Vidya Jyothi Professor Vajira HW Dissanayake, Dean Faculty of Medicine, Colombo and Past President of the SLMA, delivered the Dr. NDW Oration titled 'From Wijerama House to Marlborough House – the Story of Creating Capacity for Data-Driven Health Care in Sri Lanka and Beyond'. This was the first oration after the NDW Endowment Lecture was changed to an oration in 2020.

The Chief Guest at the occasion was Professor Indika Karunathilake, the immediate past president, SLMA. His talk was titled, 'Beyond the Comfort Zone: Challenges and Lessons Learnt'.

The award ceremony to present certificates and cash prizes for the winners of the SLMA awards 2021 in both oral and poster categories was also held on the same day.

The Technical Sessions was held on 31st October 2021 as a hybrid event, where it was live-streamed from the SLMA auditorium.

There were four symposia on endocrinology, gastroenterology, nephrology, and women's health with around 60 – 80 participants joining online for each symposium. The first three sessions were conducted as case-based discussions specifically targeting the postgraduate trainees. The issues faced by women during the COVID-19 pandemic were discussed in the final symposium.

Details of symposia are given below.

Symposium on Endocrinology

- Diabetes: The Dilemmas

Dr. Samanthi Cooray
Consultant Endocrinologist
DGH Gampaha

- Thyroid Disorders: Challenging Scenarios

Dr. Dimuthu Muthukuda
Consultant Endocrinologist
Sri Jayawardenepura General Hospital

- Common Presentations of Paediatric Endocrine Disorders

Dr. Navoda Attapathu
Paediatric Endocrinologist
Lady Ridgeway Hospital, Colombo

The session was moderated by
Dr. Padma Gunaratne, *President SLMA*

Symposium on Gastroenterology

Case-based discussions on Elderly Patient Presenting with Jaundice

Female Presenting with Ascites and Decompensated Liver Disease and

Aged Male Presenting with Bleeding PR were conducted by

Professor S Sivaganesh
Consultant Surgeon
University Surgical Unit, National Hospital of Sri Lanka

Dr Sanjeev Samaranayake
Consultant GI Surgeon
District General Hospital, Kalutara

Dr. Hasitha Wijewantha
Consultant Gastroenterologist,
Provincial General Hospital, Rathnapura

The session was moderated by
Dr. Nilesh Fernandopulle
Consultant Gastroenterologist
University Surgical Unit
National Hospital of Sri Lanka

Symposium on Nephrology

- A Patient with Anaemia and Renal Impairment

Professor Eranga Wijewickrama
Honorary Consultant Nephrologist & Senior Lecturer
Department of Clinical Medicine, University of Colombo

- Common Presentation, Uncommon Diagnosis

Dr. Mathu Selvaraja
Consultant Nephrologist
National Hospital of Sri Lanka

- Unraveling the Mysteries of vesicoureteric Reflux in Children

Dr. Vindya Gunasekara
Consultant Paediatric Nephrologist
Lady Ridgeway Hospital Colombo

- The session was moderated by

Dr. BJC Perera, *Consultant Paediatrician.*

Symposium on Women's Health

- COVID - 19 & female health care: psychological impact & resilience

Dr. Aruni Hapangama
Head/Senior Lecturer
Department of Psychiatry
Faculty of Medicine
University of Kelaniya

- Perspectives of a front-line worker

Mr. Nalin Herath
Special Grade Nursing Officer
National Hospital, Kandy

- Addressing the gender-related aspects: role of the media

Dr. Amanthi Bandusena
Consultant Community Physician
Health Promotion Bureau,
Head, Policy, Advocacy, and risk communication unit

The way forward in addressing gender-related issues during COVID - 19 pandemic -

Dr. Neththanjali Mapitigama
Consultant Community Physician
Women's health unit
Family Health Bureau

The session was moderated by Professors Sampatha Gunawardena - Professor in Community Medicine, Faculty of Medical Sciences, University of Sri Jayewardenepura and Anuruddhika Edirisinghe, Professor of Forensic Medicine, Department of Forensic Medicine, University of Kelaniya.

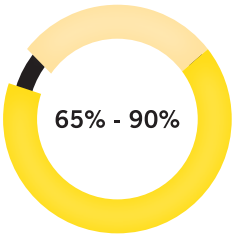
Medi KAL Nutrience

HEPATOSOL

Purpose Formulated Food Mix

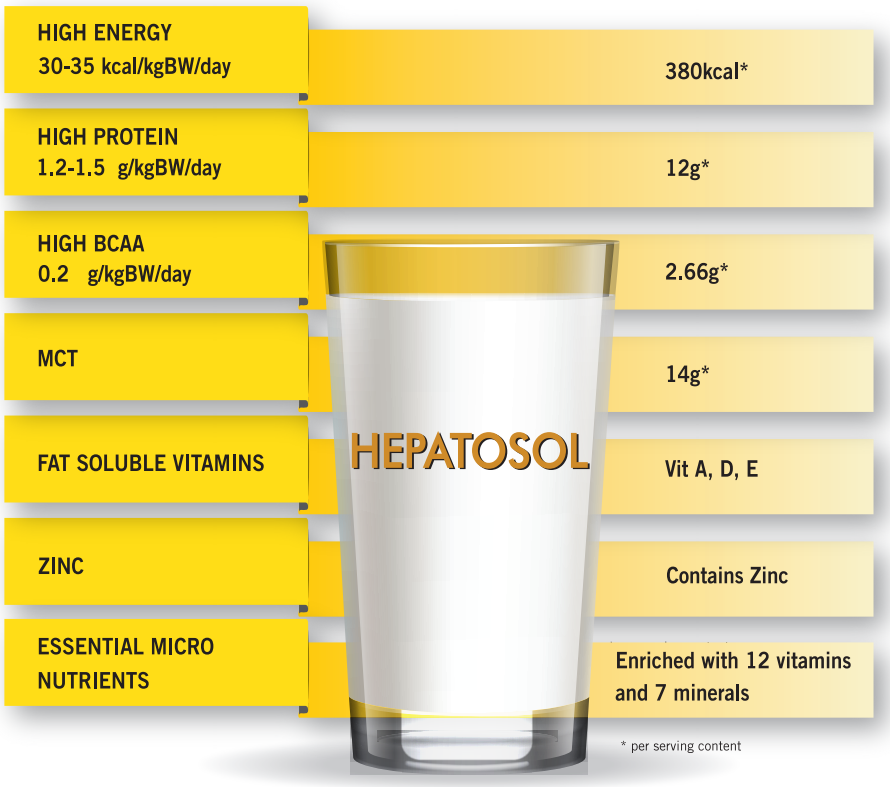
SCIENCE BASED NUTRITION

PREVALENCE OF MALNUTRITION IN CHRONIC LIVER DISEASE[1,2]



65% - 90% patients with advanced cirrhosis have malnutrition.

UNIQUE* FORMULATION TO HELP IMPROVE LIVER HEALTH[3]



* as per ESPEN recommendation

ESPEN : The European Society for Clinical Nutrition and Metabolism BW: Body Weight, BCAA: Branched-Chain Amino Acids, MCT Medium-Chain Triglycerides

References 1. Om Parkash, et al. Assessment of malnutrition in patients with liver cirrhosis using protein calorie malnutrition (PCM) score verses bio-electrical impedance analysis (BIA). doi.org/10.1186/s13104-018-3640-y
2. John S, et al. Malnutrition and nutrition support in patients with liver disease. doi: 10.1136/fg.2009.000414 3. Jung G, et al. Effects of Branched-Chain Amino Acid (BCAA) Supplementation on the Progression of Advanced Liver Disease. doi:10.3390/nu12051429

KALBE

KALBE INTERNATIONAL PTE. LIMITED
321, GALLE ROAD, COLOMBO 4, SRI LANKA
TEL: +94 11 2501017, 2501026
FAX: +94 11 2597273
EMAIL: info@kalbesrilanka.com

To be distributed among medical professionals only

KALBE

Prevention of Non-Communicable Diseases through Healthy Lifestyle Centers

Dr. Shanthi Gunawardana
Consultant Community Physician
Directorate of NCD
Ministry of Health

Non-Communicable diseases (NCDs) are increasing as an epidemic. 83% of total deaths in Sri Lanka is due to NCDs, such as hypertension, heart attacks, strokes, chronic kidney diseases, cancers and chronic respiratory diseases. The main reasons for occurrence of such diseases are lifestyle changes which include unhealthy diet (high salt, sugar and fat/transfat), lack of physical activities, smoking, alcohol consumption, air pollution and stress. These risk factors lead to increase of blood sugar, blood cholesterol , blood pressure and body weight.

Primordial and primary prevention activities play a major role in NCD prevention. In order to achieve it, about 1000 Healthy Life Style Centers (HLC) are established in Primary Medical Care Institutions (PMCI), district hospitals and base hospitals around Sri Lanka and numerous services are provided by the HLC staff to reduce the NCD burden faced by the individuals and the community. These include assessment of behavioural risk factors, biochemical assessments such as fasting blood sugar, blood cholesterol levels, serum creatinine. Assessments of cardiovascular risk, diagnosis and referral of clients who are having NCDs, health education and promotion, counselling and brief interventions for behavioural changes can be denoted as the services provided for intermediate risk factors.

People who are 35 years and above, are eligible to receive the services from HLC. Apart from that, young people aged between 20 to 34 years are also eligible to receive services, if they have a strong family history of diabetes, hypertension, cancers, history of smoking in the past one year, overweight and obesity etc. These clinics operate once a week in these institutions with a medical officer, public health nursing officer and assistants. Although these services are provided free of charge, utilization by the publicseem to be poor, especially by males. As Directorate of NCD, we request health care officials to give a wide publicity for these HLCs in order to reap maximum benefits from them.

This will motivate public to get maximum benefit from these HLCs, and reduce the NCD burden of the country.

Acute Ischemic Stroke Treatment: What's New..

Dr. Manjula Caldera
Consultant Neurologist,
Teaching Hospital Anuradhapura,
Anuradhapura,

Reperfusion therapy has revolutionized the management of acute ischemic stroke (AIS). Recent evidence in advancements in reperfusion strategies supports the expansion of the therapeutic window in selected patients beyond 4.5 hours.

A few decades ago, acute ischemic stroke care was limited to aspirin and supportive care. A patient with acute coronary syndrome got priority with a monitoring bed and prompt treatment, while a patient with AIS got significantly lesser importance and perhaps a corner bed in a medical ward.

Understanding the concept of ischemic penumbra and strategies to salvage the penumbra brought more hope for patients with stroke who were otherwise destined to death or disability. Intravenous thrombolysis for AIS became a safer option despite several initial failed studies with various protocols. The "Time is Brain" concept and "FAST approach" have revolutionized the general public's response and healthcare workers to AIS.

In IV thrombolysis, the most available treatment option in Sri Lanka, the initial 3-hour therapeutic window tested by the NINDS study was expanded to 4.5 hours following the ECASS study. Endovascular therapy with mechanical thrombectomy is available for AIS in a few centers in Colombo.

Evidence favours a better outcome by managing an AIS patient in a dedicated stroke unit than in an average ward set up. There are very few stroke units established at present in the island.

Principles of acute ischemic stroke care

There are three main principles in acute ischemic stroke care.

1. Recanalization of the occluded artery and reperfusion of the ischemic tissue
2. Optimization of collateral blood flow
3. Avoiding secondary brain injury

Recanalization and reperfusion are the mainstays of management of acute ischemic stroke. Recanalization is the opening of blood vessel while reperfusion is re-establishing the blood flow in the previously occluded artery. This will help to salvage the ischemic penumbra; the hypo perfused brain tissue which is not infarcted yet. This is achieved by thrombolysis and endovascular procedures like mechanical thrombectomy.

Collateral flow keeps the ischemic penumbra viable. Although it is adequate to prevent the critical ischemia or infarction in the afected territory, it is not sufcient to maintain normal cellular function. Collateral circulation can sustain the viability of the penumbra for a limited period. It can be optimized by preventing drops in blood pressure and supported by intravenous fluids if indicated to prevent hypovolemia. Blood pressure target is not a one fit for all in acute ischemic stroke.

It is a personalized measure for individual patient and is based on factors such as preparation for intravenous (IV) thrombolysis, presence of chronic hypertension, location and persistence of the vessel occlusion, and the availability of collaterals. Unless one is planned for an IV thrombolysis (blood pressure target 185/110 mmHg) a relative hypertension of less than 220/120mmHg in large proximal vessel occlusion for initial few days is acceptable.

Avoiding secondary brain damage is mainly achieved by maintaining a normal glycemic level and body temperature and minimizing the occurrence of infections such as aspiration pneumonia.

What is new in acute reperfusion therapeutics....

Intravenous thrombolysis and mechanical thrombectomy are the main mechanisms achieving the recanalization and reperfusion. It also can cause reperfusion injury such as haemorrhage and oedema after recanalization. Reperfusion injury is proportionate to the size of the infarction. The key to avoid reperfusion injury is avoiding large infarcts by good patient selection for reperfusion and prompt treatment.

The recent AHA/ASA Guidelines (2019) on AIS management has revised the indications and contraindications for IV thrombolysis and modified in such a way that more patients could be benefitted by this treatment.

Advance age is not anymore a barrier for IV thrombolysis and minor degree strokes (NIHSS <5) are not a contraindication if the clinician thinks that the clinical deficits are disabling. Intravenous alteplase 0.9mg/kg (up to 90mg) is the FDA approved treatment that is widely used around the world including Sri Lanka. Although not approved by FDA, tenecteplase is used in several trials with growing evidence for intravenous thrombolysis in acute ischemic stroke. The NOR-TEST (Norwegian Tenecteplase Stroke Trial) study tested the safety and efficacy of a dose of tenecteplase 0.4 mg/kg (up to 40 mg) with a standard dose of alteplase. The proportions of patients with serious adverse events, including symptomatic intracerebral haemorrhage (sICH), and functional independence at 3 months were similar in both groups. The EXTEND- IA TNK (Tenecteplase Versus Alteplase Before Endovascular Therapy for Ischemic Stroke) trial evaluated patients with acute ischemic stroke and a proximal intracranial artery occlusion eligible for mechanical thrombectomy by administering tenecteplase (0.25 mg/kg, up to 25 mg) and alteplase standard dose.

This study yielded very promising results with tenecteplase showing better recanalization/reperfusion results at the time of initial angiography, lower ICH results and better functional outcomes at 3 months.

Symptomatic intracerebral haemorrhage (sICH) is the most significant complication of IV thrombolysis, and it is mostly considered to be due a reperfusion injury. Reported rate of sICH varies from 1.9% to 6.4% in diferent trials with standard dose alteplase. It rarely can cause death. Old

age, large infarctions (High NIHSS score), diabetes mellitus, uncontrolled hypertension are the main risk factors for sICH. When a rapid deterioration of the level of consciousness or NIHSS occurs during the thrombolysis, the infusion should be stopped immediately, and a non-contrast CT scan of the brain should be performed. Once a sICH is diagnosed, systolic blood pressure should be maintained between 140-160 mmHg, and reversal of fibrinolytic efect should be done by cryoprecipitate (10 units) or an antifibrinolytic agent (tranexamic acid 10 -15 mg/kg IV over 20 minutes. If the serum fibrinogen level remains below 150 mg/dL, cryoprecipitate could be repeated. Orolingual angioedema is a serious, but rare complication of alteplase.

It is more commonly associated with patients who are on angiotensin converting enzyme inhibitors. Angioedema is managed with discontinuing the infusion, and administering intravenous diphenhydramine (50 mg IV), ranitidine (50 mg IV), dexamethasone (10 mg IV) and safeguarding the upper airway.

Intravenous thrombolysis may not be successful in proximal artery occlusions with large clots. These are the most disabling strokes and there is stronger evidence available for benefits of endovascular mechanical thrombectomy for these patients.

Endovascular therapy should be considered the standard of care for patients with large vessel occlusions (LVO) involving the internal carotid artery and M1 segment of the middle cerebral artery within six hours from the onset of symptoms.

The number need to treat this most beneficial therapeutic modality ranges from 3-7 in diferent trials. The pooled data of mechanical thrombectomy indicates it is reasonably safe, and the sICH rate is around 4%.

Special situations in acute ischemic stroke

Wake-up strokes and strokes of unknown time of onset

AIS is mostly a silent disease and seeking treatment after waking up is a common challenge for the treating physicians. In some patients the time of onset could not be determined, especially when the patient is aphasic, and no witness was around at the time of onset of symptoms. Earlier these strokes were contraindications for IV thrombolysis. There is growing evidence that these patients are benefited by endovascular therapy and sometimes with IV thrombolysis when they have a baseline CT scan without extensive infarction and advanced imaging modalities demonstrating a salvageable ischemic penumbra.

DAWN trial evaluated the LVO patients, last known to be well for 6-24 hours, who had a mismatch in MRI difusion weighted images/CT perfusion images versus the severity of clinical deficits. DIFFUSE 3 study evaluated patients from 6-16 hours of symptom onset who had strict radiological mismatch between ischemic core vs penumbra. Both studies showed dramatic benefits from mechanical thrombectomy with no major safety concerns. Although not as strong as for the evidence for endovascular therapy, IV thrombolysis in wake-up strokes or strokes of unknown onset of time, has also shown promising results. WAKE UP trial studied such patients who had a MRI DWI/FLAIR mismatch with IV thrombolysis and demonstrated modest benefit at the expense of nonsignificant but notable increment of sICH.

Intravenous thrombolysis in patients taking anticoagulants

Intravenous thrombolysis could be administered for the AIS patients on warfarin within three hours if the international normalized ratio (INR) is equal to or below 1.7. These patients may also benefit from mechanical thrombectomy. However, there is no adequate safety data for IV thrombolysis for patients on novel oral anticoagulants (NOAC) such as the direct thrombin inhibitors (dabigatran) and factor Xa inhibitors (rivaroxaban, apixaban, and edoxaban). However, these patients may benefit from mechanical thrombectomy.

Posterior circulation strokes

There is evidence that IV thrombolysis and mechanical thrombectomy can result in functional independence at three months in 30-40% of patients with posterior circulation strokes. However, a recent study, BASICS (the Basilar Artery International Cooperation Study) failed to demonstrate a significant benefit of endovascular therapy for posterior circulation strokes beyond 6 hours from the onset.

What will be the future in acute stroke care

The future would be primarily be based on early recognition of AIS and prompt administration of recanalization/reperfusion therapy strategies.

To reduce door to needle time, mobile stroke units have been introduced in developed countries. These are expensive special ambulances equipped with portable CT scanners and communication facilities with the nearest stroke centre. The paramedics in mobile Stroke units are trained to telecommunicate with the stroke specialists to administer IV thrombolysis in needy patients while they are transferred to the stroke unit.

The convenience of the administration and the cost efectiveness with tenecteplase is likely to replace alteplase in future stroke guidelines with further trial evidence.

Stroke Rehabilitation

Dr. Gunendrika Kasthuriratne
Consultant in Rheumatology and Rehabilitation
National Hospital of Sri Lanka

There are many recent developments such as thrombolytic therapy and thrombectomy that have transformed the management of acute stroke over the last few decades. Thrombolytic therapy is best received within the first 3 hours, although the therapeutic window has been extended up to 6 hours. However, even if performed within the stipulated time, only a minority will be qualified for a successful thrombolytic therapy and about one-third of the survivors will have a residual disability. Therefore, rehabilitation remains the mainstay of treatment for most stroke victims despite all these advances.

A Severe stroke can place a great burden on the coping mechanisms of carers and family as well as patients. Health issues related to stroke-related disability are multiple which includes a further risk of stroke, risk of coronary artery disease, deep vein thrombosis, and pulmonary embolism, chest and urinary tract infections accelerated osteoporosis, incontinence, nutritional deficits, depression, and so on. The yearly mortality rates after a stroke are as high as 10% and 50% among stroke survivors during the next five years.

Post-stroke rehabilitation

The post-stroke mortality and morbidity have significantly declined with the improvements in multidisciplinary inpatient stroke care. Every stroke patient should have their rehabilitation needs assessed within 24–48 hours of admission to the stroke unit by members of the interdisciplinary team. Any stroke patient with identified rehabilitation needs should be referred to a rehabilitation service. All stroke patients should commence mobilisation (out-of-bed activity) within 48 hours of stroke onset unless contraindicated.

Post-stroke recovery is a process with an improvement of multiple elements at different periods. Asymptomatic recovery is observed early with spontaneous neurological recovery. The later occurring functional recovery is the important component that should overlap with rehabilitation therapy.

Functional recovery is the ability to perform daily activities that are required for self-maintenance, as well as social activities. Active Rehabilitation is an augmentation of stroke recovery and should overlap with the recovery process during the first three to six months after stroke.

Post-stroke rehabilitation is an interdisciplinary team effort. The team leader is usually the rehabilitation specialist. The other members of the team invariably should include physiotherapists, occupational therapists, speech and language therapists, nurses, psychologists, dietitians, and social service officers. Goal setting and regular meetings of the interdisciplinary team is key practice in medical rehabilitation for any physical disability. The patient and /or the family should actively be involved in goal setting.

All currently available guidelines recommend that all stroke survivors should be assessed for rehabilitation during their stay in the acute stroke care unit unless they reach the premorbid level of function or they are not fulfilling the criteria to be enrolled in a rehabilitation programme. They may be rehabilitated as in-patients, out-patients, or in the community. Generally, the criteria used to select a candidate for inpatient rehabilitation are, significant persisting neurological deficit, stable neurological status, sufficient cognitive function to learn, communication ability to engage with a therapist, physical ability to tolerate the active program and motivation, achievable therapeutic goals and a proper discharge plan. The decision is taken after an assessment by an interdisciplinary team.

Stroke related disability and associated factors

Stroke-related disability almost always impairs mobility and independence in the activities of daily living. The majority of the patients will have spastic hemiplegia and in some, cerebella ataxia may affect mobility. The persistence of motor synergies and contractures and/or spasticity may affect the mobility in long term.

Those who recover with motor functions early can commence learning Activities of Daily Living (ADL). Apraxia, hemianopia, hemineglect, and cognitive defects or depressive mood will add to the severity of functional impairment and thus prevent the functional recovery in a patient whose recovery of mobility is satisfactory.

There are disabling pain syndromes characteristic of stroke patients. They are caused by poor motor control and improper limb and gait biomechanics. The pain can affect the shoulders, hips, muscles, and other parts of the body.

Hemiparetic shoulder pain (HSP) is a disabling, severe pain often occurring on the affected side. HSP often is accompanied by a limitation in range of motion in the shoulder. Central poststroke pain (CPSP) is a condition where they feel exaggerated distress in response to unpleasant stimuli

such as a pinprick and is difficult to treat.

Some strokes may affect the continence of the bladder and/or bowel. Factors that contribute to post-stroke bladder incontinence include direct damage of the micturition centers in the brain, which result in bladder hyperreflexia and urgency. Normal bladder function may be intact post-stroke, but impaired mobility and cognition may represent as incontinence.

Stroke may impair cognitive abilities such as memory, reasoning, speech, and problem-solving skills. Impaired cognition has a significant negative impact on functional recovery.

Aphasia is found in about one-third of patients with acute stroke. Aphasia will affect stroke victims in different ways. Speaking (expressive aphasia), understanding (receptive aphasia), reading, writing, using numbers, handling money, and even telling the time can be affected in an aphasic. It may resolve spontaneously but around half of the affected may experience long-term problems.

Dysphagia is very common after a stroke. A bedside swallowing assessment is a must in the initial evaluation of a stroke victim. Many will have a rapid recovery but the rest will continue to have a high risk of aspiration and chest infections, nutritional and hydration issues long term.

Assessing stroke-related disability and predicting functional outcome

A large number of stroke-assessment scales are described in literature aiming to quantify the stroke-related disability and to predict the functional outcome. Different measures of functional outcome are used in the acute clinical setting because of thrombolytic therapy and in planning and monitoring of a rehabilitation program. The World Health Organization's International Classification of Functioning, Disability and Health (WHO-ICF) is a framework that aids the classification of such scales. ICF helps decide on the appropriate measure/scale for a particular purpose.

The WHO-ICF (Picture 1) is a global instrument that provides a unified and standard language and framework for the description of "functionality". The ICF model is based on the biopsychosocial approach that integrates the biological, individual, and social dimensions of health.

This model describes the interaction of positive aspects among three main components: 1) body functions and structures; 2) activity and participation; and 3) environmental and personal factors. The environment is considered as either a facilitator of or a barrier to functional recovery. The components interact with each other and there are feedback loops.

Tools that assess stroke at all these levels are available. Only a few studies have explored post-stroke functionality based on the ICF conceptual model. All available outcome measures do not always fit neatly into a single category and often, they assess elements belonging to more than one domain.

Some of the scales are general and are used to assess any disabling condition other than stroke. Some are specific to stroke. The most commonly used, clinically approved classic clinical scales for stroke patients are Mini-Mental State Examination (MMSE), Fugl-Meyer assessment of motor function (FMA-M) and balance function (FMA-B), National Institutes of Health Stroke Scale (NIHSS), modified Rankin Scale (mRS), Functional Independence Measure (FIM) and modified Barthel Index (mBI).

MMSE is specific to assess the cognition impairment. For activity limitation or ADL assessment, the most used scales in rehabilitation settings are the mBI and the FIM. FIM contains a section on cognition as well. Studies have shown that none is superior to the other when the physical subtotal score of the FIM and the mBI scores are compared. In both scales, higher scores indicate higher independence in function.

Assessment by mBI or FIM can be done by anyone who knows the patient well. Usually, the mBI or FIM scores are documented in the interdisciplinary team meeting. The scores are documented at the commencement of the programme and are compared at each regular team meeting.

The discharge score is a must at the time of discharge from rehabilitation.

The participation restriction or handicap section of the WHO-ICF is assessed by scales that concentrate more on health-related quality of life. This section includes outcome measures that reflect an individual's involvement in life events such as social functioning. Those tools are mostly interviewer-administered questionnaires and they are much used in research settings rather than in clinical settings.

The awareness about stroke, its after-effects, and the benefit of rehabilitation is still at an unsatisfactory level in many sectors of the Sri Lankan community. A complete rehabilitation program should continue from the acute stroke unit to the home and community.

The final goal of a successful rehabilitation program should be community reintegration and community inclusion of the candidate. The cost-effectiveness of a rehabilitation process will be maximum only if the process is complete up to the final goal. Providing residential care for stroke rehabilitation will be costly. But it is a service that can be made cost-effective by increasing awareness in the areas of importance.

REFERENCES

1. Ebrsr.com. (2018). Introduction | EBRSR - Evidence-Based Review of Stroke Rehabilitation. [online] Available at: http://www.ebrsr.com/.
2. Zhang, T., Liu, L., Xie, R., Peng, Y., Wang, H., Chen, Z., Wu, S., Ni, C., Zheng, J., Li, X., Liu, H., Xu, G., Fan, J., Zhu, Y., Zhang, F., Du, Y., Wang, X., Wang, Y., Xiao, W. and Liu, M. (2018). Value of using the international classification of functioning, disability, and health for stroke rehabilitation assessment. Medicine, [online] 97(42), p.e12802. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6211934/ [Accessed 22 Nov. 2019].
3. Stroke rehabilitation in adults, Clinical guideline, 2013, www.nice.org.uk/guidance/cg162,NICE guideline
4. Winstein CJ, Stein J, Arena R, Bates B, Cherney LR, Cramer SC, Deruter F, Eng JJ, Fisher B, Harvey RL, Lang CE. Guidelines for adult stroke rehabilitation and recovery: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2016 Jun;47(6):e98-169.

Prevention of Strokes

Dr. T. Thivakaran
Consultant Neurologist
National Hospital of Sri Lanka

Strokes or cerebrovascular events are major challenges in healthcare around the world. They are of two major types; namely ischaemic and haemorrhagic strokes. Ischaemic strokes account for nearly 87 % of all strokes. The knowledge and skills have revolutionized the treatment of acute stroke and novel and time-tested measures are helping towards rehabilitation and reintegration into society.

However, the fact remains that for ischaemic stroke which has a risk of 1 in 4 for every individual over the age of 25 (1 in 6 when taken as a whole in humans), prevention is the best way than cure. Strategies to prevent a stroke in anyone who never had a previous stroke or TIA are termed 'primary prevention'. Proven strategies to prevent a recurrence of stroke in a person who already had had at least one transient ischaemic attack (TIA) or stroke are termed 'secondary prevention'.

While both primary and secondary prevention are responsibilities of every individual and health promotion campaign, secondary prevention is the primary goal of every doctor who cares for stroke or TIA patients along with acute treatment.

Risk factors for stroke

Effective Secondary prevention of stroke requires identification and categorization of risk factors for stroke in an urgent and aggressive method from the time of stroke or TIA.

We know age, sex, ethnicity, and genetic factors do influence stroke risk and are non-modifiable. However, there are many modifiable risk factors for stroke, and it is estimated that 80 to 90 % of strokes can be prevented if these are addressed timely.

Modifiable risk factors could be divided into the major risk factors and other risk factors

Major modifiable risk factors for stroke

These include the following.

- Hypertension
- Paroxysmal or permanent atrial fibrillation
- Diabetes
- Dyslipidaemia
- Smoking (tobacco)
- Sedentary lifestyle
- Symptomatic or asymptomatic carotid stenosis

Other modifiable risk factors for stroke

There are numerous other 'risk factors' some common than others which too can be modified to minimize stroke risk. The salient ones are listed below.

- Overweight/ obesity
- Excess alcohol consumption
- Unhealthy diet
- Obstructive sleep apnoea
- Kidney disease
- Other comorbidities
- COVID-19

Clinical methods for secondary prevention

History, examination, and investigations remain cornerstones in planning patient management in any setting. The above three can help in risk stratifying stroke patients for ideal secondary preventive strategies.

In addition to listing and describing the risk factors above (especially the major risk factors) , timing the stroke event and recording it correctly along with disability/best ability at the time of stroke is necessary for planning secondary prevention measures. Also, past history of strokes and stroke categories, hypersensitivities and bleeding tendencies and all comorbidities should be deciphered and recorded.

Examination also should record the disabilities in standardized scales (NIHSS, Barthel's index) along with the date/time.

General and specific systems examination would record the presence of above risk factors and corroborate the history. Examining all the pulses, blood pressure on both arms at least once, BMI/weight, signs of diabetic complications or chronicity, hydration, pallor/polycythaemia, skin changes of hyperlipidaemia, signs of smoking and alcohol excess, ecchymoses and purpura are some of these salient observations.

At least one brain imaging is a must for secondary prevention strategies. At minimum it would be a plain Computed Tomography (CT) scan. Advanced centres would use CT angiography, Magnetic Resonance Imaging, especially diffusion and perfusion weighted and FLAIR sequences or perfusion scans for additional information. While nearly 87% strokes are of the ischemic type, the rest could be haemorrhagic. Hence for those on anticoagulants all recurrent strokes would need repeat imaging. However, recurrent same territory TIAs are not an indication for repeat brain imaging.

The following five categories are necessary investigations after any ischaemic stroke and would evaluate the major risk factors.

1. Blood glucose (CBS, FBS, PPBS) and HbA1c
2. Full blood count
3. Electrolytes
4. Clotting profile
5. Lipid profile– ideally after the acute stage
6. Cardiac workup- ECG, echocardiography with a cardiologist's input, and Holter monitoring
7. Carotid and vertebral imaging- duplex or angiogram

However, depending on the patient's age and the other characteristics targeted investigations would be needed to find further risk factors. Some of these would include trans-oesophageal echocardiogram, renal artery angiography, blood work up including for catecholamines, vanillyl mandelic acid measurements etc. Young, recurrent or cryptogenic strokes would need screening for thrombophilia, inflammatory or connective tissue disorders. Additional symptoms and signs would guide further targeted investigations. For example, angina, palpitations, or syncope may need further cardiac or cardio electrophysiological workup.

Evidenced based secondary prevention strategies

The following are the major secondary prevention strategies or medical management that should be instituted after a TIA or stroke.

1. Effective blood pressure control with minimal fluctuations
2. Hyperlipidaemia management– Target LDL 70 mg/dL
3. Antiplatelet treatment
4. Carotid revascularization
5. Anticoagulations for specific indications
6. Glycaemic control
7. Cessation of smoking

Effective blood pressure control with minimal fluctuations

It is proven that blood pressure control with a target of <140/90 mmHg and in special instances like diabetes mellites and renal impairment with a target of < 130/90 mmHg is clearly beneficial.

However, in the immediate aftermath of an acute stroke up to 48-72 hours it is best to allow ***permissible hypertension*** to avoid hypoperfusion. Usually if the patient is already on a antihypertensive treatment it can be continued through the acute stroke period. But starting or restarting antihypertensive medications are best done after three days except in hypertensive emergencies when BP is >220/120 mmHG. However if thrombolysis is done the blood pressure target should be <180/105 mmHg even through the acute setting.

The choice of antihypertensive will be decided by the patient's unique clinical setting. While angiotensin converting enzyme inhibitors and diuretics have trial evidence, any other choices are appropriate as well. In the acute stroke settings calcium channel blockers like amlodipine could ensure minimal fluctuations if necessary for an emergency.

(Trials: PROGRESS, PATS, SPS3, SPRINT, PHASE)

Hyperlipidaemia management – Target LDL 70 mg/dL

Lipid lowering therapy with statins (3-hydroxy 3-methylglutaryl coenzyme A) are clearly established in high doses from the acute stroke setting irrespective of the initial lipid status aiming an LDL target near 70mg /dL. There are mixed evidence for small vessel disease of the brain and haemorrhagic strokes as marginally higher rates of microbleeds are noted with statins.

Antiplatelet treatment

Antiplatelet treatment is clearly established as beneficial following minor acute ischaemic strokes and TIA with a loading dose within first 48-72 hours but as soon as possible (best after ruling out bleeding by brain imaging). Aspirin up to 325mg and clopidogrel 300mg or 600mg can be administered as single loading doses and low doses (75mg) of aspirin and clopidogrel can be continued up to 21 days. Thereafter single antiplatelet is recommended. There are only very few indications to continue dual antiplatelets up to 90days but usually single antiplatelet suffices.

This recommendation cannot be carried out in all clinical settings especially when there is a large infarct and delaying by a few days or up to two weeks would be

appropriate when large middle cerebral artery infarcts with haemorrhagic transformations and significant oedema occur. An individualized clinical decision with a consistent unit or hospital policy would help in decision making in these dynamic scenarios.

The ideal antiplatelet is debatable. As a first choice it is usual to start aspirin and reserve clopidogrel for recurrences. However, recurrence while on an antiplatelet agent could be a result of multitude of other factors including compliance which need rigorous reinstitution of above-mentioned clinical methods for the correct reason to be found.

There is evidence from a few trials for dypiridamole, and emerging evidences with cilasatazol and and ticagrelor but further evidence is needed.

(Trials : CHANCE, POINT, ARCH, CADISS, SAMPRISS, CAPRIE, MATCH, ESPS, ESPIRIT, PROFESS, TARDIS, CSPS 2, SOCRATES, THALES)

Carotid revascularization

Symptomatic carotid stenosis of >70% if found in the acute setting has shown better outcome by revascularization in expert centers particularly within two weeks of the relevant stroke or TIA event. The benefits may still last upto a month and upto six months but to a lesser degree. Similarly symptomatic carotid stenosis between 50-69% too can be considered for revascularization within the two-week window but the selection hasto be reviewed with other risk factors and challenges.

Anticoagulations for specific indications

There are evidence based indications for cardioembolic and few other strokes for anticoagulation. The most common indication is paroxysmal atrial fibrillation. Other cardiac states like mechanical valves, low ejection fraction (<35%), documented cardiac thrombus are few of the other indications. Traditionally this had been with warfarin but now with the availability of novel oral anticoagulants (NOAC) these indications are being revaluated in more clinical settings.

Glycaemic control

Diabetes is a major stroke risk factor and having an HbA1c below 7 is indicated as a secondary prevention measure. But just like withblood pressure, avoiding fluctuations is more important than individual target values either for HbA1c or blood glucose. Even in acute setting while keeping the blood glucose under 200mg/dL is beneficial, intensive lowering is not superior to sliding scale based management.

Stopping tobacco smoking

Tobacco smoking is a major risk factor if present and stopping smoking has good evidence for secondary prevention.

Other secondary prevention stratergies

There are multiple other secondary prevention strategies. Some of these like maintaining ideal BMI, good nutrition, regular aerobic exercises are common to primary prevention as well. However, there are other targeted secondary prevention strategies which depend on risk factors identified. Here, a few of these are enumerated.

1. Treating obstructive sleep apnoea
2. Treating or reducing renal impairment
3. Folic acid for homocystenaemia

Primary prevention strategies

Most of the primary prevention strategies can be broadly applied to secondary prevention as well except for few unique ones . These are aimed at minimizing the risk factors.

These include

1. Regular screening and treatment of hypertension
2. Screening and early treatment of diabetes melitus
3. Screening and treatment of dyslipidaemia
4. Avoiding smoking (both passive and active)
5. Regular physical activity or exercise (recommended moderate to vigorous intensity exercise minimum 30 mintues a day for 3-4 days of the week)
6. Healthy, balanced and nutritious diet
7. Low salt intake
8. Avoiding excessive alcohol intake

Prevention of haemorrhagic strokes

This account will not be complete without discussion on prevention of haemorrhagic stroke, accounting for nearly 13% of all strokes but having a potential to cause devastating morbidity and mortality. Most of the primary prevention stratergies mentioned for ischaemic stroke applies to haemorrhagic strokes too. However control of hypertension takes precedence while, the place for antilipid treatment is controversial without a definite conclusion. Same applies to secondary prevention.

Some haemorrhagic strokes could be related to medications being taken. Hence it is vital we prescribe every medication to our patient considering the risk/benefit ratio and be responsible for advising cautions. As mentioned above the indications for antiplatelets and anticoagulants should be evidence based and carefully tailored to patient's unique clinical status. Also medication interactions should be anticipated and advised.

Timely management of cerebral vascular malformations and aneurysms and medical and obste-

atric emergencies causing hypertensive emergencies would also contribute to minimize haemorrhagic strokes.

COVID-19 and stroke prevention

It is now clearly established COVID-19 increases stroke risk. Despite some increase of stroke events with some COVID-19 vaccines, preventing COVID-19 by usual precautions and vaccination would also help in both primary and secondary prevention of ischaemic stroke events.

REFERENCES

1. Kim, Anthony S. Medical Management for Secondary Stroke Prevention. Continuum, April 2020. Volume 26
2. Furie, Karen. Epidemiology and Primary Prevention of Stroke
3. Queens' Square Textbook of Neurology
4. Clinical Trails mentioned above

Nutrition for Protection: The Focus of National Nutrition Month – 2021

Dr. Yasoma P.K. Weeraseakara
Consultant Community Physician
National Nutrition Month Coordinator-2021
Nutrition Division
Ministry of Health, Sri Lanka

Dr. Anoma C. M. Basnayake
Consultant Community Physician
Nutrition Division
Ministry of Health, Sri Lanka

Fig 1:Five key guidelines selected for National Nutrition Month

Introduction

The National Nutrition Month (NNM) is an annual event coordinated by Nutrition Division of the Ministry of Health to raise awareness and stimulate action on a theme of public health Nutrition. In 2021 December, the NNM is declared under the theme of "Nutrition for Protection". This theme focuses on achieving proper balance through healthy eating to protect the community from infections, non-communicable diseases (NCD) and malnutrition.

The definition for 'healthy diet' is inclusive of essential nutrients and specific food groups which are linked with positive health influences and prevention of non-communicable disease(1). Healthy diet emphasizes on consumption of macronutrients (i.e., carbohydrates, proteins, and fats) in appropriate amount to support energy and physiological needs.

Healthy diet and its contribution to immunity received much attention during the COVID 19 pandemic era. But the importance of healthy eating patterns to shape immune system is not restricted to such acute challenges. Healthy eating combined with other healthy life style factors such as exercise, adequate sleep and low stress, is vital for supporting a strong immune system. Healthy diet support immune defensive functions of intestines, inhibits pro-inflammatory mediators, promotes anti-inflammatory respons-

es and ensures proper functioning of immune cells(2). Inadequacies of intake of essential nutrients are associated with impaired immune functions and increased tendency to infections. Excess intake of refined sugar, saturated and trans fats, and salt trigger diet related NCDs such as diabetes mellitus, cancers, cardio vascular disease and certain autoimmune diseases

Sri Lanka is currently facing a 'triple burden' of malnutrition, coexistence of over-nutrition, under-nutrition and micronutrient deficiencies. Rapid urbanization, sedentary lifestyles, expansion of the commercial food market leading to increased availability of ultra-processed food high in fat, sugar and salt has led to over nutrition. COVID 19 crisis has further adversely affected dietary habits due to limited access to healthier fresh food products. It has also lowered affordability due to economic impact and increased access to unhealthy food products via online marketing platforms. A study on Sri Lankan food consumption pattern has revealed that an average Sri Lankan adult consume a high portion of carbohydrates (over 14 servings of starch/day) which is much higher than the recommended serving size. The daily intake of fruits and vegetables is about 2·16 portions/day which is well below the recommended portion of >5 servings/day(3). A recent survey on school going adolescents also has revealed that proportion of children who consume commonly available local fruits daily is low while about 18% of them consume biscuits every day(4).

Food based dietary Guidelines

Food Based Dietary Guidelines (FBDGs) is a FAO/WHO recommended tool which provides guidance for adapting culturally appropriate country specific healthier eating habits for individuals and populations. Sri Lanka first published food-based dietary guidelines in 2002. It was revised in 2011 and 2020. Current FBDG consists of fourteen general key guidelines (Table 1) and four specific guidelines for healthy eating and lifestyle. Five of these key guidelines which contribute to overall health, are selected to emphasize during the NNM 2021 and over the 2022 until next NNM.

Table 1: FBDG Key Guidelines (14)

1. Add colour to your daily meals balancing the correct amounts
2. Eat whole grains and their products including less polished or parboiled rice, instead of refined grains and their products
3. Eat at least two vegetables, one green leafy vegetable and two fruits daily
4. Eat fish or egg or lean meat with pulses at every meal
5. Limit sugary drinks, biscuits, cakes, sweets and sweeteners
6. Have fresh milk or its fermented products.
7. Eat a handful of nuts or oily seeds daily.
8. Limit salty foods and adding salt to food.
9. Water is the healthiest drink: drink 8 to 10 glasses (1.5-2.0 litres) throughout the day
10. Be active: Engage in moderate physical activity for at least 150 – 300 minutes per week.
11. Sleep 7-8 hours continuously everyday
12. Eat clean and safe food
13. Eat fresh and home cooked food: limit processed and ultra-processed foods
14. Always read labels of packaged food

Guideline 1: Add colour to your daily meals balancing the correct amounts

The essential food that make up a healthy dietary pattern include, cereals, vegetables of all types in different colours (e.g. green, red, yellow and orange), green leaves, fruits, pulses, animal sources of protein (e.g. fish, sea food, eggs, lean meats), nuts and oily seeds. Starchy food such as yams, jackfruit, breadfruit as well as fresh milk and its fermented products can be consumed as per preference to add variety to the daily diet. Some of these foods together with condiments and herbs have functional properties providing health benefits beyond their nutritional value.

Guideline 2: Eat whole grains and their products including less polished or parboiled rice, instead of refined grains and their products

Whole grains and parboiled rice add vitamins and minerals to the diet which are lacking in refined grains and their products. Except for rice, other commonly consumed cereals in Sri Lanka are kurakkan, maize, and wheat. Cereals, starchy foods (e.g. yams, jackfruit, breadfruit) and their products mainly provide carbohydrate, and they should provide 55% - 65% of the daily requirement of energy.

Guideline 3: Eat at least two vegetables, one green leafy vegetable and two fruits daily

Sri Lanka is blessed with a wide variety of perennial fruits and vegetables, while some are seasonal or locally available. Each fruit or vegetable is different in taste, colour and texture adding variety to the diet. They are rich in vitamins, minerals, antioxidants and fibre. Therefore they help to improve immune response and prevent

and control noncommunicable diseases. Fruits and vegetables can be consumed as a healthy snack while some of them have medicinal properties (e.g. bitter gourd, thebu).

Consumption of at least 400 grams of edible vegetables, green leaves and fruits daily provides vitamins, minerals, and fibre in required amounts. It equivalent to consuming two vegetables (3 table spoons each), three table spoons of green leaves and two fruits a day.

Guideline 4: Eat fish or egg or lean meat with pulses at every meal

Pulses, fish, eggs, poultry, and lean meat are major sources of protein in the diet. These foods are also rich in vitamins and minerals too. Animal sources of proteins are good quality proteins as they contain all essential amino acids which cannot be synthesized in the body. Proteins from pulses are better absorbed when consumed with cereals. At the same time, plant sources of protein supports environmentally sustainable healthy diet and do not cause heart diseases.

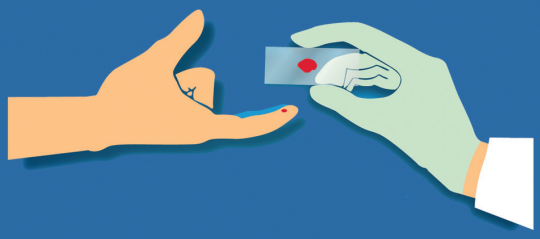
Guideline 5: Limit sugary drinks, biscuits, cakes, sweets and sweeteners

Sugar is addictive and the forms (table sugar/sucrose) that is added to food and beverages provides empty calories which do not have other nutrients except for carbohydrates. Starchy food consumed, is also converted to simple sugars in the body. Consumption of sugar sweetened beverages (SSB), biscuits, cakes and other sweets promotes excess energy intake leading to inflammatory diseases, obesity and other non-communicable diseases.

During NNM, professionals, public health teams, primary health care teams, UN agencies and civil society organizations will work in close collaboration to raise awareness among general public on these five key guidelines and to promote sustainable behaviour change. Further advocacy sessions will be conducted highlighting the need of supportive environment to make healthy choices easy and affordable ones. Nutrition month indicate only the initiation of action; the remaining activities towards the theme will be continued throughout the coming year.

REFERENCES

1. Cena H, Calder PC. Defining a healthy diet: Evidence for the role of contemporary dietary patterns in health and disease. Nutrients. 2020.
2. Wu D, Lewis ED, Pae M, Meydani SN. Nutritional modulation of immune function: Analysis of evidence, mechanisms, and clinical relevance. Frontiers in Immunology. 2019.
3. Jayawardena R, Byrne NM, Soares MJ, Katulanda P, Yadav B, Hills AP. High dietary diversity is associated with obesity in Sri Lankan adults: An evaluation of three dietary scores. BMC Public Health. 2013;
4. Jayatissa R, Fernando DN, Herath H. Nutritional Status, Dietary Practices and Pattern of Physical Activity Among School Children Aged 6-12 Years. Unicef/WFP/SDGF [Internet]. 2017;1–43. Available from: https://www.wfp.org/publications/2016-national-status-dietary-practices-and-pattern-physical-activity-among-school-children-a



Reduce the Delay in diagnosing imported Malaria

If a malaria patient is left untreated

- Risk of complications & death of the individual increases
- Could lead to re-introduction of malaria in Sri Lanka

Malaria should be suspected in all fever patients with a travel history to a malaria endemic country …..!!

Common causes for delay in diagnosis:

- Forgotten disease
- Atypical presentations
- Mimic other common febrile diseases with thrombocytopenia

Anti Malaria Campaign Headquarters
Public Health Complex, 3rd Floor, 555/5,
Elvitigala Mawatha, Colombo 05, Sri Lanka.

94 (112) 588947 | Director
94 (112) 369873 | Medical Officers
94 (112) 588408 | General Line
071 2841767 | Hotline
antimalariacampaignsl@gmail.com

Call 24/7 **HOTLINE** for free advice on prophylaxis, malaria prevention and notification of malaria suspects

011 7 626 626

www.malariacampaign.gov.lk

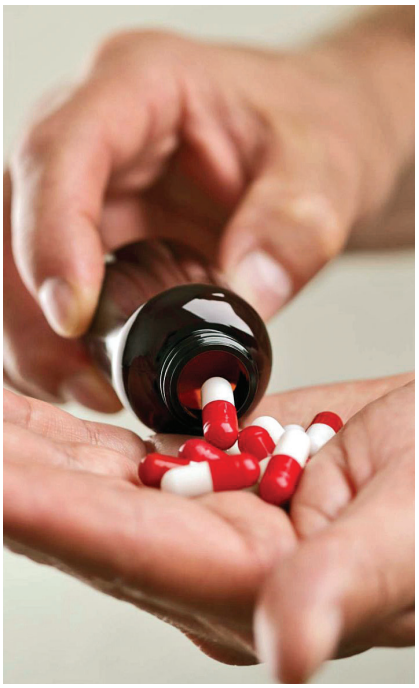
"Antibiotic"; has the Term Contributed to "Resistance"?

Veranja Liyanapathirana
(MBBS, MPhil, PhD)
Department of Microbiology
Faculty of Medicine
University of Peradeniya
Sri Lanka

What is an "antibiotic"? Antibiotics are drugs used in treating bacterial infections. These are not meant to be used indiscreetly in treating any infection caused by any form of microorganism.

However, the term antibiotic may denote a broader meaning, akin to an antimicrobial in the minds of many. Even the Sinhala term "prathijivaka" has a broader meaning and literally translates to "against-lives". While the term "antibacterial" is more specific, this term is not commonly used.

A couple of recent surveys we conducted as student led projects revealed that understanding on antibiotics among the general public needs improving. In an online survey we conducted, we asked the participants if they knew what an antibiotic is. Of the 204 participants, 190 (93.1%) stated they knew what an antibiotic is. They were subsequently asked to define an "antibiotic in their own words". Thematic analysis of their responses identified that 51 (26.8%) of this190 defined antibiotics as agents that can kill any micro-organism (1). Further, when asked to name examples for antibiotics, the study participants gave a plethora of substances, including antiseptics (povidone iodine and triclosan), vaccines (anti-rabies vaccine), antipyretics (paracetamol), antihistamines (chlorpheniramine and cetirizine), and other drugs such as domperidone, aspirin, insulin, saline, as well as plants (cannabis and "weniwelgeta").



Many people believe that antibiotics are effective against common viral infections such as common cold. In the same survey, 147 (72.1%) believed that antibiotics can cure or speed up the recovery from a cold (1). In another survey conducted among 450 patients attending an out-patient department, 391(86.9%) believed that antibiotics can cure or speed up recovery from common cold (2).

Antibiotic resistance has spread globally. The whole world, including Sri Lanka is at the brim of a post-antibiotic era. Infections with antibiotic resistant bacteria have been prevalent in hospitals in Sri Lanka for some time. However, now we find increasing rates of community acquired infections due to antibiotic-resistant bacteria. In addition, many healthy community members are colonized with antibiotic resistant bacteria. While these may be innocent by-standers for most part, these antibiotic resistant bacteria colonizing healthy people may lead to infections opportunistically, or in others who are vulnerable.

These indicate that there is an urgent need to explore the drivers of antibiotic resistance in our community. While we have been concentrating on guidelines to rationalize antibiotic use in health care setting, the sociology of antibiotic misuse has been ignored locally. Among the many sociological factors that drive antibiotic misuse, has the use of the term "antibiotic" instead of "antibacterial" led to a confusion in understanding on the action of an antibiotic? And has this also contributed to the misuse of antibiotics in the local context?

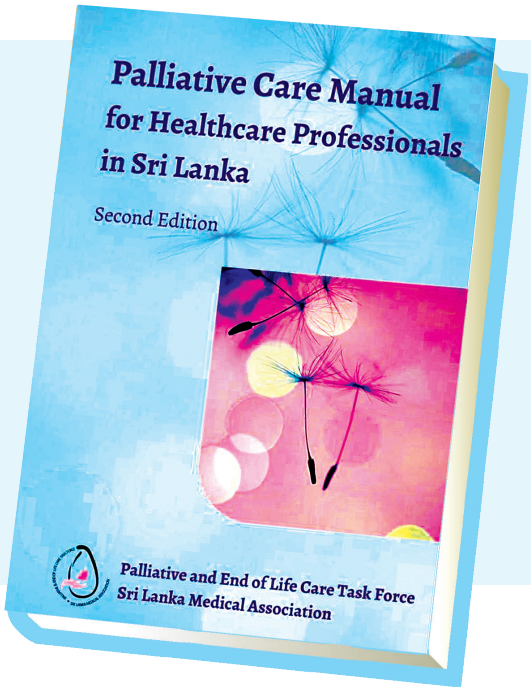
REFERENCES

1. Priyasad I, Abeyrathna HMHGGSS, Abhayasinghe PRRMRD, Althaf KR, Amarajeea OR, Liyanapathirana LVC. Knowledge, attitudes and practices related to antibiotic resistance among a cohort of internet users in Sri Lanka. The Bulletin of the Sri Lanka College of Microbiologists. 2018. Volume 16(1); 33-34.

2. Abhayasinghe PRRWMRD, Abeyrathna HMHGGSS, Amarajeewa OR, Althaf KR, Alahakoon AMAPK, Abewardhana IMAP, Alahakoon ARRP, Al-Hithaya UKF, Amarasinghe AKDAE, Dema C, Pelzom T, Liyanapathirana V. Awareness on antibiotic use and drivers of antimicrobial resistance among patents attending the outpatient department at Teaching Hospital, Peradeniya. The Book of Abstracts of the Annual Academic Sessions of the Kandy Society of Medicine. 2020. pp 65.

The Palliative and End-of-Life Care Task Force of the SLMA is celebrating its 5th anniversary this year. The Task Force launched the 'Palliative Care Manual for Healthcare Professionals in Sri Lanka' recently on the World Hospice and Palliative Care day under the auspices of the Ministry of Health. The new publication is the updated 2nd Edition of the landmark publication done in 2017, 'Palliative Care Manual for Management of

Non-Cancer Patients: A Guide for Health Care Professionals. This time it has contributions from a variety of disciplines including cancer palliative care and provides guidance to all aspects of palliative and end-of-life care. This Manual still stands as the only Sri Lankan textbook dedicated to palliative care.



Book Review

The SLMA, its Palliative and End-of-Life Care Task Force, and authors of the Manual should be congratulated for producing a comprehensive resource on palliative care for health professionals. It fills the void that has existed for many years in Sri Lanka.

Though our health sector has made remarkable achievements at a relatively low cost, we lag behind in certain sectors and disciplines. The latter category is palliative care and care of persons at the end-of-life, and a postgraduate training program dedicated to the specialty was only begun recently.

With a relatively large proportion of people dying in hospitals, it is increasingly relevant for all categories of health personnel to develop a holistic approach to end-of-life events and palliation. The publication covers almost all the relevant aspects required for those who care for fellow humans as they face these extremely emotional and complicated parts of life. It covers the crucial topics of the specialty comprehensively and enables those interested to learn, reflect and improve the care they provide.

The topics covered are diverse. They range from: how to recognise when a person is dying; non-cancer palliation; managing intractable symptoms such as breathlessness; treating specific disorders based on systems; providing support to carers (eg loss, grief, and bereavement); and resolving difficult ethical issues and legal entanglements (eg deaths occurring in the person's home). These contents are especially useful due to the scarcity of local literature and lack of clear statutes.

A manual or a textbook is not written in stone. As we accrue more experience in this discipline, the profession and the authors could explore other themes, further. For example: What are the cultural and religious practices of individuals and families when a person is dying? How do religious observances help to overcome grief? How do they explain the question that often looms in front of the dying "why did the incurable illness affect me"? How does belief in Karma help Buddhists to reduce their anxieties about the process of dying? Does belief in a God or Brahma help families to overcome grief? In addition to simple knowledge transfer, incorporating such topics could lead to healthy debates in several other areas: "Should our health systems acknowledge cultural practices and incorporate them as part of the care we provide?"; "Should the medical profession which is dominated by a Eurocentric culture become more locally relevant?" For medical historians, the inevitable question is "Have we failed to acknowledge these themes because as a profession have we ignored or suppressed our indigenous local cultures?"

My tribute and congratulations to all those involved in producing this book. I am certain it will help improve skills and stimulate people to reflect and become better carers. May this publication ease the pain, anxieties, and sorrows we all face during the inevitable passage called "end of life".

Saroj Jayasinghe
MBBS (Col), MD (Col), MRCP (UK), MD (Bristol), PhD (Col), FRCP (Lond), FCCP, FNASSL
Emeritus Professor of Medicine
University of Colombo
Consultant, Department of Medicine
Sabaragamuwa University of Sri Lanka
Consultant Physician

Award Winners (Oral and Poster Presentation) at the 134th Anniversary Medical Congress

E M Wijerama Award - for the best paper
OP- 21
FREQUENCY OF EX VIVO IFNY ELISPOT RESPONSES TO A SINGLE DOSE OF CHADOX1-NCOV-19 IN THE SRI LANKAN POPULATION
Pushpakumara PD[1], Jeewandara C[1], Jayathilaka D[1], Guruge D[2], Kamaladasa A[1], Abeyrathna S[1], Danasekara S[1], Dayarathne S[1], Thilagaraj P[1], Wijesinghe A[1], Ranasinghe T[1], Wijayamuni R[2], Samaraweera S[3], Dong T[3], Ogg G[3], Malavige GN[1]
[1] *AICBU, Department of Immunology and Molecular Medicine, University of Sri Jayewardenepura, Nugegoda, Sri Lanka*
[2] *Colombo Municipality Council, Colombo, Sri Lanka*
[3] *Epidemiology Unit, Ministry of Health, Sri Lanka*
[4] *MRC Human Immunology Unit, MRC Weatherall Institute of Molecular Medicine, University of Oxford, Oxford, United Kingdom*

S E Seneviratna Award - for the best paper (runners up)
OP-29
LONELINESS AND ITS RELATIONSHIP WITH SOCIAL INTERACTION AND BEHAVIOUR AMONG ELDERLY IN HIKKADUWA MUNICIPAL AREA
Subathevan S[1], Suganthan S[1], Suranjith GHC[1], Jayasumana HMKSD[2], Weliange SDS[3]
[1]*Faculty of Medicine, University of Colombo*
[2]*Postgraduate Institute of Medicine, University of Colombo*
[3]*Department of Community Medicine, Faculty of Medicine, University of Colombo*

H K T Fernando Award - for the best paper (3rd Place)
OP-22
VENOM INDUCED THROMBOTIC MICROANGIOPATHY FOLLOWING HUMP-NOSED PIT VIPER (GENUS: HYPNALE) ENVENOMING: EFFECTIVENESS OF THERAPEUTIC PLASMA EXCHANGE
Rathnayaka RMMKN[1,2,3], Ranathunga PEAN[4], Kularatne SAM[5], Sugathadasa K[6]
[1]*Intensive care unit, Teaching Hospital, Ratnapura*
[2]*Department of Pharmacology, Faculty of Medicine, Sabaragamuwa University of Sri Lanka, Hidellana, Ratnapura*
[3]*Department of Veterinary Pathobiology, Faculty of Veterinary Medicine & Animal Science, University of Peradeniya*
[4]*Medical Unit, Teaching Hospital, Ratnapura*
[5]*Department of Medicine, Faculty of Medicine, University of Peradeniya*
[6]*Medical Statistic Unit, Teaching Hospital, Ratnapura*

Sir Nicholas Attygalle Award - for the best paper (4th Place)
OP- 12
PREVALENCE, PREDICTORS, AND OUTCOME OF CHRONIC KIDNEY DISEASE IN A COHORT OF AGING URBAN, ADULT SRI LANKANS
De Silva ST[1,2], Ediriweera DD[1], Niriella MA[1,2], Kasturiratne A[1], Pathmeswaran A[1], Kato N[3], Wickramasinghe AR[1], de Silva HJ[1,2]
[1]*Faculty of Medicine, University of Kelaniya, Ragama*
[2]*University Medical Unit, Colombo North Teaching Hospital, Ragama*
[3]*National Center for Global Health and Medicine, Toyama, Shinjuku-ku, Tokyo, Japan*

Wilson Peiris Award - for the best paper (5th Place)
OP-26
FACTORS ASSOCIATED WITH THE INITIATION OF TOBACCO SMOKING AMONG SCHOOLING ADOLESCENTS IN THE AGE GROUP OF 13 TO 15 YEARS IN THE KANDY DISTRICT
Rambukwella HWSR[1], Dissanayake DS[2]
[1]*Postgraduate Institute of Medicine, University of Colombo*
[2]*Department of Community Medicine, Faculty of Medicine, University of Peradeniya*

Daphne Attygalle Award - for the best paper in Cancer
PP- 148
IMAGE PROCESSING FOR THE DETECTION OF PAPILLARY THYROID CARCINOMA USING NUCLEAR FEATURES
Perera WKR [1], Wijesinghe HD [2], Silva ATP [3], de Silva MVC [2]
[1] *Faculty of Information Technology, University of Moratuwa, Sri Lanka*
[2] *Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka*
[1] *Department of Computational Mathematics University of Moratuwa, Sri Lanka*
[2] *Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka*

Sir Frank Gunasekera Award - for the best paper in Community Medicine / Tuberculosis
OP- 32
PRACTICES ON SAFETY AT SEA AMONG FISHERMEN IN THE WESTERN COASTAL AREA AND ASSOCIATION WITH RELATED KNOWLEDGE, ATTITUDES, AND TRAINING EXPERIENCE
De Silva SH[1], Deshapriya HDCH[1], Devapriya KVLS[1], Arambepola C[2]
[1]*Faculty of Medicine, University of Colombo*
[2]*Department of Community Medicine, Faculty of Medicine, University of Colombo*

Kumaradasa Rajasuriya Award - for the best paper in Tropical Medicine
PP- 227
ANTHROPOPHILIC BEHAVIOUR OF VECTOR SANDFLIES: IMPLICATIONS FOR LEISHMANIASIS DISEASE SPREAD AND CONTROL IN SRI LANKA
Kumarasiri RWCK[1], Senanayaka SASC[2], Shantha DS[2], De Silva BGDNK[3], Karunaweera ND[2]
[1]*Post Graduate Institute of Medicine, University of Colombo, Sri Lanka,*
[2]*Department of Parasitology, Faculty of Medicine, University of Colombo, Sri Lanka,*
[3]*Department of Zoology, Faculty of Applied Sciences, University of Sri Jayawardanapura, Sri Lanka*

SPECIAL Prize in Cardiology - for the best paper in Cardiology
PP- 89
CARDIOVASCULAR DISEASE RISK PREDICTION: COMPARISON OF FRAMINGHAM RISK SCORE AND WHO/ISH RISK PREDICTION CHARTS IN SABARAGAMUWA PROVINCE, SRI LANKA.
Nandasena HMRKG[1],[2], Tennakoon SUB[2], Ralapanawa DMPUK[3]
[1] *Department of Nursing, Faculty of Allied Health Sciences, University of Peradeniya*
[2] *Department of Community Medicine, Faculty of Medicine, University of Peradeniya*
[3] *Department of Medicine, Faculty of Medicine, University of Peradeniya*

S Ramachandran Award - for the Best Scientific Communication in Nephrology
OP-12
PREVALENCE, PREDICTORS, AND OUTCOME OF CHRONIC KIDNEY DISEASE IN A COHORT OF AGING URBAN, ADULT SRI LANKANS
De Silva ST[1],[2], Ediriweera DD[1], Niriella MA[1],[2], Kasturiratne A[1], Pathmeswaran A[1], Kato N[3], Wickramasinghe AR[1], de Silva HJ[1],[2]
[1]*Faculty of Medicine, University of Kelaniya, Ragama*
[2]*University Medical Unit, Colombo North Teaching Hospital, Ragama*
[3]*National Center for Global Health and Medicine, Toyama, Shinjuku-ku, Tokyo, Japan*

Award for the best presentation in Pharmacology
PP- 159
EFFICACY OF INDIAN AND AUSTRALIAN POLYVALENT ANTIVENOMS IN NEUTRALIZING THE PROCOAGULANT EFFECTS OF FOUR SNAKE VENOMS
Madhushani JDD, Madhushika MMH, Madialagan DP, Madushanka KADC, Maduwanthi WMY, Mahanama MGGNN, Silva NKA
Department of Parasitology, Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka. Saliyapura 50008, Sri Lanka

SLMA Prize for the Best Poster
PP- 65
USEFULNESS OF VIRTUAL AUTOPSY IN DIAGNOSING PATHOLOGIES IN THE PAEDIATRIC POPULATION- A SYSTEMATIC REVIEW
Edussuriya DH[1], Wickramasinghe CU[2], Perera S[3], Herath N[4]
[1],[2],[4] *Department of Forensic Medicine, Faculty of Medicine, University of Peradeniya*
[3] *Faculty of Medicine, University of Peradeniya*

JUST FOR A LAUGH

A class act

A frog telephones the Psychic Hotline. His Personal Psychic Advisor tells him, "You are going to meet a beautiful young girl who will want to know everything about you."
The frog is thrilled! "This is great! Will I meet her at a party?"
"No," says his advisor, "in her biology class."

We got it

Three statisticians go hunting for deer. They spot one off in the distance. The first one shoots about a meter too high; the second one, about a meter too low; the third one yells, "We got it!"

Measures to Prevent Re-Introduction of Malaria

Dr. Prasad Ranaweera,
Director,
Anti Malaria Campaign (AMC)

Since the year 2015 Sri Lanka has been certified as a country that has eliminated Malaria.
Although NO local transmission is seen to date, 50 imported Malaria cases are seen annually.
Travel restrictions due to the prevailing COVID-19 situation and the reduced number being screened have drastically decreased the number of Malaria cases detected in 2021.
Therefore, we request all doctors to be vigilant and follow the steps given below so as not to miss any case of malaria being imported to Sri Lanka.

IN ALL FEVER PATIENTS –	**ASK FOR A TRAVEL HISTORY TO A MALARIA-ENDEMIC COUNTRY**
TEST FOR A MALARIA –	**WHEN BOTH FEVER & TRAVEL TO MALARIA-ENDEMIC COUNTRY* WITHIN ONE YEAR IS PRESENT**
TEST FOR MALARIA –	**WHENEVER SIGN & SYMPTOMS ARE SUGGESTIVE OF MALARIA**

If you need further information please call AMC on 011 7 626 626 or 0712 841 767

EVERY CASE OF MALARIA THAT IS NOT DIAGNOSED POSES A MAJOR RISK OF RE-ESTABLISHING MALARIA IN THE COUNTRY BY TRANSMITTING THE INFECTION TO MOSQUITOS

*Malaria endemic countries –

A – Afghanistan, Angola, Azerbaijan
B – Bangladesh, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Brunei, Burkina Faso, Burundi
C – Carbo Verde, Cambodia, Cameron, Central African Republic, Chad, Colombia, Comoros, Congo, Corte d'Ivoire
D – DPR Korea, Djibouti
E – Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Eswatini, Ethiopia
F – French Guniea
G – Gabon, Gambia, Ghana, Guatemala, Guinea, Guinea-Bissau, Guyana
H – Haiti, Honduras
I – India, Indonesia, Iran
K – Kenya
L – Lao PDR, Liberia
M – Madagascar, Malawi, Malaysia, Mali, Mauritania, Mayotte, Mexico, Mozambique, Myanmar
N – Namibia, Nepal, Nicaragua, Niger, Nigeria
P – Pakistan, Panama, Papua New Guinea, Peru, Philippines
R – Rwanda
S – Sao Tome & Principe, Saudi Arabia (Yemen Border), Senegal, Sierra Leone, Solomon Islands, Somalia, South Africa, Sudan, South Sudan, Suriname, Swaziland
T – Tajikistan, Thailand, Timor-Leste, Togo
U – Uganda, United Republic of Tanzania
V – Vanuatu, Venezuela, Vietnam
Y – Yemen
Z – Zambia, Zimbabwe

GREEN EMBAZY

HOMAGAMA

Absolutely BEAUTIFUL
LANDS & HOUSES

A serene expanse of 37 acres, surrounded by tranquil woodlands interlined with 170 luxurious living spaces, beautifully designed in 7 intricate styles. A green hideaway, built with a range of modern amenities that range from a swimming area, a gym, yoga deck and so much more. Truly a place to find your calm.

PRIME LANDS RESIDENCIES PLC

COMMITTED TO CREATING A BETTER PLACE ON EARTH

+94 710 777 333

t | +94 112 699822 f | +94 114 209691 | info@primeresidencies.lk w| primeresidencies.lk

WWW.SLMA.LK

“WIJERAMA HOUSE”,

NO. 6, WIJERAMA MAWATHA,
COLOMBO 07,

+94 112 693 324,
office@slma.lk