Sri Lanka Association of Clinical Pharmacology and Therapeutics

CLINPHARM 22

Academic Sessions 2022

Proceedings of the Academic Sessions of SLACPT 2022

Academic Sessions of the Sri Lanka Association of Clinical Pharmacology and Therapeutics (SLACPT)

26th – 27th June 2022
Nora Bartholomeusz Auditorium, The College of Surgeons Sri Lanka

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COUNCIL OF THE SRI LANKA ASSOCIATION OF CLINICAL PHARMACOLOGY AND THERAPEUTICS - 2022

From Left to right seated
Prof. Chamila Mettananda, Prof. Channa Ranasinha, Prof. Rohini Fernandopulle, *Vidya Jyothi* Prof. Asita de Silva (President), Prof. Priyadarshani Galappatthy, Prof. R. L. Jayakody, Prof. Shalini Ranganathan

From left to right standing
Prof. Chandanie Wanigatunge , Dr. Amodha Medagedara, Dr. Janake Munasinghe, Prof. Sachith Abeyrathna , Prof. Pradeepa Jayawardena, Dr. Sujeewani Kurukulasuriya

Absent
Dr. Roshini Murugupillai, Prof. Gita Fernando, Prof. Krishantha Weerasooriya, Prof. Sisira Siribaddhana, Prof. Priyanga Ranasinghe, Dr. Thilanka Seneviratne, Dr. Thiyahini Navaratinarajah

Sri Lanka Association of Clinical Pharmacology and Therapeutics

Council 2022

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Message from the President

The history of clinical pharmacology is very much longer than even the use of that descriptive name, and predates many other medical disciplines including cardiology, neurology, obstetrics and paediatrics. In a real sense, clinical pharmacology goes back to the work of Chinese, Indian and Peruvian traditional practitioners, who discovered the activity in herbal remedies that we now know as artemisinin, reserpine and quinine.

A clinical specialist is disease focused. A clinical pharmacologist is drug focused, but knowledge of all the properties of the drug in relation to disease is the essential requirement. This involves the ability to have a working knowledge of a number of fields, stretching from molecular pharmacology, through safety assessment, pharmacokinetics and metabolism, measurement of drug action in man, clinical trial design, pharmacovigilance, risk management to drug economics, utilization and regulation.

Established in 2015, the Sri Lanka Association of Clinical Pharmacology & Therapeutics (SLACPT) is one of the youngest professional medical associations in the country. Over the last five years, under the leadership of dedicated past-presidents and councils, the Association has continued to expand, focused on our strategic objectives and growing as a clinical pharmacology family.

As we enter a new decade, the SLACPT is also entering a new phase in its development. With the help of the council, we will endeavour to establish strong collaborations to create openings for scientific exchange and cooperation with other professional bodies and academia within Sri Lanka and beyond, with the aim of increasing our reach pact and impact. It is also a period in which we will be offering innovative ways for members to interact with each other and to share resources and ideas to further strengthen the Association.

Emerging from a devastating pandemic, compounded by a growing body of misinformation, our main focus over the next two years will be to promote evidence-based prescribing, improve safety of medicines through pharmacovigilance and contribute to improved patient care. The exciting and diverse scientific programme, which we have put together for this academic event with the participation of global opinion leaders is a reflection of our focus on state-of-the-specialty expertise. We hope the scientific programme will inspire many

postgraduate trainees to take up the discipline of clinical pharmacology or at the very least incorporate it at the heart of their speciality practice.

We look forward to your active participation, enthusiasm and perspective in making this event a success in propelling the SLACPT upwards and onwards.

Prof Asita de Silva MBBS, DPhil (Oxon), FRCP (Lond)
President
2021-2023

Message from the Honorary secretary

It is with great pleasure that we welcome you to the 4th Academic Sessions of the Sri Lanka Association of Clinical Pharmacology and Therapeutics, *ClinPharm 22*.

The Sri Lanka Association of Clinical Pharmacology and Therapeutics (SLACPT) is the apex body of pharmacologists in Sri Lanka. SLACPT is a non-profit organization established in 2015 committed to promoting the safe and effective use of medicines.

The SLACPT holds academic sessions biannually and this year we have planned an ambitious hybrid academic session, in the midst of a difficult national environment. Cognizant of the ongoing global environmental crisis, we have organized *ClinPharm 22* as a paperless academic event to minimize our carbon footprint. We are delighted that the British Pharmacology Society (BPS) is joining us at the inauguration ceremony, and we look forward to the prospect of future collaborations with them. We are honoured to have Professor Nilanthi de Silva, Vice-Chancellor of the University of Kelaniya as our chief guest, welcome our orator Professor Jeffrey Aronson from the University of Oxford as well as our internationally-recognised roster of speakers joining us from across the English-speaking world.

We have an exciting program with topics ranging from bench to bedside. The two-day program includes the SLACPT oration, free paper presentations, one symposium and a number of plenaries. We aim to challenge pharmacologists, clinicians, and trainees by updating their knowledge and expertise to provide an enhanced service to the public.

I thank all pharmacologists, clinicians, and trainees for joining these academic sessions and hope it will prove to be a rewarding experience.

Professor Chamila Mettananda
Secretary
SLACPT

Message from the Chief Guest

I am delighted to send this brief message on the occasion of the inauguration of the academic sessions of the Sri Lanka Association of Clinical Pharmacology and Therapeutics.

Clinical Pharmacology and Therapeutics is well-established as an academic discipline in most high income countries. It encompasses application of the principles of pharmacology and therapeutics in patient care: clinical trials in drug development, evidence-based therapeutics, quality use of drugs, drug regulation, pharmaceutical industry, toxicology, pharmacoepidemiology and pharmacovigilance.

Pharmacology is an essential subject in every undergraduate medical curriculum in Sri Lanka. Any medical practitioner engaged in clinical practice must remain up-to-date about the medicines that they prescribe for their patients, but even so, Clinical Pharmacology and Therapeutics is not yet well-established as an academic discipline in our country.

As the local pioneers of a rapidly advancing field that is applicable to all the specialities of medicine, the efforts taken by the Sri Lanka Association of Clinical Pharmacology and Therapeutics to initiate and promote their speciality in our country are highly commendable. To that end, I am happy to see the vibrant program of the academic sessions *ClinPharm 22*. I am sure it will provide all the conference participants with many opportunities for learning and networking.

I wish the conference all success!

Professor Nilanthi de Silva
Vice Chancellor, University of Kelaniya

Message from the British Pharmacology Society

The British Pharmacology Society is a membership charity with a mission to promote and advance all disciplines of pharmacology in the discovery, development, and use of medicines. We are a professional global community with nearly 5,000 members. We are proud to be a global community at the heart of pharmacology and we represent scientists from more than 60 countries worldwide.

We are delighted to be hosting the 19th World Congress in Basic and Clinical Pharmacology (WCP2023) in Glasgow, Scotland in July 2023 on behalf of IUPHAR and look forward to welcoming pharmacologists from across the globe from 2 – 7 July 2023.

The Society publishes the British Journal of Clinical Pharmacology (BJCP), a leading international clinical pharmacology journal addressing all aspects of drug action in humans. The BJCP has a global outlook and audience and welcomes submissions from authors across the world.

Our International Advisory Group was established by Council to represent the interests and views of international members, and to provide two-way communication between these members and Council and Committees.

The Prescribing Safety Assessment is an online assessment of competency in the safe and effective prescribing of medicines, taken by final-year medical students in the UK. It is developed and run jointly by the UK's Medical Schools Council and the British Pharmacology Society(BPS). It is mandatory in the UK and is increasingly being taken up across medical schools internationally. We are delighted to support a collaboration led by the clinical pharmacology association to introduce the Prescribing Skills Assessment (PSA) to medical students throughout Sri Lanka.

We are delighted to be represented at the academic sessions of SLACPT and look forward to collaborating with members of SLACPT in the coming years. We wish the SLACPT every success in the upcoming academic sessions.

Professor Reecha Sofat
Vice President
British Pharmacology Society

Our faculty

Professor Theresa Shapiro
Professor of Medicine, Pharmacology & Molecular Sciences, John Hopkins University School of Medicine

Professor Craig Anderson
Professor of Neurology and Epidemiology in the Faculty of Medicine at the University of New South Wales, Sydney.

Professor Alta Schutte
Principal Theme Lead of Cardiac, Vascular and Metabolic Medicine, Faculty of Medicine at University of New South Wales, Sydney

Professor Nikhil Tandon
Professor of Endocrinology, Metabolism and Diabetes, All India Institute of Medical Sciences.

Professor Christine Jenkins
Professor of Respiratory Medicine, Faculty of Medicine, University of New South Wales, Sydney

Professor Neelika Malavige
Professor and Head Department of Immunology and Molecular Medicine, University of Sri Jayawardhanapura

Professor Trevor Sharp
Professor of Neuropharmacology, University of Oxford

Professor Jane Armitage
Professor of Clinical trials and Epidemiology, University of Oxford

Professor Kareem Meeran
Professor of Endocrinology, Imperial College, London.

Professor Madhav Thambisetty
Head, Clinical and Translational Neuroscience Section, Adjunct Professor of Neurology, John Hopkins University School of Medicine

Induction of the President of the Sri Lanka Association of Clinical Pharmacology and Therapeutics

and Inauguration Ceremony of the Academic Sessions 2022

26th June 2022	Program
6.00 pm	Guests take their seats
6.15 pm	Arrival of Chief Guest
6.30 pm	Ceremonial Procession
6.35 pm	National anthem
6.40 pm	Lighting of the ceremonial oil lamp
6.45 pm	Welcome address – Professor Channa Ranasinha (Vice-president, SLACPT)
6.50 pm	Induction of the President
7.00 pm	Award of the Past President's medal to Professor Rohini Fernandopulle (Immediate Past President)
7.05 pm	Presidential Address – Professor Asita de Silva (President, SLACPT)
7.20 pm	Address by Chief Guest – Professor Nilanthi de Silva (Vice Chancellor, University of Kelaniya)
7.35 pm	Address by Professor Reecha Sofat (Vice President, British Pharmacology Society)
7.45 pm	SLACPT oration - Professor J K Aronson, (Consultant Physician and Clinical Pharmacologist, Centre for evidence-based Medicine, Oxford)
8.15 pm	Vote of thanks – Professor Chamila Mettananda (Secretary, SLACPT)
8.20 pm	Procession leaves the hall
8.30 pm	Fellowship

SLACPT orator 2022

Professor Jeffrey Aronson, Consultant Physician and Clinical Pharmacologist
Centre for Evidence-Based Medicine, University of Oxford

Prof Jeffrey Aronson is a Physician and Clinical Pharmacologist working in the Centre for Evidence-Based Medicine in the University of Oxford. He has written widely about all aspects of clinical pharmacology, medical history, philosophy of medicine, and medical language, and writes a weekly *BMJ* opinion column.

He was Editor-in-Chief of *Meyler's Side Effects of Drugs—The International Encyclopaedia of Adverse Drug Reactions and Interactions* (16th edition, 2015) and of its annual update volumes (*Side Effects of Drugs Annuals 15–35*) and is currently preparing the 17th edition of Meyler. He chairs the British Pharmacopoeia Commission's Expert Advisory Group on Pharmacy and Nomenclature and is a member of the WHO's Expert Advisory Panel on International Pharmacopoeia and Pharmaceutical Preparations. He is President Emeritus, an Honorary Fellow, and immediate past Vice-President Publications of the British Pharmacology Society and an Emeritus Fellow of Green-Templeton College, Oxford.

SLACPT oration - 2022

"Drug shortages - causes and solutions"

by Professor Jeffrey Aronson, University of Oxford

Drug shortages have complex causes, and a single cause cannot always be identified. Reasons include lack or shortage of raw materials, manufacturing difficulties, regulatory and political actions, voluntary recalls, just-in-time inventory systems, halts in production for financial or other business reasons, low demand (e.g. orphan products, reduced usage), mergers, market shifts (e.g. diversion to home markets), and unexpected increases in demand (e.g. improved diagnosis, new trial information, epidemics, inappropriate use, off-label use)

Adverse drug reactions and medication errors attributable to shortages occur but are not often reported. Adverse reactions to substitute medicines are possible, and errors can occur because of unfamiliarity or unnecessary treatment with replacement medicines. Other harmful outcomes include withdrawal reactions, under treatment, treatment delays and cancellations, failure of alternatives, and disruption of clinical trials.

Potential solutions are as diverse as potential causes. Prevention is hard because shortages are not easily predicted. Responsibility for anticipating and managing shortages involves everyone in the supply chain, including manufacturers and suppliers, particularly of generic formulations, pharmacists, prescribers, patients, and governments. Solutions can therefore be classified according to where the responsibility for implementing them lies.

Summary of invited presentations

Plenary 1 : Toward a Chemical Vaccine for Malaria

Prof Theresa A. Shapiro

Despite concerted efforts, that over several decades successfully cut by half the world's burden of malaria, in recent years progress has stalled and appears to be reversing. Bednets, drug treatments, and, most recently, the *P. falciparum* RTS, S vaccine, are means of control, but new strategies are clearly needed. Among the candidate options are long-acting injectable antimalarial drugs, which for prophylaxis have aptly been termed "chemical vaccines". An attractive drug for this new indication is atovaquone, a potent broad-spectrum antiprotozoal, that in over 20 years of clinical use has proven effective and well-tolerated. A Phase 1/2 trial at Johns Hopkins, exploiting the power of pharmacokinetics, convincingly demonstrated that atovaquone has causal prophylactic action against mosquito-borne *P. falciparum*, a study deemed pivotal by FDA for its approval of Malarone. Difficulty complying, for months to years, with daily oral dosing regimens has led to a number of commonly used injectable therapies, including contraception and antipsychotics. Successful adaptation to anti-infectives is evident in recent approval of cabotegravir for pre-exposure prophylaxis against HIV. We have collaborated with colleagues at the University of Liverpool to explore the use of long-acting injected atovaquone for causal prophylaxis against malaria. In a stringent murine model, atovaquone when given orally protected for one day against mosquito-transmitted malaria, but the same dose given in a single intramuscular injection protected for 28 days. Allometric scaling to humans suggests several months of protection is possible. With funding from UNITAID we plan to complete the nonclinical testing of this formulation, and to conduct Phase 1 and 2a clinical trials of pharmacokinetics and safety, and of causal prophylactic activity in healthy volunteers.

Symposium on CVD :
I Hypertension in acute stroke: what's the evidence for the effectiveness of blood pressure lowering?

Prof. Craig Anderson

Blood pressure (BP) is often elevated after acute stroke and is associated with increased mortality and poor functional outcome. However, there an ongoing conundrum as to whether the lowering of BP provides benefits for such patients through favourable effects on the blood-brain barrier, or that it could worsen the chances of recovery from adverse effects on cerebral perfusion where there is aberrant cerebral autoregulation, particularly after acute ischemic stroke. Two large trials (INTERACT2 and ENCHANTED) have shown that BP lowering clearly reduces bleeding in the brain but without any clear effects on improving functional recovery. There are also uncertainties over the optimal timing, agent, and approach to BP control for both acute intracerebral haemorrhage and acute ischemic stroke. Moreover, there may be particular harm in those patients with large ischemic lesions who receive endovascular clot retrieval for large vessel occlusion. My presentation provides an overview

of current knowledge regarding the benefits and risks of BP lowering, and areas for future research, in the context of acute intracerebral haemorrhage and ischemic stroke.

II Actions to improve blood pressure control in low- and middle-income countries

Prof. Alta Schutte

Over the past few decades, there have been major improvements in global death rates due to cardiovascular disease. Overall the management of hypertension has also improved, and this has been largely due to the availability of effective and affordable medications and clinical guidelines. However, the overall awareness, treatment and control rates of hypertension remain far from what we all hoped to achieve. There are also clear disparities between high and low-income regions and these are due to several challenges, including availability and access to medicines, shortage of healthcare staff, and overburdened health systems. Several global organisations, such as the International Society of Hypertension, the World Heart Federation, and World Health Organisation have taken important steps in recent years in an attempt to address these challenges. Key priorities to improve blood pressure control refer to the patient, provider and health system. Specific actions include improving awareness of raised blood pressure (with most people with hypertension in low-income regions being unaware), implementing clear short hypertension management protocols, ensuring access to effective low-cost medication, and training healthcare workers (including nurses and community health workers) to establish a system of team-based care. There are several success models demonstrating how implementing such systems carefully can substantially improve the detection, treatment and control of raised blood pressure, also in low- and middle-income countries.

III Diabetes Management in CKD

Prof. Nikhil Tandon

The talk will be a narrative about a practical and clinically relevant approach to the management of CKD in people with diabetes drawing extensively from current evidence. The areas focused on will include, glycemic monitoring and targets in such individuals, lifestyle interventions, antihyperglycemic therapies and a consolidated approach to the management of patients with diabetes and CKD. Reference will also be made to RAAS blockade in the management of such individuals, including emerging evidence of non-steroidal mineralocorticoid receptor antagonist therapy.

The key messages from the talk are as follows:

1. Hemoglobin A1c (HbA1c) remains the investigation of choice to monitor glycemic control in patients with diabetes and CKD, and should be performed 2-4 times per year, while recognizing the limitations of the test in more advanced stages of CKD. For individuals

showing discordant results between HbA1c and directly measured blood glucose levels, indicators derived from CGMS may be considered.

2. The recommended HbA1c target ranges from 6.5-8% which is personalised based on the severity of CKD and co-existing co-morbidities.
3. A protein intake of 0.8 g protein/kg (weight)/day is recommended for individuals with diabetes and CKD not treated with dialysis.
4. Metformin and SGLT2 inhibitors are the drugs of choice for initiating anti-hyperglycemic therapy in this group of patients. Other agents may be added as needed for glycemic control, while keeping in mind adverse effects (including hypoglycemia and weight gain), costs, and patient preference. Metformin and SGLT2i should be prescribed if the eGFR is equal to or more than 30 ml/m/1.73 m^2 and 20 ml/m/1.73 m^2 respectively.
5. Treatment with an angiotensin-converting enzyme inhibitor (ACEi) or an angiotensin II receptor blocker (ARB) should be initiated in patients with diabetes, hypertension, and albuminuria, and titrated to the highest approved dose that is tolerated. Nonsteroidal mineralocorticoid receptor antagonists with proven kidney or cardiovascular benefit for patients with T2D, should be considered for individuals with an eGFR ≥25 ml/min/1.73 m2, normal serum potassium concentration, and albuminuria (>30 mg/g) despite maximum tolerated dose of RAS inhibitors.

Plenary 2 : Management of COPD in 2022 and beyond

Prof Christine Jenkins

COPD management has gradually evolved over the last decade to focus on both symptoms and exacerbation prevention. COPD is a multifaceted disease and people with it are affected in different ways that are not fully explained by the severity of airflow limitation. The increasing global burden of COPD has drawn attention to its many causes apart from tobacco, and each of these requires different strategies to reduce continued exposure. Pharmacotherapy and non-pharmacologic interventions are equally important in achieving good outcomes for patients with COPD. Non-pharmacologic approaches include smoking cessation, maintaining physical activity, ensuring vaccinations are up to date and offering patients support for effective self-management. Pharmacologic management should be undertaken in a step-wise progression, depending on response to treatment, the presence of exacerbations with or without eosinophilia, and following the principles laid out in the GOLD strategy. COPD patients frequently have multiple comorbidities and their identification and management are important for optimising quality of life. Co-existing cardiac disease in particular influences mortality in COPD and should be treated if risk factors and clinical features are present. Finally, the Covid-19 pandemic has revealed some important consequences for patients with COPD regarding avoidance of viral infection to minimise exacerbations.

Plenary 3 : Pan sarbecovirus vaccines– the answer to ending COVID-19?

Prof Neelika Malavige

Despite many effective COVID-19 vaccines being developed and rolled out and record speed, and despite the development of many types of novel therapies and repurposing of existing drugs, the SARS-CoV-2 virus still causes significant morbidity in mortality in many countries. It appears as although we humans come off with the most novel technologies to 'beat' the virus, the virus evolves faster giving rise to immune evasive variants and variants that are able to transmit several folds higher than the ancestral variants.

While it is very clear that COVID-19 is here to stay with us, many are unsure what the future will be. The SARS-CoV-2 does appear to mutate at a higher rate than many other respiratory viruses, and therefore, it is likely that many other variants will emerge. The omicron variant itself is rapidly evolving and has so far given rise to many sub-lineages, which are several folds more immune evasive than the initial omicron BA.1 variant. While any variant that displaces Omicron would have to be more transmissible that it, future variants would not necessarily cause milder illness. There are many unanswered questions such as, what can we expect when COVID-19 becomes endemic, when can we declare that the pandemic has ended, will those who have got naturally infected, become infected several times in future and lastly, would be need more booster doses? Due to emergence of highly immune evasive variants, booster doses do not seem to prevent infection, although they are highly effective in preventing severe disease.

As many types of beta coronaviruses, have caused several previous pandemics and as there is a potential threat of emergence of different coronaviruses due to future 'spill over' events from animals, the way forward appears to be development of a pan sarbecovirus vaccine. A pan sarbecovirus vaccine should induce high levels of broadly neutralizing and functional antibodies, cross reactive T cells and most importantly be safe.

Plenary 4 : Serotonin receptors; from bench to bedside

Prof. Trevor Sharp

Over the last twenty years significant progress has been made in our understanding of the properties of 5-HT receptors in the brain. This new information has led to important advances, and some of these developments are highlighted in this presentation. Highlights include extensive mapping of 5-HT receptors in both animal and human brains as well as emerging data on how 5-HT receptors are distributed within complex neural circuits. Also, a range of important pharmacological and genetic tools have been developed that allow selective 5-HT receptor manipulation, in cells through to whole organism models. Moreover, unexpected complexity in 5-HT receptor function has been identified including agonist-dependent signalling that goes beyond the pharmacology of canonical 5-HT receptor signalling pathways set down previously. This new knowledge has been extended by the discovery of combined

signalling of 5-HT and co-released neurotransmitters, especially glutamate. Finally, another key advance has been the progression of a number of 5-HT ligands through to experimental medicine studies and clinical trials, and some such agents have already become prescribed therapeutic drugs.

Plenary 6 : Optimizing glucocorticoid replacement in adrenal failure

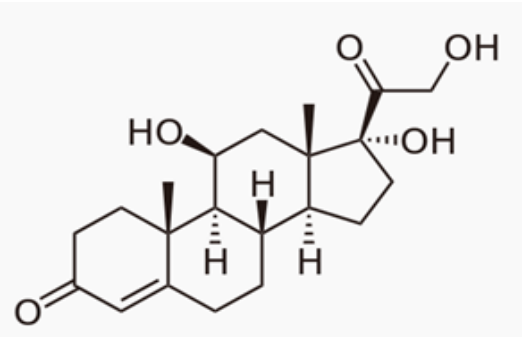
Prof. Karim Meeran

Glucocorticoid replacement is crucial to survival of patients with adrenal insufficiency, and insufficient replacement increases risk of adrenal crisis and death. Excessive replacement has been popular as this has a low risk of adrenal crisis.

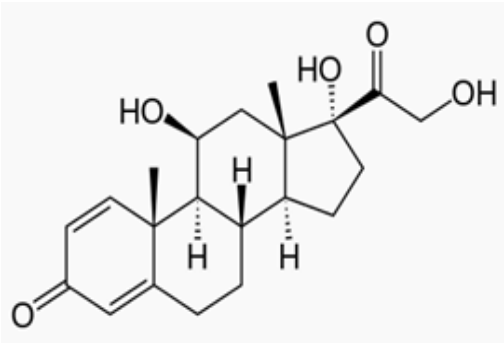
Recent data reveals an increased mortality associated with adrenal insufficiency despite glucocorticoid replacement therapy with a standardized mortality ratio greater than two. The cause of the increased mortality is yet to be definitively elucidated, but may be due to excess steroid exposure, or replacement regimens that are uncoupled from the normal physiological cortisol profile. Normally cortisol levels have a circadian rhythm, with a high level in the morning, that reduces during the day. When taken orally, hydrocortisone has a short half-life, and is administered thrice daily. This results in high levels after each dose, which might be responsible for the increased mortality. Alternatively, it might be that we use too much replacement. Use of once-daily dual-release hydrocortisone has been associated with an improved metabolic profile.

Modification of the cortisol molecule with a double-bond results in a longer half-life corticosteroid that can be administered once daily.

CORTISOL



1,2 DEHYDROCORTISONE



Trials comparing these molecules have so far suggested that there is no significant difference between thrice daily hydrocortisone and once-daily 1,2 dehydrocortisone, but randomised controlled trials are underway.

Plenary 7 : From Mechanisms of Medicine: Realising the DREAM of an Alzheimer's cure

Prof Madhav Thambisetty

Drug discovery for disease-modifying therapies for Alzheimer's disease and related dementias (ADRD) based predominantly on the traditional paradigm of experimental animal models has been disappointing. In the Drug Repurposing for Effective Alzheimer's Medicines (DREAM) study, an innovative multidisciplinary alternative to traditional drug discovery, we first use a systems biology approach into identifying biologic pathways that represent early drivers of AD pathogenesis. Next, we use large patient cohorts to test whether drugs approved for other indications that also target these pathways might alter the trajectory of the disease. We address key challenges in population based pharmacoepidemiologic studies aimed at quantifying the association between medication use and ADRD onset and outline robust causal inference principles to safeguard against common pitfalls. Candidate ADRD treatments emerging from this approach will hold promise as plausible disease-modifying therapies for evaluation in randomized controlled trials

List of Free Papers – Poster Presentations

PP 1 - Evaluation of ayurvedic and herbal product advertisements on electronic and print media in Sri Lanka
Fathima R, Liyanage CK, Ranasinghe C, Ranasinghe P

PP 2 - Knowledge on identification, immediate management and prevention of allergic reactions among beauticians in Gampaha district
Nayanananda DGTP, Nirosha WPR, Nishakara SNS, Nishshanka NMDNK, Nishshanka NMPS, Mettananda KCD

PP 3 - Usage of antibiotics in surgical units - one month clinical audit
Ekanayaka SPN, Indrarathne HRU, Dissanayake DMRS, Gunawardana WMMAS

PP 4 - Adverse drug reactions reported among inward patients of Teaching Hospital Karapitiya
Madhushika MT, Sewwandi LHC, Amarasinghe ATIM, Liyanage PLGC, Mendis SA, Jayasinghe SS

PP 5 - Good pharmacy practices, good dispensing practices adhered in selected government and private sector pharmacies for the development of a medication safety practice package in Sri Lanka
Bandara GRWSK, Samaranayake N, Galappaththy P

PP 6 - Prevalence and associations of polypharmacy among Sri Lankans; A hospital-based study
Fernando KRK, Peiris HHI, Arangala DMP, Mettananda KCD

PP 7 - Antibiotic use and resistance: awareness among patients in Ragama
Dharmawijaya PKD, Dhananjanie HAD, Dharmasena KLJT, de Silva MIL, de Silva ATS

PP 8 - Development and validation of indicators for medication safety during regulation, procurement, storage and distribution processes of medicines in Sri Lanka
Weliwatte IP, Samaranayake NR, Jayewardene P, Galappatthy P

Abstracts of Free Papers

PP 1

EVALUATION OF AYURVEDIC AND HERBAL PRODUCT ADVERTISEMENTS ON ELECTRONIC AND PRINT MEDIA IN SRI LANKA

Fathima R[1], Liyanage CK[2], Ranasinghe C[3], Ranasinghe P[2]

[1] Department of Pharmacy, Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka

[2] Department of Pharmacology, Faculty of Medicine, University of Colombo, Sri Lanka

[3] Department of Ayurveda, Western Province, Sri Lanka

Introduction and Objectives

A significant proportion of the population are increasingly utilizing ayurvedic/herbal products for their healthcare. Presently, there are minimal regulations enforced on advertisement of ayurvedic/herbal products for health indications in Sri Lanka. We assessed the content and frequency of ayurvedic/herbal product advertisements in electronic and print media in Sri Lanka.

Methods

Advertisements on ayurvedic/herbal products which did not contain any known allopathic medicine/substances with a label that claimed to have curative/preventive health benefits/indications were included. Advertisements were assessed based on expert-validated criteria developed by perusal of regulations. Advertisements were selected from 5 national television channels and 3 radio channels denoting two official languages and English, 7 national newspapers and ten websites over 2 months.

Results

285 advertisements were included, with majority being from television (n=165;57.9%), of which 80.6% were from private television channels. Price of product was mentioned in 71.5% of television advertisements (price range LKR 25-6,999). All newspaper and radio advertisements mentioned indication. Most common therapeutic claims were “immediate pain relief”, “fast, safe and effective relief” and “no side-effects”, while common non-therapeutic claims were “100% Natural”, “sugar-free” and “100% vegetarian”. Only 8.1% mentioned ayurvedic registration number of the product. Contact details of manufacturer were included in only 53.3% (n=152) of advertisements.

Conclusion

Contents of advertisements varied between and within different media, with a significant proportion not including key information. Most advertisements included unsubstantiated therapeutics and non-therapeutic claims. There is a necessity to implement and enforce stringent guidelines to ensure the health and safety of the population.

PP 2

KNOWLEDGE ON IDENTIFICATION, IMMEDIATE MANAGEMENT AND PREVENTION OF ALLERGIC REACTIONS AMONG BEAUTICIANS IN GAMPAHA DISTRICT

Nayanananda DGTP[1], Nirosha WPR[1], Nishakara SNS[1], Nishshanka NMDNK[1], Nishshanka NMPS[1], Mettananda KCD[1]

[1]Faculty of Medicine, University of Kelaniya

Introduction & Objectives

Data on knowledge on allergic reactions of beauticians of Sri Lanka is scarce. Therefore, we aimed to describe knowledge on identification, immediate management, and prevention, of allergic reactions of beauticians of Sri Lanka.

Methods

A descriptive study was conducted among 400 randomly selected beauticians of Gampaha district from July 2019 to February 2020. Data were collected using a self-administered questionnaire.

Results

400 beauticians, 344(86%) female, mean age 30 ± 7.3years were studied. 392(98%) has had some training in the profession but only 255(63.8%) had teaching on allergic reactions.

Almost all, 399(99.8%) knew the word ''allergy'' and 387(96.8%) appreciated allergies could occur with cosmetics. The common signs/symptoms of allergies identified were; redness 83.5%, itching 81.3% and rashes 81.0%, swelling 49.3%, and difficulty in breathing 42.8%. 264(66%) knew allergies could cause death.

92(23.0%) had experienced allergies in practice. At those situations, 75.3% stopped using the culprit product, 37.5% gave an antihistamine and 87.8% directed clients for medical care.

As preventive measures, 392(98%) inquired about past history of allergy and 340(85%) performed patch tests before procedures. 250(62.5%) were aware of using antihistamines but none were aware of adrenaline pens. 77.3% had contact details of an ambulance at hand for emergency.

Conclusion

The knowledge on skin related symptoms and signs of allergies were good but that of systemic symptoms were poor among beauticians in Gampaha district. Nearly 1/3 of training courses did not teach about allergic reactions and therefore, awareness could be increase by incorporating this in their training courses.

PP 3

USAGE OF ANTIBIOTICS IN SURGICAL UNITS – ONE MONTH CLINICAL AUDIT

Ekanayaka SPN[1], Indrarathne HRU[1], Dissanayake DMRS[1], Gunawardana WMMAS[1], Siriwardana RC[1]

[1]Faculty of Medicine, University of Kelaniya, Sri Lanka.

Introduction and objectives

Antibiotic resistance is an emerging global healthcare problem. Excessive and inappropriate use of antibiotics is known to accelerate the process of antibiotic resistance.

Understanding the pattern of antibiotic usage is the key to modifying the existing practice. This audit was conducted at Colombo North Teaching Hospital (CNTH) Sri Lanka to identify the most commonly used antibiotics in surgical wards for one month (March 2021). Hence to plan an intervention to identify the defects in current practice and to promote rational prescription of antibiotics for the most commonly used.

Method

A retrospective cross-sectional audit was carried out on antibiotic usage. Data were collected by reviewing antibiotic distribution records at the central pharmacy CNTH. All records on drugs issued to the theatre and surgical wards were revived. Antibiotics were categorized according to generic and the route. The total doses of antibiotics and types of antibiotics used in all the wards and theatres were calculated. The frequency and percentage were calculated using Microsoft Excel version 2010.

Results

The central pharmacy had distributed 26 different types of antibiotics during the period of the audit. The 10 most commonly used antibiotics were IV Co-amoxiclav (1.2g) 23.14%, IV Ceftriaxone (1g) 16.14%, IV Metronidazole (500mg) 12.01%, O. Clindamycin (300mg) 11.04%, IV Meropenem (500mg, 1g) 9.2%, IV Cefuroxime (750mg) 5.6%, IV Cefotaxime (1g) 4%, IV Benzyl penicillin (600 mg) 2.9%, O. Ciprofloxacin (500mg) 2%, O. Ampicillin (250mg) 1.99%.

The top 6 antibiotics used in surgical wards were IV Co-amoxiclav (1.2g) 34.77%, O. Clindamycin (300mg) 19.47%, IV Metronidazole (500mg) 14.24%, IV Meropenem (500mg,1g) 7.73%, IV Ceftriaxone (1g) 7.60%, IV Cefuroxime (750mg) 5.7%.

Conclusion

The most commonly used antibiotics in the CNTH and the surgical units were IV Co-amoxiclav followed by IV Ceftriaxone, IV Metronidazole, O. Clindamycin, IV Meropenem, and IV. Cefuroxime.

PP 4

ADVERSE DRUG REACTIONS REPORTED AMONG INWARD PATIENTS OF TEACHING HOSPITAL KARAPITIYA

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Introduction and objectives

Adverse drug reactions (ADRs) are known to increase the burden on health care system. ADRs are one of the major cause of morbidity and mortality worldwide. The nature and causes of ADRs are usually complex and multifactorial.
The aim of this study was to describe the frequency, causality and severity of ADRs reported among inward patients of Teaching Hospital Karapitiya (THK).

Method

An active surveillance was carried out in selected wards at THK to collect ADRs over 28 months from March 2019. Reported ADRs were categorized according to the severity by using Modified Hartwig and Siegel scale and the results were analyzed to describe the causality and frequency.

Results

A total of 163 ADRs were reported with female predominance (55.8%). Median (IQR) age of the patients was 44 (16 to 65) years. Of total ADRs, majority were due to antibiotics (53.4%) and blood products (11.4%). Among the antibiotics, ciprofloxacin (24.1%) was the prominent causative agent for ADRs followed by co-amoxiclav (21.8%) and ceftriaxone (12.6%).
Out of ADRs collected 50 (30.7%), 81 (49.7%), 31 (19.0%), 1(0.6%) were categorized as mild, moderate, severe and fatal reactions respectively. Among the severe ADRs, 9 (29.0%) were anaphylaxis reactions. Most of them were associated with antibiotics (77.8%). Three patients (33.3%) had previous allergies. The fatal reaction was due to O positive leuko-reduced blood.

Conclusions

Antibiotics are the most common causative agent for ADRs.Further, they are more frequently associated with anaphylaxis reactions than other drugs.

PP 5

GOOD PHARMACY PRACTICES AND GOOD DISPENSING PRACTICES ADHERED IN SELECTED GOVERNMENT AND PRIVATE SECTOR PHARMACIES IN SRI LANKA

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Introduction and Objectives
This project assessed Good Pharmacy Practices (GPP) and Good Dispensing Practices (GDP) relevant to safe dispensing, adhered in National Hospital of Sri Lanka (NHSL), Colombo South Teaching Hospital (CSTH) and private pharmacies (PP) around NHSL and CSTH.

Methods
All indoor and OPD pharmacies in NHSL, CSTH and 40 PPs around them were studied using GPP and GDP selected from WHO and NMRA guidelines relevant to medication safety. Practices in government pharmacies (GPs) and PPs were compared using Chi square test. Significance level was set at $p<0.05$.

Results
There were 26 GPs in NHSL (n=15) and CSTH (n=11). No GP or PP had a High Alert Medicines (HAM) list or Look Alike Sound Alike (LASA) medicines list or clear labelling to identify them. HAM were stored separately, (GP 15.4% vs. PP 2.5%; p=0.053), LASA medicines were stored separately (GP 11.5% vs. 0% PP; p=0.028). Significant differences were found in availability of thermometers in refrigerators (GP 30.8 % vs. PP 100%; p<0.001), pharmacists using un-gloved hands for counting pills (GP 73.1% vs. PP 32.5%; p<0.001), storing IV and oral drugs separately (GP 100% vs. PP 85%; p<0.001), medicines taken out of original packaging (GP 11.5% vs. PP 100%; p<0.001), and counter checked by second pharmacist when in doubt (GP 100% vs. PP 55%; p<0.001). Only 12.5% referred BNF in PPs, but most used smart phones for reference in both settings. In PPs, 90% issued prescription only medicines without prescriptions.

Conclusions
Adherence to GPP and GDP needs improvement in both settings for safe dispensing.

PP 6

Prevalence and associations of polypharmacy among Sri Lankans; a hospital-based study

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Introduction and Objectives

Polypharmacy is a global health problem. However, the prevalence of polypharmacy in Sri Lanka is not known. Therefore, we studied the prevalence and associations of polypharmacy in in a tertiary care hospital in Sri Lanka.

Method

We conducted a cross-sectional study of all medical clinics of Colombo North Teaching Hospital from 15 August 2020 to 15 February 2021. 50 patients from each clinic were randomly selected. Data were collected using an interviewer-administered questionnaire. Polypharmacy was defined as being on five or more medications regularly during the one month before enrolment. Data were analyzed using SPSS Version 22**.**

Results

A total of 504 patients; 215(42.7%) males, mean age of 59.7+14.3 years were enrolled from 4 general-medical and 8 speciality clinics. The prevalence of polypharmacy was 69.8%. 159(46%) were on complementary medicines. Prevalence was not different between general-medical (71.3%) and speciality clinics (69.2%), p=0.67. Prevalence of polypharmacy in patients of 60 years or older was 77.3% and was significantly different to patients younger than 60 years; 58.4%, p<0.0001.

Polypharmacy was associated with diabetes (OR 3.3, p<0.0001), hypertension (OR 2,5, p<0.001), chronic kidney disease (OR 3.9, p<0.0001) and ischaemic heart disease (OR 3.3, p<0.002) but was not associated with gender (OR 1.1, p=0.776), dyslipidaemia (OR 1.2, p=0.407) or stroke (OR 1.2, p<0.521).

Of the patients on polypharmacy(n=352),168(47.7%) had no complains but others were worried about possible damage to kidney and liver (46(13.1%)), high cost (21(6.0%)), intolerable side effects (22(6.3%)), the nuisance taking several tablets daily (16(4.5%). 72((20.5%) had more than one worry.

Conclusion

Polypharmacy is a common problem in this hospital-based urban/ semi-urban cohort of Sri Lankans and is more with old age, diabetes mellitus, hypertension, kidney disease and ischemic heart disease**.**

PP 7

ANTIBIOTIC USE AND RESISTANCE: AWARENESS AMONG PATIENTS IN RAGAMA

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Background

Antibiotic misuse is a major contributor to the emergence of antibiotic-resistant bacteria. Inadequate information on antibiotic use and resistance could play a big role in this. Therefore, we studied patient awareness of antibiotic use and resistance in Colombo North Teaching Hospital, Ragama.

Methods

From November 18 to November 30, 2019, we recruited 384 patients (aged 18 to 54) who were queuing at the outpatient department pharmacy of Colombo North Teaching Hospital, for this descriptive cross-sectional study. Interviewer-administered questionnaires were used to collect data.

Results

Only 42 out of 384 (10.9%) patients were familiar with the terms antibiotic and antibiotic resistance. 23 (5.9%) patients correctly identified the causes of antibiotic resistance. Impacts of antibiotic resistance were correctly identified by 29 (7.5%) patients. 133 patients (35%) claimed they finished the prescribed antibiotic course. Doctors or pharmacists told 341 (88.6%) patients verbally about the dose and duration of recommended antibiotics. Patients with higher education were more aware than those with lower levels of education. In comparison to older patients, younger patients (ages 18 to 28) were more knowledgeable about antibiotics and antibiotic resistance.

Conclusion

The majority of patients in this group lack adequate knowledge about antibiotic use and resistance. Patients' awareness rose with their educational level and fell with age.

PP 8

DEVELOPMENT OF INDICATORS FOR MEDICATION SAFETY DURING REGULATION, PROCUREMENT, STORAGE AND DISTRIBUTION PROCESSES OF MEDICINES IN SRI LANKA

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Background
Healthcare system of a country is responsible for supplying safe and efficacious medicines to the public. Our objective was to develop a set of evidence based indicators for medication safety during regulation, procurement, storage and distribution of medicines in Sri Lanka.

Methods
The RAND/UCLA (Research ANd Development/University of California Los Angeles) appropriateness method was used with a panel of fifteen experts related to the regulation and supply of pharmaceuticals. From a systematic review and three brainstorming sessions, 49 indicators were developed with numerators and denominators defined. During two rating rounds, each indicator was rated on six parameters; appropriateness, relevance, measurability and feasibility, clarity, usefulness, and comparability. If all the parameters were rated with a panel median of ≥7 without disagreement, those indicators were accepted. Overall consensus of the panel was obtained at a Delphi meeting.

Results
The panel rated 41 indicators as necessary for assessing medication safety (20 for regulation, 6 for procurement, and 15 for storage and distribution). Of them, 30 were categorized as core and 11 as supplementary indicators. Among the selected indicators, 10 covered structure or organizational issues, 20 addressed the processes, and 11 focused on outcomes.

Conclusion
The study identified a set of 41 indicators to assess safe medication use in regulation, procurement, storage and distribution of medicines in Sri Lanka. Developed safety indicators could be used to determine the status of medication safety and the impact of interventions to improve safety outcomes of medicines with the implementation of the National Action Plan for Medication Safety in Sri Lanka.

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Acknowledgements

The President and the council wish to express their sincere gratitude and appreciation to all the following personnel for the immense support provided in making ClinPharm 22 event a success.

- Professor Nilanthi de Silva, Vice-Chancellor, University of Kelaniya for gracing this occasion as the Chief Guest
- Professor Reecha Sofat, Vice President, British Pharmacology Society (BPS) for joining us at the inauguration ceremony on behalf of the BPS
- Professor J K Aronson, Consultant Physician and Clinical Pharmacologist, Centre for evidence-based Medicine, Oxford for delivering the SLACPT oration
- All our speakers for their valuable time and sharing expertise with us
- The academic committee, organizing committee and the council for the support and encouragement given throughout
- Prof Srinath Chandrasekera, Past President of the Sri Lanka College of Surgeons, Dr Satish Goonesinghe, the incumbent president of the Sri Lanka College of Surgeons and the Council of the College for supporting this conference in numerous ways
- Ms Kiruthika Thanushanthan for designing our conference artwork
- Ms Sanduni Kumari, Mr Rohana Pushpakumara, Dr Kesara Perera and Ms Eshani Ranasinghe from the Department of Pharmacology, the University of Kelaniya, for their dedication and commitment to making this event a success
- Ms Maheeka Solangarachchi for maintaining our conference website
- Mr Saty Watson and his team for event organization
- Dr Kalani Kulathilake for compering
- Our sponsors for their generous support; Creative Solutions, 99X technology, V S Information Systems (Pvt) Ltd, and the managements of Kings Hospital, Colombo 5 and Leesons Hospital, Ragama