

2nd INTERNATIONAL CONGRESS ON

**ADVANCED
CARDIOLOGY &
CARDIOVASCULAR
RESEARCH**

MARCH 20-21, 2023

LONDON, UK



ADV. CARDIOLOGY 2023

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PROGRAM-AT-A-GLANCE

**ADV. CARDIOLOGY
2023**

DAY 1

MARCH 20, 2023

Scientific Program

Hall- Westminster

08:15-08:45 Registrations

08:45-09:00 Opening Ceremony

Keynote Forum

09:00-09:30

Title: Recommendation on an updated standardization of serum magnesium reference range
Oliver Micke, *Franziskus Hospital, Germany*

09:30-10:00

Title: Focused echocardiography in the perioperative period
Anahita Dabo-Trubelja, *Memorial Sloan Kettering Cancer Center, USA*

10:00-10:30

Title: Covered-stent treatment of an extracranial internal carotid artery pseudoaneurysm in a 3 years-old child with 12-years follow-up; Case report
Roberto Sánchez, *University of Concepción, Chile*

Refreshment Break 10:30-10:45

Distinguished Speaker Talks

Chair

Barbara Maat, *Elisabeth-TweeSteden Hospital, The Netherlands*

Chair

Roberto Sánchez, *University of Concepción, Chile*

10:45-11:10

Title: Prolonged oxycodone use and potential risk factors in postoperative patients: A case control study
Barbara Maat, *Elisabeth-TweeSteden Hospital, The Netherlands*

11:10-11:35

Title: Treating my real avatar in the wepital
Nitin Walia, *W.P. Carey School of Business, Arizona State University, USA*

11:35-12:00

Title: Older people living with HIV and antiretroviral therapy: The prevalence of dysglycemia and risk factors
Isaura Romero Peixoto, *Federal University of Pernambuco, Brazil*

12:00-12:25

Title: Over-prescription of the Imidazoline Receptor Agonists: Evidence for restriction of the therapeutic indication

Rimas Jankūnas, *Lithuanian University of Health Sciences, Lithuania*

12:25-12:50

Title: Gadolinium contrast-based agents: Use in real-life conditions after negative allergy work-up by skin testing

Audrey Kamga, *University Hospital of Bretagne Occidentale, France*

12:50-13:15

Title: Using silver nanoparticles in biomedical applications based on the particle stabilization

Mert Saraçoğlu, *Istanbul Technical University, Turkey*

Group Photo

Lunch Break 13:15-14:00

Distinguished Speaker Talks

14:00-14:25

Title: Towards sustainable open heart surgery in Zimbabwe

Simukayi Percy Machawira, *Parirenyatwa Group of Hospitals, Zimbabwe*

14:25-14:50

Title: Group B Streptococcus: Virulence factors and pathogenic mechanism

Yuxin Liu, *Queen Mary University of London, UK*

14:50-15:15

Title: The dynamics of language: A linguistic analysis of the framing of COVID-19 in Eswatini

Phindile Dlamini, *University of Eswatini, Eswatini*

15:15-15:40

Title: Multiple imputation under intermittent missingness

Rolando Uranga, *National Center for Clinical Trials, Cuba*

15:40-16:05

Title: Wireless technology is an environmental stressor requiring new understanding and approaches in cardiology

Erica Mallery Blythe, *Physicians' Health Initiative for Radiation and Environment (PHIRE), UK*

16:05-16:30

Title: Efficient human pluripotent stem cell derivation of left ventricle-like cardiomyocytes with matured properties: Can we use them to treat heart failure?

Andreia S Bernardo, *The Francis Crick Institute, UK*

Refreshment Break 16:30-16:45

Distinguished Speaker Talks

16:45-17:10

Title: Study on feasibility of the partial meniscal allograft transplantation
Jia-Kuo Yu, *Peking University Third Hospital, China*

17:10-17:35

Title: Vascular photobiomodulation as therapy in the treatment of children and adolescent with temporomandibular disorders - Study protocol for a randomized, controlled, blind, clinical trial
Ferreira Sertaje María Roxana, *Catholic University of Uruguay, Uruguay*

17:35-18:00

Title: Efficacy and safety of Kleeb Bua Daeng formula in mild cognitive impairment patients: A phase I randomized, double-blind, placebo-controlled trial
Natdanai Musigavong, *Chao Phya Abhaibhubejhr Hospital, Thailand*

18:00-18:25

Title: The usefulness of a three protein signature blood assay (Mastocheck®) for follow up after breast cancer surgery
Yumi Kim, *CHA University School of Medicine, Republic of Korea*

18:25-18:40

Title: Synthesis of azo-guanidine based molecules and their DNA interaction in alcoholic medium
Uzma Hashmat, *GC University, Faislabad, Pakistan*

Poster Presentations

Title: Hybrid learning in nursing programs: A scoping review
Song Claire, *Douglas College, Canada*

Title: Distribution of human papillomavirus genotypes in suspected women cytological specimens from Tehran, Iran
Mahshid Panahi, *Iran University of Medical Sciences, Iran*

End of Day 1



DAY 2

MARCH 21, 2023

Scientific Program

Hall- Westminster

Distinguished Speaker Talks

10:00-10:25

Title: Soluble immune checkpoint-related proteins as predictors of tumor recurrence, survival and T cell phenotypes in clear cell renal cell carcinoma patients

Wu Xifeng, Zhejiang University School of Medicine, China

10:25-10:50

Title: mHealth platform improved health workers compliance to WHO's IMNCI guideline in Nairobi, Kenya

Elsie Nzale Sang, Save the Children International, Kenya

Refreshment Break 10:50-11:05

11:05-11:30

Title: FIGNL1 is a potential biomarker of cisplatin resistance in non-small cell lung cancer

Chenxu Meng, Anhui Medical University, China

11:30-11:55

Title: Mechanistic insights on the possible protective role of polyphenols extracted from Tamarixaphylla aerial parts against sodium arsenite-induced hepatotoxicity in rats

Shaher Bano, The University of Lahore, Pakistan

Lunch Break 11:55-12:40

End of Day 2

Closing Remarks



DAY 2

MARCH 21, 2023

Scientific
P r o g r a m

Virtual Program

**Virtual Presentations
Conducted through
CISCO Webex**

**Adv. Cardiology 2023:
Starts from 09:00 AM GMT**



KEYNOTE PRESENTATIONS

DAY 1

**2nd International
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ADV. CARDIOLOGY 2023



BIOGRAPHY

O. Micke is head of the department of radiotherapy and radiation oncology, and clinical director of the Franziskus Hospital Bielefeld, Germany, teaching hospital of the Hannover Medical School (MHH).

He is the associate editor of "Trace Elements and Electrolytes"- Official Organ of the - "Society of Magnesium Research", Germany, and - German Working Group "Trace Elements and Electrolytes in Radiation Oncology" AKTE, Germany. He is president of the German Magnesium Society and

chairman of the German Working Group "Trace Elements and Electrolytes in Radiation Oncology" AKTE.

One main focus of his scientific interest is complementary and alternative medicine, micronutrients, traditional medicine, and trace elements and electrolytes.

He authored more than 250 publications in peer reviewed national and international scientific journals and has been invited as speaker at national and international meetings.

O. Micke

Franziskus Hospital, Germany

Recommendation on an updated standardization of serum magnesium reference range

Serum magnesium is the most frequently used laboratory test for evaluating clinical magnesium status. Hypomagnesemia has been associated with many chronic diseases, but currently no consensus for a normal magnesemia range exists, nationally or internationally. In addition, reports as early as 1983 showed that means of serum Mg are similar in both hospitalized and healthy subjects, but the variance of those hospitalized is wider than the healthy group.

A low serum magnesium is a definite sign of magnesium deficiency; however, values within the reference range do not rule out deficiencies.

A recent review and many hospital laboratories and researchers use symptomatic hypomagnesemia to define the lower range marking hypomagnesemia, but there is a large range of serum Mg above these values which are asymptomatic and yet do not denote a fully

"healthy" magnesium status. Two independent groups have recently designated 0.85 – 0.95 mmol/L as a reliable serum Mg reference range, but only the lower boundary marker, i.e. 0.85 mmol/L is evidence based.

A reliable, evidence-based upper limit of a health serum Mg has yet to be ascertained, and it is possible that serum Mg alone may not be adequate to designate a compromised magnesium status that is asymptomatic yet portending future development of chronic disease.

According to the current data, an increase in the lower limit value for serum magnesium to 0.85 mmol/L (2.1 mg/dL) is required from a health point of view.

The best way to diagnose a magnesium deficiency is based on the clinical symptoms and the presence of risk factors (anamnesis) in combination with the serum magnesium.



BIOGRAPHY

Anahita Dabo-Trubelja is Clinical Member in the Department of Anaesthesiology and Critical Care at Memorial Sloan Kettering Cancer Center in NYC. She serves as Director of Onco-Anesthesia Fellowship Program and Director of

POCUS, a program she initiated. Her interest focuses on promoting Onco-Anesthesiology as a subspecialty and integrating POCUS into daily practice to guide management in the perioperative period.

Anahita Dabo-Trubelja

Memorial Sloan Kettering Cancer Center, USA

Focused echocardiography in the perioperative period

POCUS is a critical diagnostic tool in the acute care setting, allowing clinicians to rapidly assess cardiac function in the context of the patient's clinical condition. POCUS performed by anaesthesiologists significantly impact the clinical management of patients scheduled for noncardiac surgery. Clinical findings were confirmed by follow-up formal transthoracic >90% of the time and no severe aortic stenosis, severe ventricular dysfunction, or significant pericardial effusion were missed.

In the perioperative period, POCUS allows

for the anaesthesiologist as a perioperative physician to check for coexisting diagnosis, categorize shock, respiratory failure, and ongoing effects of therapeutic treatments. Real-time physiologic data reflect dynamic changes in response to medical therapies and follow the evolution of critical illness by serial examinations, allowing for the integration of POCUS findings into a complete management plan. This brief report aims to identify the indications, clinical impact on management decisions, and perioperative focused cardiac ultrasound accuracy in patients scheduled for non-cardiac surgery.



BIOGRAPHY

- Prof. Roberto Sánchez, MD
Professor of Surgery
- Faculty of Medicine- University of Concepción- CHILE Fellow of the American College of Surgeons
- Ancien Resident Etranger des Hopitaux de Paris
- Membre Associee Etranger Société de Chirurgie Vasculaire et Endovasculaire de Langue Francaise (SCVE).
- Non-european Membership European Society of Vascular and Endovascular Surgery (ESVS).

Roberto Sánchez

University of Concepción, Chile

Covered-stent treatment of an extracranial internal carotid artery pseudoaneurysm in a 3 years-old child with 12-years follow-up; Case report

Introduction: Extracranial internal carotid artery (ICA) pseudoaneurysms in children, although uncommon, are life-threatening. Covered stents are a good alternative treatment, as they avoid the risk of open surgery and preserve the internal carotid artery. Long-term outcomes were unknown until recently.

Report: In August 2008, a 3-years-old child was treated with a covered stent for a pseudoaneurysm in the extracranial ICA. A long-term follow up is presented.

Results: The child was discharged with full

recovery and without neurological sequelae. He has been followed-up and has remained asymptomatic for 12 years, with CTA-confirmed internal carotid artery patency, without deformation or evidence of significant re-stenosis.

Conclusion: This the first report of the long-term outcome of a covered stent in a child treated at 3 years of age, with a 12-year follow-up. The good performance of the covered stent in this case reinforces its adoption as a first-line option in the treatment of extracranial ICA pseudoaneurysms in children.



***SCIENTIFIC
ABSTRACTS***

DAY 1

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Prolonged oxycodone use and potential risk factors in postoperative patients: A case control study

**B. Maat², O. Aalouch¹, M. Duisenberg-van Essenber²,
F. van Eijs³, A.B. Spoor³ and P.M.L.A. van den Bemt⁴**

¹*Utrecht University, The Netherlands*

²*Elisabeth-TweeSteden Hospital, The Netherlands*

³*Elisabeth-TweeSteden Hospital, The Netherlands*

⁴*University Medical Center Groningen, The Netherlands*

Background: Prolonged exposure to opioids has a negative influence on physical and mental health. Currently, little is known about the risk of prolonging opioids after first postoperative use.

Aim: A study was conducted to define the proportion of postoperative patients that use oxycodone longer than prescribed to determine risk factors of prolonged use.

Method: This retrospective single-center nested case-control study was performed in the Elisabeth Tweesteden Hospital, Tilburg, The Netherlands. The study population consisted of postoperative adult patients who received an oxycodone prescription at discharge between April 2018 and June 2020. The primary outcome was the proportion of patients with at least one refill of oxycodone during a follow-up period of 30 days. The secondary outcome was the association of potential risk factors with oxycodone refills.

Univariate and multivariate logistic regression analyses were performed to determine the association between the variables and outcome.

Results: 1,203 patients were included of which 280 (23.3%) received one or more refill. Age (adjusted odds ratio 1.01 [95% confidence interval 1.00–1.02]), length of stay (1.10 [1.06–1.14]), a Numeric Rating Scale pain score of four or higher (1.52 [1.14–2.01]), use of the continuous release form of only (2.15 [1.60–2.89]) and admission to various hospital departments were associated with a refill of oxycodone.

Conclusion: The proportion of patients with a refill of oxycodone was 23.3%. This could result in chronic oxycodone use and potential misuse. Patients with the determined risk factors may be a suitable population for future interventions to minimize prolonged use.

Biography

Dr. Barbara Maat is clinical pharmacist at the Elisabeth TweeSteden hospital in Tilburg, The Netherlands. She completed her PhD in 2014 (Optimization of electronic prescribing in pediatric patients). Her main fields of interest in clinical practice are pharmacotherapy for surgical patients and pediatric pharmacotherapy. Her scientific work focuses on medication management, medication safety, electronic clinical decision support and technological innovations. Most of her studies have a pharmacoepidemiologic design, but she increasingly uses qualitative research methods in addition.



Treating my real avatar in the wepital

Nitin Walia

W.P. Carey School of Business, Arizona State University, USA

Background: An indirect outcome of the Covid-19 pandemic has been higher adoption and acceptance of telemedicine and virtual visits, but such visits are short-timed, lacking in data persistence and continuity in the care of patients. Our published work (Zahedi et al. 2022) proposed designing a medical system (called wepital) with virtual avatars for patients and connecting them with real-time and continued medical care.

Methods: Sixty patients with gastrointestinal problems participated in the experiment using the wepital prototype and wearable sensors. The patients interacted with GI specialists in a group setting, as uniquely enabled by wepital to maintain patient anonymity and privacy.

Results: First, our work showed the proof-of-concept of the feasibility of our design. Second, the research experiment with real patients shows high patient satisfaction with physicians and our prototype design. Furthermore, patients generally had positive feelings and beliefs about their real avatars.

Conclusion: Our work shows that real avatars have the potential to represent people in critical

contexts, such as medical care. Our work also provides a theoretical-based framework for the assessment of patent-based technologies and technology-assisted delivery modes. Our work has practical and policy implications for persistent patient care at home, short-term rehab centers, and hospitals.

Zahedi F.M, Zhao H, Sanvanson P, Walia N, Jain H, Shaker R. My Real Avatar has a Doctor appointment in the Wepital: A System for persistent, efficient, and ubiquitous medical care.

Information & Management. 2022 Dec;59(8):103706.



Figure 1. The Patient Care in the Wepital*

Biography

Nitin Walia is a Clinical Professor of Information Systems in the W. P. Carey School of Business at Arizona State University. He received his Ph.D. degree in Information Systems from the University of Wisconsin-Milwaukee. He also holds M.S. degrees from Oakland University, MI, and Pune University, India. His work has been published in several national and international journals, including the Journal of Management Information Systems, Journal of Information Technology Case and Application Research, Information & Management, Electronic Commerce Research, IEEE Transactions on Software Engineering, IEEE Intelligent Systems Journal, and International Journal of Electronic Business Management.



Older people living with HIV and antiretroviral therapy: The prevalence of dysglycemia and risk factors

Isaura Romero Peixoto¹, Ladjane Santos Wolmer de Melo¹ and Heloisa Ramos Lacerda^{1,2}

¹Federal University of Pernambuco, Brazil

²University of Pernambuco, Brazil

Objective: To assess the prevalence and factors associated with dysglycemia (diabetes and prediabetes) in older people living with HIV infection.

Method: This was a cross-sectional, analytical study with 59 older people living with HIV and using antiretroviral therapy, recruited by convenience sampling in two HIV referral hospitals in Recife (PE), between May/2018 and February/2020. The prevalence and factors associated with dysglycemia were analyzed by Chi-square, Fisher Exact, Kruskal-Wallis and Mann-Whitney tests.

Results: The mean age of the 59 older

people 64.3 years and 66.1% were male. The prevalence of diabetes and prediabetes was 20.3% and 35.6%, respectively, and the significant risk factors were physical activity, coronary disease, risk of cardiovascular disease in ten years, HDL cholesterol levels and glycemia.

Conclusion: A high prevalence of diabetes and prediabetes was observed in older people living with HIV. Interventions aimed at older people with HIV and the risk of diabetes and prediabetes are necessary, especially those with a sedentary life style, with a relevant cardiovascular risk and biochemical changes that participate in metabolic syndrome.



Over-prescription of the Imidazoline receptor agonists: Evidence for restriction of the therapeutic indication

Rimas Jankūnas¹, Diana Rinkūnienė¹ and Donatas Stakišaitis^{1,2}

¹Lithuanian University of Health Sciences, Lithuania

²National Cancer Institute, Lithuania

Background: Major antihypertensive drug classes excluding Imidazoline Receptor Agonists (IRAs) have been demonstrated to reduce cardiovascular morbidity and mortality. In 2017, Latvia and Lithuania had the highest cardiovascular mortality among the Eastern, Central, Northern, and Western Member States of the European Union (EU). Cardiovascular mortality in Estonia is much lower than in Lithuania and Latvia.

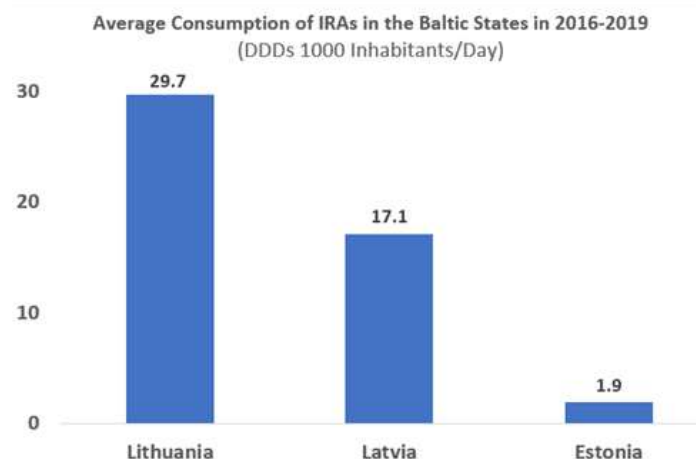
Objective: To evaluate the consumption of Imidazoline Receptor Agonists in the Baltic States and its potential implications.

Materials and Methods: The study included data on the sales of Imidazoline Receptor Agonists in Lithuania, Latvia, and Estonia; the marketing authorization databases of the competent authorities; the guidelines on the treatment of hypertension, and the reimbursement conditions.

Results: The study showed a very high consumption of the Imidazoline Receptor Agonists in Lithuania and Latvia. From 2016 to 2019, the average consumption of Imidazoline Receptor Agonists in Lithuania was 15.5 times higher than in Estonia; in Latvia, it was 8.9

times higher than in Estonia. The guidelines recommend the use of the Imidazoline Receptors Agonists as one of the last options in hypertension therapy, but the marketing authorizations do not restrict their line of therapy.

Conclusions: Consumption of IRAs in Lithuania and Latvia is very high. The authorized use of the IRAs in the EU Member States is not in line with the guidelines on the management of arterial hypertension and therefore patients might be deprived of therapies that reduce the cardiovascular risk. The drug regulatory authorities of the EU should review the data on the safety and efficacy of the IRAs and restrict their therapeutic indications if necessary.



Biography

Rimas Jankūnas is working as an associated professor at Lithuanian University of Health Sciences (started in this university in 1994). He is also Director at Health Law Institute of Lithuania (since 2021).



Gadolinium contrast-based agents: Use in real-life conditions after negative allergy work-up by skin testing

Audrey Kamga¹, Mariana Lobato², Sophie Carra³,
Pascal Demoly^{3,4} and Anca Mirela Chiriac^{3,4}

¹University Hospital of Bretagne Occidentale, France

²CUF Descobertas Hospital, Portugal

³University Hospital of Montpellier, France

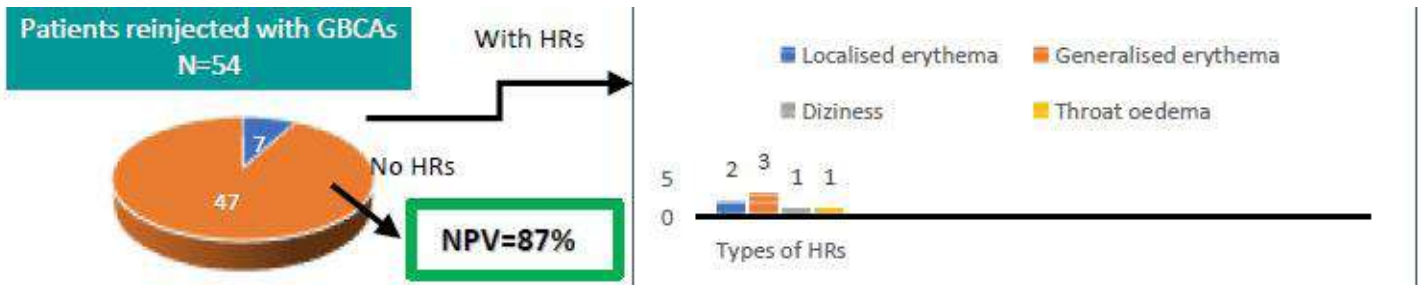
⁴INSERM, France

Introduction: Gadolinium-based contrast (GBCAs) agents are routinely used for improving the clarity of body images obtained by magnetic resonance imaging (MRI). Skin tests (ST) are the main tools to investigate suspicions of GBCA hypersensitivity reactions (HR). The place of drug provocation test (DPT) is not well established. The aim of our study was to study the negative predictive value (NPV) of ST in patients with a past-history of HR to GBCAs, by addressing the occurrence of new HR upon reexposure after the negative allergy workup.

Methods: We performed a retrospective analysis, based on the Drug and Allergy Hypersensitivity Database (DAHD) of the Allergy Unit of the University Hospital of Montpellier. Patients tested by ST with GBCAs from 2012 to 2021 were included. Information about reinjection of GBCAs, was searched on the electronic health record on hospital network and completed by a questionnaire by phone or mail, when it was not found. Patients were asked about their experience with ST and the confidence they had in the allergy work-up.

Results: We identified 165 patients. Among them, there were 134 women (81.2%). Sixty-two patients (37.5%) answered the questionnaire by the time of the analysis (data collection ongoing). 54 patients (32.7% of the whole cohort) having an MRI were reinjected with GBCAs (which could be identified in 76% of situations). In this group, most index reactions (81.4%) were immediate, one third (19 patients, 35.2%) being anaphylactic (with or without shock). Seven patients (12.9%) described a reaction: in 2 and 3 cases the reaction was localized and generalized erythema, respectively, one case reacted with dizziness and another one described throat oedema.

Conclusion: Our results confirm small rates of reactions after reinjection of GBCAs, in patients with negative ST. The NPV in our study was high (87%) and the breakthrough reactions were not severe. The strength of this study is the large sample of patients followed in real-life conditions. It adds up to the scarce knowledge of drug allergy work-up for GBCAs.



Biography

Resident in 4th year of Allergology and Clinical Immunology, in Brittany, France

Referent in Allergology and Clinical Immunology in Brittany, France

Notables' publications:

- Asthma and smoking: A review, RMR (2022-11)
- Occupational asthma induced by exposure to celeriac, JACIP (2022-07).

Congresses:

- WAC (World Allergology Congress) April 2022, Edinburgh, Scotland, United Kingdom: Poster presentation
- CFA (Congrès Francophone d'Allergologie) April 2022, Paris France : Oral presentation
- EAACI (European Academy of Allergy and Clinical Immunology) July 2022, Prague, Czech Republic: Oral presentation
- WAC October 2022, Istanbul, Turkey: Oral presentation



Using silver nanoparticles in biomedical applications based on the particle stabilization

M. Saraçoğlu^{1,2} and S. Timur¹

¹Istanbul Technical University, Turkey

²Nanosilver Inc., Turkey

Synthesis of silver nanoparticles (Ag-NPs) have been extensively studied in the literature due to their broad biocidal ability by forming of silver complexes with various cell parts such as responsible proteins for RNA-DNA replication or cell membrane. Ag-NPs therefore inhibit vital functions of the target cell. Colloidal Ag-NPs have been used in disinfection products for wound healing, animal husbandry, surface and air disinfectant to fight with the variety of infections. Ag-NPs are susceptible to environmental conditions based on the product content such as pH, ion type, concentration, electronegativity and viscosity of the medium where nanoparticles either agglomerate or aggregate. To gain and preserve anti-microbial property of Ag-NPs, stability of particles holds critical importance. Herein, product development strategy based on nanoparticle stability is highly important to achieve the desired abilities of NP. In literature, formulations containing chlorine ion such as chlorhexidine or NaCl produce AgCl bridges

between the particles found to inhibit its anti-bacterial ability due to aggregation. At pH values lower than 5.5, Ag-NPs starts lose their electrostatic OH⁻ barrier which results with agglomeration. However, using oxidants in the synthesis, oxidizes Ag⁰ to Ag⁺ leading to dissolution of Ag-NPs. The behavior of Ag NPs can be observed using UV-visible spectroscopy, dynamic light scattering (DLS), transmission electron microscopy (TEM), zeta-potential measurements while the relation between the biological efficiency of Ag-NPs can be measured with disk diffusion method and minimum inhibitory concentration (MIC) assays. With this product development strategy, synthesizing Ag-NPs with minimum amount of silver, efficient and highly stable could be achieved for sterilization applications. With this development strategy to use Ag-NPs, stable and efficient formulations could be developed using minimum amount of silver for such products.

Biography

Mert Saraçoğlu studied Material and Metallurgy Engineering at the İstanbul Technical University (ITU), Turkey and graduated in 2021. He had been researching on develop stable silver nanoparticles using non-toxic chemicals for medical industry. Currently, he does his MSc degree in the same university, the research group of Prof. Timur. He works in NANOSILVER Inc. as a co-founder responsible of product development and R&D as well.



Towards sustainable open heart surgery in Zimbabwe

**Simukayi Percy Machawira^{1,2}, Wilfred Muteweye³,
Emmerson Mutetwa⁴ and Shield Kajese⁴**

¹*Department of Cardiothoracic Surgery, Parirenyatwa Group of Hospitals, Zimbabwe*

²*Department of Cardiothoracic Surgery, University of Zimbabwe, Zimbabwe*

³*Department of Surgical Sciences, Faculty of Medicine and Health Sciences, University of Zimbabwe, Zimbabwe*

⁴*Department of Anaesthetics and Critical Care Medicine, University of Zimbabwe, Zimbabwe*

Open heart surgery has become more readily available worldwide, especially in the West, whilst it remains elusive for the majority of the people in Sub-Saharan Africa, and Zimbabwe in particular. Efforts to provide the service began in the 1950s and open-heart surgery became a regular service from 1989 to 2003. From 1997, Zimbabwe went through a phase of political and economic turmoil resulting in the disruption of meaningful service. This study seeks to make the case for

prioritization of domestic resources toward open heart surgery, taken as learning from African countries that faced a similar predicament such as Ghana but who have since been able to sustain their programs. To ensure the success of the program, the following are necessary: the requisite personnel, equipment, consumables, and competitive remuneration. The plan is to work with Government, the private sector, and other players to harness resources toward sustainable open heart surgery in Zimbabwe.

Biography

Simukayi Percy Machawira is a Cardiothoracic surgeon heading the Department of Cardiothoracic Surgery at Parirenyatwa Group of Hospitals. He graduated in MBChB in 1997 and MMed Surgery in 1996 at the University of Zimbabwe, School of Medicine. He obtained a Fellowship in Cardiothoracic Surgery in 2014 through the University of the Witwatersrand, South Africa. Simukayi has published several articles in the cardio thoracic and genral surgery. He is currently leading the process of resuscitating open heart surgery at Parirenyatwa Group of Hospitals.



Group B Streptococcus: Virulence factors and pathogenic mechanism

Yuxin Liu^{1,2} and Jinhui Liu¹

¹Nanchang University, China

²Queen Mary University of London, UK

When colonizing the lower genital tract of pregnant women, GBS may cause premature birth and stillbirth. If transmitted to the newborn, it may result in life-threatening illnesses, including sepsis, meningitis, and pneumonia. Moreover, through continuous evolution, GBS can use its original structure and unique factors to greatly improve

its survival rate in the human body. This review discusses the key virulence factors that facilitate GBS invasion and colonization and their action mechanisms. A comprehensive understanding of the role of virulence factors in GBS infection is crucial to develop better treatment options and screen potential candidate molecules for the development of the vaccine.

Biography

Yuxin Liu is a junior in the China-UK Dual Degree Joint Programme (Queen Mary University of London Biomedical Sciences, Nanchang University Clinical Medicine) with a 3.70 GPA in freshman and sophomore years and in the top 3% of the two years. She was twice awarded a special scholarship. She is the Project leader of the Gold Award in the 8th China International College Students "Internet+" Innovation and Entrepreneurship Competition.



The dynamics of language: A linguistic analysis of the framing of COVID-19 in Eswatini

Phindile Dlamini

University of Eswatini, Eswatini

CCOVID-19 has drastically disrupted the lives of many people globally, and the havoc it has wreaked has shattered world economies. The effects of COVID-19 in Eswatini (formerly Swaziland) are threatening the very foundations of the country. Referenced in the national language, its effects manifest in the perceptions and experiences shared among Swazis (emaSwati) about the scourge. This article investigates the pandemic's impact on Swati (siSwati) and the ways in which Swazis adapted their language-related tropes in the face of unprecedented social and economic

disruptions. Data are drawn from government briefings, news bulletins, media interviews and addresses. The findings demonstrate that COVID-19 has produced neologisms and expressions that index Swazis cultural views. While a morpho-syntactic analysis of the neologisms demonstrates that they derive from varied word-building mechanisms and exhibit COVID-19's distinctive characteristics of transmissibility, pathology, and annihilation, the measures to contain COVID-19 are presented aesthetically to dispel the anxiety associated with the pandemic.



Multiple imputation under intermittent missingness

Rolando Uranga¹ and Sira Allende²

¹National Center for Clinical Trials, Cuba

²University of Havana, Cuba

Scope: Missing data is a common problem in general applied studies, and specially in clinical trials. An improper treatment of missing data may have serious implications for the accuracy of inferences of many clinical studies. Then, it is necessary to provide rigorously validated methodological tools that allow tackling this problem. Furthermore, for implementing sensitivity analysis, several multiple imputation methods exist, like sequential imputation, which restricts to monotone missingness, and Bayesian, where the imputation and analysis models differ, entailing overestimation of variance. Also, full conditional specification provides a conditional interpretation of sensitivity parameters, requiring further calibration to get the desired marginal interpretation.

Objectives: The aim of this work is to present a multiple imputation procedure, based on a multivariate linear regression model, which keeps compatibility in sensitivity analysis under intermittent missingness, providing a marginal

interpretation of the elicited parameters.

Methods used: We conduct two simulation studies, one on a standard setting and another in a more demanding setting, which show that the proposed method of multiple imputation behaves well with longitudinal data and remains robust under demanding constraints. Its use is illustrated in a real case study on Cuban vaccines against COVID-19, where a simulation and a sensitivity analysis are conducted.

Conclusion: We conclude the possibility of situations not covered by the existing methods and well suited for our proposal, which allows more efficient handling of a given multivariate linear regression structure. These situations comprise the delta-adjustment setting, an instance of sensitivity analysis; control-based imputation, an approach to sensitivity analysis that imputes missing data in the test drug group using a model built from the control group; as well as other settings.



Wireless technology is an environmental stressor requiring new understanding and approaches in cardiology

Erica Mallery Blythe^{1,2}, Julie Mc Credden²,
Naomi Cook², Steven Weller^{2,3} and Victor Leach²

¹Physicians' Health Initiative for Radiation and Environment (PHIRE), UK

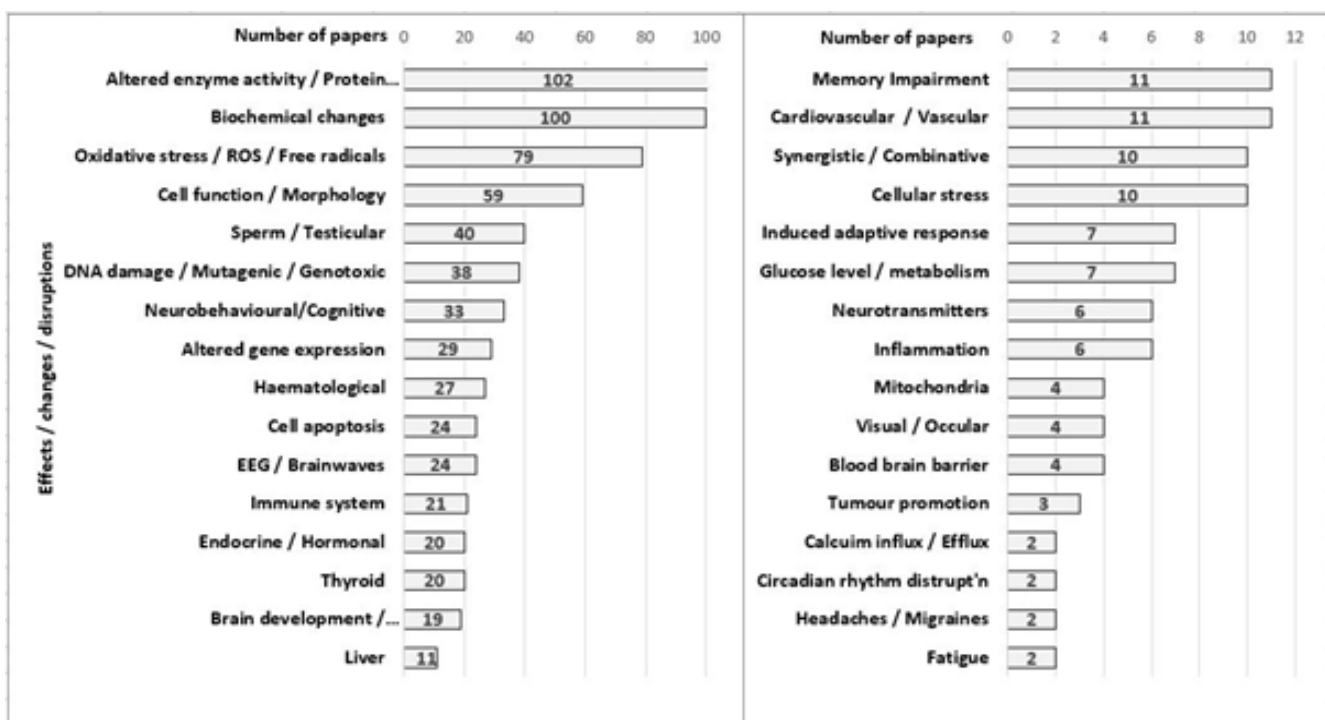
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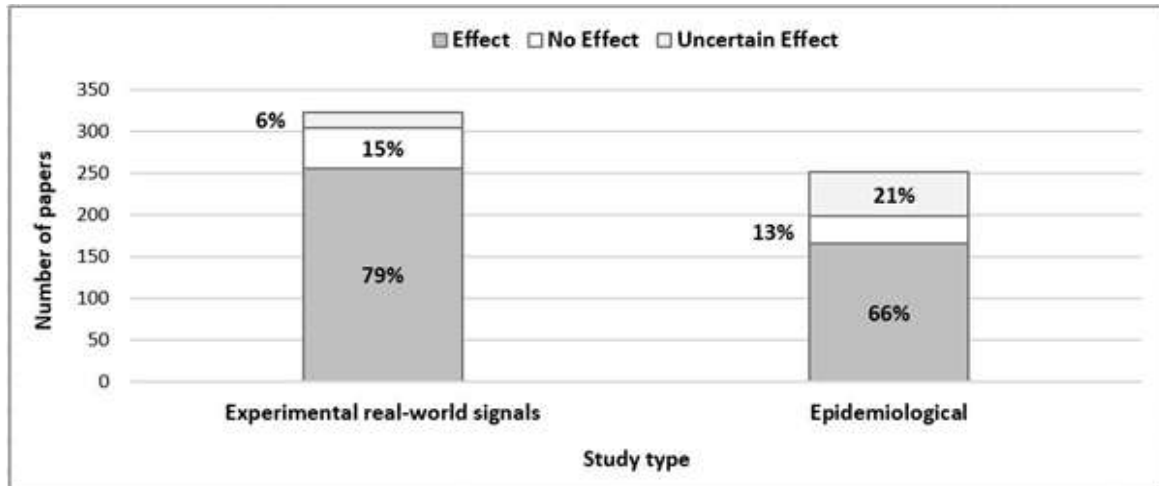
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Electromagnetic emissions from everyday wireless technologies are an ever-present environmental stressor affecting biological systems. One of the most important affected organs is the heart, whose innate electromagnetic processes are interfered with by man-made non-ionising radiation (NIR) emitted from wirelessly communicating devices.

In this paper, we present the weight of evidence for such effects for multiple biological systems, including the cardiovascular system and related biochemistry. This evidence was derived from papers collated within the ORSAA database (ODEB).

Experiments investigating exposures from real-world devices and living near mobile phone base





stations show the effects of radiofrequencies on the heart and cardiovascular system. Studies with rats and humans show changes in heart rate, lipids, blood pressure, and structure and function, as well as increases in the risk of heart tumors and cardiomyopathy in experimental animals.

Significant biological effects of NIR exposures below guideline 'safety limits' were found in 79% (n=256) of the experimental papers and 66% (n=166) of the epidemiological papers from ODEB that investigated real world exposures. In particular, one of the major biological factors underlying heartdisease, oxidative stress, had over 100 papers showing effects (>90% of publications on this topic). The SWISS research group BERENIS found significant evidence of increased oxidative

stress from NIR, even in the low-dose range.

This understanding has not yet reached most cardiologists, as it is not yet included in institutional training.

This paper will assist with understanding by describing plausible mechanisms underlying oxidative stress. Also presented are the classical clinical presentations for patients who are acutely sensitive to NIR exposures and a set of best practice guidelines for treating patients affected by electromagnetic exposures and generally for using technology more safely in coronary care settings. Mitigating this biological stressor could positively affect bed stays prognosis and, perhaps most importantly, preventative care.

Biography

Dr. Erica Mallery-Blythe, is a UK-trained medical doctor with a decade of experience in hospital medicine of various disciplines within multiple countries. Emergency Trauma Medicine is her area of expertise in hospital. In training for this speciality, she has a broad base of medical experience which includes surgery, anaesthesiology, obstetrics, pediatrics and intensive care (both neonatal and adult).

In 2008, she began researching the biological effects of non-ionising radiation with a special interest in Electromagnetic Hypersensitivity (EHS). She is currently the Founding Director of the Physicians' Health Initiative for Radiation and Environment (PHIRE), Special Expert and European Representative at the International Committee on the Biological Effects of Electromagnetic Fields (ICBE-EMF), Medical Advisor for Oceania Radiofrequency Scientific Advisory Association (ORSAA), Honorary Member of British Society for Ecological Medicine (BSEM), Medical Advisor for Electro sensitivity UK (ES-UK), Medical Advisor at International Guidelines on Non-Ionising Radiation (IGNIR).



Efficient human pluripotent stem cell derivation of left ventricle-like cardiomyocytes with matured properties: Can we use them to treat heart failure?

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Decreased left ventricle (LV) function caused by genetic mutations or injury often leads to debilitating and fatal cardiovascular disease. LV-cardiomyocytes are, therefore, a potentially valuable therapeutical target. Human pluripotent stem cell derived cardiomyocytes (hPSC-CMs) generated using current protocols are neither homogenous nor mature, which reduces their utility.

Here we exploited cardiac development knowledge to devise a LV-cardiomyocyte differentiation protocol from hPSCs. Correct mesoderm patterning and retinoic acid pathway blocking were essential to generate near-homogenous hPSC-LV-CMs. As expected, hPSC-LV-CMs transit via first heart field progenitors and display typical ventricular action potentials. Unexpectedly, hPSC-LV-CMs exhibit increased metabolism, reduced proliferation and improved cytoarchitecture and functional maturity compared to age-matched cardiomyocytes generated using the standard WNT-ON/WNT-OFF protocol. Of note was the calcium response to sarcoplasmic reticulum specific inhibitors (ryanodine and thapsigargin), which showed that hPSC-LV-CMs have more appropriate drug-responses.

This increase in maturity is also observed in engineered heart tissues (EHTs) made from hPSC-LV-CMs, which are better organised, produce higher force and have a slower beating rate but can be paced to physiological levels. This demonstrates the mechanical load induced maturity exerted by the EHTs was additive rather than transformative.

Together, we show that hPSC-LV-CMs with mature properties can be rapidly obtained (in 20 days), even without exposure to reported maturation regimes. These cells are, therefore, a suitable model to study LV development and disease and will likely enable more faithful LV-specific cardiotoxicity screens. Moreover, this work opens the possibility of like-for-like cell replacement therapy becoming an accessible treatment for heart failure patients.

British Heart Foundation (BHF-FS/12/37/29516; RM/17/1/33377), Wellcome Trust (210987/Z/18/Z), Medical Research Council (MR/R017050/01; MR/X50287X/1), LifeArc (LifeArc-Crick Translation Fund) and Francis Crick Institute (FC001157).

Biography

Andreia was awarded her PhD from University of Aberdeen and in her PhD used stem cells to study pancreas development. She then moved to the University of Cambridge for a Post Doc with Professor Roger Perdersen, where she researched mesoderm specification using embryos and stem cells. Later she was awarded a BHF intermediate fellowship to study heart-chamber specification in Sir Jim Smith's laboratory at the NIMR. After a 2 year career break, she was awarded a Wellcome Trust Career re-entry fellowship to continue her work on heart-chamber development at the Francis Crick Institute. Her experience includes human stem cells research and embryology. Her work has led to the submission of two patents arising from human stem cell studies. Andreia has collaborators in Europe and the USA. She is now trying to commercialise her left ventricle cardiomyocyte model for pharma use and her team is working in both academic and translational projects.



Study on feasibility of the partial meniscal allograft transplantation

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¹Peking University Third Hospital, China

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Since the meniscus is an important stabilizing structure of the knee joint and has a significant role in load-bearing and shock absorption, so the complete structural and functional reconstructions of the teared menisci should be done not only after partial meniscectomy but also post total meniscectomy. So far, animal experiments and good clinical practice have showed that the total meniscus allograft transplantation (TMAT) after total meniscectomy has partially solved the problem of structural and functional reconstructions after total meniscectomy. However, partial meniscectomy will also lead to accelerated knee degeneration, and its proportion is much higher than that of patients with total meniscectomy. Herein, the feasibility of partial meniscus allograft transplantations (PMAT) after partial meniscectomy was investigated for

the first time by using the 40% posterior horn meniscectomy model of the medial meniscus in Beagle dogs, and also for the first time, TMAT group and the total meniscectomy group were used as control groups. Compared with the TMAT, the transcriptomics evaluation, scanning electron microscope observation, histological regeneration and structure, biomechanical property, inflammation environment, and the knee function post PMAT were more similar to that of normal meniscus was first reported. This study provides a PMAT scheme with clinical translational value for the complete structural and functional reconstruction of the patients with partial meniscectomy and fills the gap in the field of teared meniscus therapy on the basis of quite well clinical applications of the meniscus repair and the TMAT.

Biography

Jia-Kuo Yu, PhD supervisor, director of the Institute of Sports Medicine of Peking University, director of the Department of Sports Medicine and Knee Surgery of Peking University Third Hospital. Studied in Germany as a senior visiting scholar between 1999 and 2001. Expert enjoying the special allowance of The State Council. Chairman of Geriatric Sports Medicine Branch of Chinese Society of Gerontology and Geriatrics. Group leader of Passive Implants of Medical Device Classification Technical Committee of State Drug Administration. Vice chairman of biomaterial advanced manufacturing branch of Chinese biomaterials Society. 99 English articles were published as the first author or corresponding author. 10 monographs of the chief editor or deputy chief editor. 66 patents have been granted (including 18 invention patents), 32 patents have been converted. The total amount of conversion exceeds RMB 100 million.



Vascular photobiomodulation as therapy in the treatment of children and adolescent with temporomandibular disorders - Study protocol for a randomized, controlled, blind, clinical trial

Ferreira Sertaje María Roxana

Catholic University of Uruguay, Uruguay

This study aims to verify if the use of intravascular laser irradiation of blood (ILIB) influences the reduction of pain and increases the range of motion in opening and closing of the mouth in children and adolescents with Temporomandibular Disorders (TMD).

Methods: This will be a blind, randomized and controlled clinical trial, which will be carried out on children between 6 and 12 years of age who enter the Catholic University of Uruguay, Faculty of Health Sciences, Postgraduate School, for treatment. To be included, children must present temporomandibular disorders, based on the diagnostic criteria will be the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD). Forty-five participants

will be randomized to three groups: Group 1 – ILIB with 2 sessions of 20 minutes for 12 weeks (n=15); Group 2 – Placebo laser application with 2 sessions of 20 minutes for 12 weeks (n=15); Group 3 – Control with no treatment (n=15). Irradiation will be performed by continuous and direct transcutaneous application to the radial artery, by means of a bracelet that inserts the laser beam. The laser to be used is infrared, power 100 mW \pm 20%, wavelength 808nm \pm 10 nm, continuous application. RDC/TMD and pain evaluated through a visual analog scale will be the outcome measures.

Discussion: Due to the low level of evidence, new studies are needed on the effect of ILIB in children with TMD.

Biography

Ferreira Sertaje María Roxana is currently under a PhD Graduate Program in Applied Rehabilitation in Health Sciences Universidad Católica del Uruguay Universidad Nueve de Julio San Pabl. She is a specialist in Orthodontics and Facial Bucomaxillo Orthopedic. She is working as a professor Orthopedics Course in the Specialty of Orthodontics and Buco Maxillofacial Orthopedics.



Efficacy and safety of Kleeb Bua Daeng formula in mild cognitive impairment patients: A phase I randomized, double-blind, placebo-controlled trial

Natdanai Musigavong¹, Chantana Boonyarat², Yaowared Chulikhit², Orawan Monthakantirat², Makorn Limudomporn¹, Supaporn Pitiporn¹, Pakakrong Kwankhao¹ and Supawadee Daodee²

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²Khon Kaen University, Thailand

Individuals with mild cognitive impairment (MCI) were at increased risk of conversion to dementia. The Kleeb Bua Daeng (KBD) formula could be the alternative treatment option for MCI through multi-target activities. However, the lack of clinical trial, therefore, need to be studied in our research. Forty patients with MCI were randomly assigned to receive the KBD capsule or placebo at a dose of 1,000 mg twice a day for three months. They were

monitored cognitive functions by the Montreal Cognitive Assessment (MoCA) assessment test and blood chemistry assessment every one month. We found that the KBD-treated group had no significant differences on the MoCA test compared to placebo. Moreover, there was no alter in biochemical parameters of the liver, and renal function was observed which could confirm the safety of this KBD formula.

Table 1: Mean difference level of serum AST and ALT between KBD and placebo group.

Study month	Mean difference of AST (95% Confidence Interval)	p-value	Mean difference of ALT (95% Confidence Interval)	p-value
Month 1	0.75 (-2.66, 4.16)	0.666	-1.70 (-7.55, 4.15)	0.569
Month 2	1.15 (-2.33, 4.63)	0.517	-1.79 (-7.77, 4.18)	0.556
Month 3	0.03 (-3.48, 3.54)	0.985	-4.81 (-10.84, 1.21)	0.117

Multilevel mixed effect linear regression model was used in analyzing mean difference.

Table 2: Mean difference level of eGFR between KBD and placebo group.

Study month	Mean difference of eGFR (95% Confidence Interval)	p-value
Month 1	2.40 (-7.52, 12.33)	0.635
Month 2	0.123 (-9.89, 10.13)	0.981
Month 3	1.844 (-8.17, 11.85)	0.718

Multilevel mixed effect linear regression model was used in analyzing mean difference.

Biography

Natdanai Musigavong is presently head of research and development in Thai traditional medicine at Chao Phya Abhaibhubejhr hospital, ministry of public health, Thailand. He started working as a pharmacist for this public hospital in 2010. His expertise is in the area of clinical study of Thai traditional medicine. The career overview is to supervise the design and writing of protocols, case report forms, and informed consent forms for clinical trials. Additionally, he has to direct the planning and implement all activities required to conduct and monitor complex clinical trials and ensures that good clinical practices are followed.



The usefulness of a three protein signature blood assay (Mastocheck®) for follow up after breast cancer surgery

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Sungsoo Kim³, Kyung Guen Ahn³ and Dong Young Noh^{1,3}

¹CHA University School of Medicine, Republic of Korea

²Seoul National University College of Medicine and Seoul National University Hospital, Republic of Korea

³Bertis Inc., Republic of Korea

Purpose: Mastocheck®, a proteomic-based blood assay, has been developed for early diagnosis of breast cancer. The purpose of this study is whether Mastocheck® is useful as a postoperative follow-up.

Methods: A total of 255 patients were analyzed. The patients were classified into longitudinal monitoring and recurrence/ nonrecurrence cohorts. The longitudinal monitoring cohort consisted of 111 patients. In this cohort, blood analyses were performed three times (before surgery, 8 weeks after surgery, and between 6 months and one year after surgery), and a comparative analysis of the values of Mastocheck® and individual proteins at each time point was performed. The recurrence/ nonrecurrence cohort consisted of 144 patients who had been followed up for more than 1 year, and the blood marker values at the time of local recurrence were compared to those of nonrecurrence patients.

Results: In the longitudinal monitoring cohort analysis, in 81 of 111 patients were diagnosed

with breast cancer with Mastocheck® and the sensitivity was 73.0%. Of 111 patients in the longitudinal monitoring cohort, 108 had two blood analyses (before and 8 weeks after surgery), and three serial blood analyses were performed on 53 patients. The Mastocheck® value that were in the cancer range of 73.0% (in 81 of 111 patients) of patients before surgery, was within the normal range of 68.5% (in 74 of 108 patients) at 8 weeks after surgery and 88.7% (in 47 of 53 patients) from 6 months to 1 year after surgery. The value of Mastocheck® was significantly decreased after surgery compared to before surgery ($p < 0.001$). In the recurrence/nonrecurrence cohort analysis, the Mastocheck® values were in the cancer range in 38 out of 63 recurrence patients and within the normal range in 66 of 81 nonrecurrence patients (sensitivity of 60.3% and specificity of 80.2%).

Conclusions: Mastocheck® is expected to be used as a blood marker tool to aid in the early detection of recurrence during follow-up after breast cancer surgery.

Biography

Yumi Kim is working as an assistant professor at CHA University School of Medicine under the department of surgery.

Synthesis of azo-guanidine based molecules and their DNA interaction in alcoholic medium

Uzma Hashmat¹, Ataf Ali Altaf², Nasir Rasool³ and Muhammad Yousaf⁴

^{1,3,4}GC University, Faisalabad, Pakistan

²University of Okara, Pakistan

As DNA sensing has vast technology for researchers and other biotechnologists, we have introduced emerging class of azo and guanidine based molecules. We synthesized three new compounds (UA1, UA6, and UA7) and checked their potential application towards DNA sensing specially in alcoholic medium. These compounds were characterized in the solid and solution phase. These synthesized materials were characterized by

elemental analysis, FTIR, UV-Visible, ¹H NMR and ¹³C NMR spectroscopy. DNA interaction was further investigated by cyclic voltammetry and hydrodynamic studies. The results showed that compounds have moderate DNA binding properties such as binding constants are ranged 7.2×10^3 , 2.4×10^3 , 0.2×10^3 M⁻¹, for UA1, UA6 and UA7 respectively.

Upon binding with DNA, there was change of colour in solution can be easily seen with naked eye. This

Table 1. Comparative data for synthesized compounds and some reported DNA staining agents. CW = current work. The detection limit of the synthesized compounds is calculated by change in absorbance ($\Delta A = 0.01$) of sample, at λ_{max} and using Lambert-Beer's law, for the changing concentration of DNA [27,28].

s. no.	compound	mode of interaction	binding constant K (M ⁻¹)	change in λ_{max} (nm)	detection limit (ng μ l ⁻¹)	references
1	UA1	electrostatic	7.2×10^3	24	1.8	CW
2	UA6	electrostatic	2.4×10^3	42	5.8	CW
3	UA7	electrostatic	0.2×10^3	22	4.0	CW
4	AG	electrostatic	10^4	10	15	[3]
5	EtBr	intercalation	$>10^5$	44	1.0	[29,30]
6	SYBR G-I	groove binding	$>10^6$	27	0.06	[4,31]
7	TOTO-1	intercalation	10^{14}	—	0.02	[32]
8	YOYO-1	intercalation	$>10^{10}$	—	0.5	[33-35]
9	methylene blue	intercalation/groove binding	$>10^4$	3	5.0	[36,37]



Figure 3. The change in the colour of the ethanolic solution of test sample UA6 after its interaction with DNA.

change in colour is due to blue shift in λ_{max} value. These results indicated the potential of synthesized compounds as DNA sensors with detection limit 1.8, 5.8 and 4.0 ng μ l⁻¹ for UA1, UA6 and UA7 respectively. It is concluded that the binding mode is

electrostatic and binding strength is moderate and is less than the other existing DNA sensing molecules. The good changes in wavelength indicated that better DNA sensors specially in ethanolic medium.

Biography

DNA sensing is the vast field of interest in science. It is helpful to study the inheritance in life. By reviewing literature there are many chemical sensors who are helpful to provide information about the composition of environment. There are series of chemicals used for DNA sensing such as EtBr is commonly used in DNA sensing. Although EtBr show more fluorescence but it shows more than 20 times more fluorescence with DNA double helix interaction. That's why EtBr got more popularity in the field of science and is used in molecular biology laboratories. But EtBr may act as carcinogens as it affects mitochondrial DNA and inhibit its replication. It also responsible to affect human reproductive system and disturb the development of embryo. That is why we synthesized novel azo-guanidine derivatives because dyes have more probing ability for DNA sensing. We characterized azo-guanidine dyes with instrumental techniques such as elemental analysis, FTIR spectroscopy, NMR spectroscopy, UV-Visible spectroscopy and cyclic voltammetry. The DNA interaction was detected by binding behavior and binding constant.



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Hybrid learning in nursing programs: A scoping review

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²University of British Columbia, Canada

Objectives: This review set out to explore nursing students perception of hybrid learning methods and assess these methods efficacy compared to traditional face-to-face and online learning methods.

Design: Following Arksey and O'Malley's (2007) five-stage framework, a scoping review methodology was used.

Data sources: Articles published from 2001-2021 were gathered from the following electronic databases: CINAHL, MEDLINE, EBSCOhost, PsychINFO and Google Scholar.

Review Methods: After the initial screening of abstracts, 124 articles were identified by the researchers as potentially relevant; subsequently, 16 articles were chosen to be included in the study, as determined by the inclusion criteria.

Results: The perception of hybrid learning

methods among nursing students was generally positive, with a few notable exceptions. However, the evidence for the superiority of hybrid learning methodology compared to other learning methodologies in the medical context appears uncertain at this point in the research. An explanation for this finding is that one methodology may outperform the other on certain measures of educational success but be outperformed by another methodology on another measure. Factors across teaching situations such as instructors personality, design of online teaching platform, individual class dynamics, student motivation levels, and course content are also important to consider when evaluating the success of a methodology.

Conclusion: Hybrid learning is a feasible and innovative way to deliver nursing skill classes if used appropriately. More research is needed to elucidate which learning contexts can be ideally matched with a specific learning methodology.

Biography

Claire Song is a practicing registered psychiatric nurse and work as a faculty member at Douglas College, teaching future health care professionals in British Columbia, Canada. She currently enrolled in the PhD in Nursing program at the University of British Columbia (UBC). She hold a Master of Science degree from the UBC, School of Population and Public Health. As a PhD student in the UBC's School of Nursing, her research interests aim to evaluate the measurement equivalence of a depression screening tool among adolescents, and to conduct further investigation of the impact of strength of ethnic identity on responses to the depression screening items among adolescents.



Distribution of human papillomavirus genotypes in suspected women cytological specimens from Tehran, Iran

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²Tehran University of Medical Sciences, Iran

³Islamic Azad University, Iran

Background and Objectives: The human papillomavirus (HPV) is associated with more than 70% of the cervical neoplasm. The current study aims to evaluate the distribution of HPV genotypes in suspected women cytological specimens from Tehran, Iran.

Materials and Methods: In the current cross-sectional study, HPV genotype prevalence was investigated in 433 subject women. DNA extraction was performed by High Pure Viral Nucleic Acid kit. A semi-automatically hybriSpot 24™ (HS24) setting was used for HPV typing and data interpreted by hybriSoft™ software according to instructions.

Results: Pathologic data showed 181 (41.8%) had non-malignant lesions, 212 (49%) had inflammation and 40 (9.2%) reported LSIL in primary Pap-smear result. HPV was found in 143 (33%) specimens and the most comment

high-risk and low-risk HPV types were HPV-16 and -6, respectively. Also, 62 (43%) were co-infected with multiple genotypes includes, 34 (24%) cases had co-infection with two HPV types, 17 (12%) cases had co-infection with three HPV types, 6 (4%) cases had co-infection with four HPV types and 5 (3%) cases had co-infection with five HPV types. There was statistically different domination on high-risk genotype in most of the co-infected sample ($p < 0.01$).

Conclusion: Current study indicates that the lesion pathology assessment was significantly associated with the HPV infection ($p < 0.01$). Furthermore, the age group assessment shows that most of the HPV positive cases were 21 to 40 ($p < 0.01$). The HPV infection prevalence in the current study was 33% and the most frequently reported high-risk and low-risk HPV types were 16 and 6, respectively.

Biography

Mahshid Panahi is an associated professor of pathology, director of pathology program in Iran University of Medical sciences for about 10 years. She had passed her medical student course and pathology residency from Iran university of medical sciences. Now she is working as general pathology in Firozgar Hospital in Tehran.





***SCIENTIFIC
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Soluble immune checkpoint-related proteins as predictors of tumor recurrence, survival, and T cell phenotypes in clear cell renal cell carcinoma patients

Wu Xifeng

Zhejiang University School of Medicine, China

Immune checkpoint inhibitors have achieved unprecedented success in cancer immunotherapy. With the exception of a few candidate biomarkers, the prognostic role of soluble immune checkpoint-related proteins in clear cell renal cell cancer (ccRCC) patients is largely uninvestigated. We profiled the circulating levels of 14 immune checkpoint-related proteins panel (BTLA, GITR, HVEM, IDO, LAG-3, PD-1, PD-L1, PD-L2, Tim-3, CD28, CD80, CD137, CD27 and CTLA-4) and their associations with the risk of recurrence and death in 182 ccRCC patients using a multiplex Luminex assay. Gene expression in tumors from a subset of participating patients ($n = 47$) and another 533 primary ccRCC from TCGA were analyzed to elucidate potential mechanisms. Our primary endpoint is overall survival; secondary endpoint is recurrence-free survival. Multivariate Cox proportional hazard model, unconditional logistic regression model, and Kaplan-Meier analysis were applied in the study. sTIM3 and sLAG3 were significantly associated with advanced (stage III) disease ($P < 0.05$). sPD-L2 was the strongest predictor of recurrence (HR 2.51, 95%CI 1.46-4.34, $P = 9.33E-04$), whereas high sBTLA and sTIM3 was associated with decreased survival (HR 6.02, 95%CI 2.0-18.1, $P = 1.39E-03$ and HR 3.12, 95%CI 1.44-6.75, $P = 3.94E-03$, respectively). Risk scores based on sTIM3 and sBTLA indicated that the soluble immune checkpoint-related proteins jointly predicted recurrence and death risks of ccRCC ($P = 0.01$ and $4.44E-$

04, respectively). Moreover, sLAG3 and sCD28 were found negatively correlated with cytolytic activity of T cells in tumors ($\rho = -0.31$ and -0.33 , respectively). Our study provides evidence that soluble immune checkpoint-related proteins may associate with advanced disease, recurrence and survival in ccRCC patients, which highlights the prognostic values of soluble immune checkpoint-related proteins. Future independent validation in prospective studies is warranted.

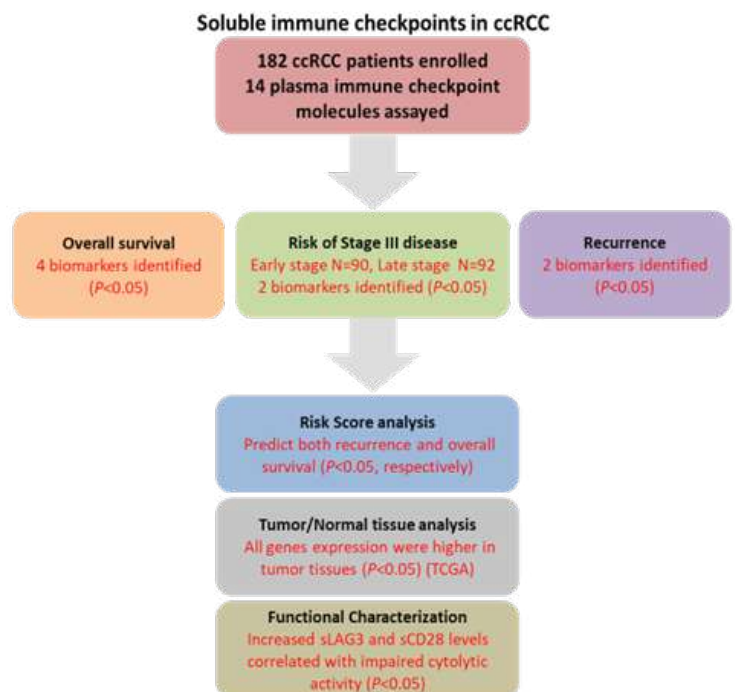


Table 2 Soluble immune checkpoint proteins and association with clinical outcomes of ccRCC patients

Protein names High vs low ^a	Advanced disease		Recurrence		Survival	
	Adjusted OR (95%CI) ^b	P value	Adjusted HR (95%CI) ^c	P value	Adjusted HR (95%CI) ^c	P value
sTIM3	1 (reference) 2.61 (1.07–6.40)	0.04	1 (reference) 1.65 (0.61–4.40)	0.32	1 (reference) 3.12 (1.44–6.75)	3.94E-03[#]
sCD27	1 (reference) 0.62 (0.34–1.16)	0.14	1 (reference) 1.44 (0.68–3.03)	0.34	1 (reference) 2.80 (1.17–6.67)	0.02
sCD28	1 (reference) 0.45 (0.18–1.16)	0.10	1 (reference) 2.30 (0.96–5.51)	0.06	1 (reference) 2.71 (1.13–6.47)	0.02
sCTLA4	1 (reference) 1.75 (0.91–3.40)	0.10	1 (reference) 2.13 (1.06–4.28)	0.03	1 (reference) 1.12 (0.51–2.44)	0.78
sIDO	1 (reference) 1.25 (0.62–2.54)	0.54	1 (reference) 0.48 (0.19–1.23)	0.13	1 (reference) 0.49 (0.06–3.99)	0.51
sLAG3	1 (reference) 3.36 (1.55–7.27)	2.13E-03[#]	1 (reference) 1.38 (0.32–6.00)	0.66	1 (reference) 2.21 (0.95–5.15)	0.07
sBTLA	1 (reference) 0.66 (0.33–1.33)	0.25	1 (reference) 0.61 (0.30–1.27)	0.19	1 (reference) 6.02 (2.00–18.1)	1.39E-03[#]
sPDL1	1 (reference) 4.59 (0.91–23.3)	0.07	1 (reference) 1.51 (0.89–2.56)	0.12	1 (reference) 1.57 (0.70–3.49)	0.27
sPDL2	1 (reference) 0.53 (0.18–1.57)	0.25	1 (reference) 2.51 (1.46–4.34)	9.33E-04[#]	1 (reference) 2.39 (0.97–5.88)	0.06

Biography

Xifeng Wu, M.D., Ph.D., is Dean and Professor of School of Public Health; Vice President of The Second Affiliated Hospital of School of Medicine; Director of National Institute for Data Science in Health and Medicine; Director of Center for Big Data Research in Medical Insurance & Health Policy at Zhejiang University; China National Top Expert; and Zhejiang Province Top Expert. Dr. Wu's research focus has been on human genetics and health big data.

Dr. Wu has made impactful contribution on using highly innovative and integrative strategies to build big data, discover novel modifiable risk factors, uncover molecular signatures, and create robust prediction models across the cancer continuum with evidence-based artificial intelligence to advance precision health. She is a world-renowned public health expert and highly productive cancer epidemiologist with over 920 publications in journals such as Nature Genetics, Lancet, Lancet Oncology, British Medical Journal, JAMA, New England Journal of Medicine, and Nature.



mHealth platform improved health worker's compliance to WHO's IMNCI guideline in Nairobi, Kenya

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Poor access to quality health services, especially in urban slums, is a global challenge. Given similar challenges in Nairobi's Kibra informal settlement area, we collaborated with the Langata/Kibra sub-county health management team to conduct a pilot program for improving the quality of child health services delivered by health care providers (HCPs). The pilot introduced a digital mHealth platform to HCPs working in Kibra informal settlement area in Nairobi. This mHealth platform was compliant to WHO's recommended guideline for integrated management of newborn and child illnesses (IMNCI) and was designed to help sick child assessment, diagnosis and management by HCPs. We aimed to determine if using this digital platform, coupled with supportive supervision and community outreach, would lead to improve compliance to the IMNCI guideline for assessment, diagnosis and treatment of sick children. We conducted baseline (February 2019) assessment, trained selected HCPs on the

mHealth platform on handheld android tablets, conducted end line (March 2020) and measured any change in HCP's compliance to IMNCI guidelines. Total 89 HCPs were the mHealth platform users during end line assessment. When asked about the choice of antibiotic for treating childhood pneumonia, we found proportion of HCPs who preferred Amoxicillin dispersible tablet, the recommended treatment for childhood pneumonia, increased from 3% at baseline to 38% at end line. Proportion of HCPs who were aware that antibiotics should NOT be used for the management of simple diarrhea increased from 14% (at baseline) to 50% (at end line). At end line, more than 90% HCPs were found compliant in their practice to IMNCI guidelines for sick child assessment, diagnosis and management. These results demonstrate the use of the IMNCI compliant mHealth platforms as a potential important effective way to improve capacity and compliance among HCPs who are serving communities like Kibra informal settlement in Nairobi, Kenya.

Biography

Elsie Nzale Sang is a Project Coordinator for Nairobi Programmes at Save the Children International in Kenya. She has a degree in BSc Food Nutrition and Dietetics from Kenyatta University. She has 13 years of experience working in health and nutrition programmes in humanitarian and development settings.



FIGNL1 is a potential biomarker of cisplatin resistance in non-small cell lung cancer

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Background and Objective: Fidgetin-like 1 (FIGNL1) participates in tumor resistance by playing the function of homologous recombination repair(HRR). However, the role of FIGNL1 in non-small cell lung cancer (NSCLC) is still unclear. This study aims to understand the expression of FIGNL1 in NSCLC and preliminarily explore its relationship with cisplatin resistance.

Methods: FIGNL1 messenger RNA (mRNA) was analyzed in 1018 NSCLC tissues and 111 adjacent tissues using The Cancer Genome Atlas program. FIGNL1 mRNA in cisplatin-resistant and cisplatin-sensitive cell lines was analyzed by the Gene Expression Omnibus project. FIGNL1 protein was detected in 58 NSCLC tissues and 58 adjacent tissues by immunohistochemistry. The relationship between FIGNL1, clinical pathological characteristics and disease-free survival was retrospectively analyzed. Gene ontology was used to analyze the biological process mainly involving FIGNL1, and STRING online

constructed its protein interaction network and screened the key genes (hub genes).

Results: The Cancer Genome Atlas showed that FIGNL1 mRNA was higher in 1018 NSCLC tissues than in 111 adjacent tissues ($P < 0.05$). In the dataset "GSE157692," FIGNL1 mRNA was higher in cisplatin-resistant cell lines ($P = 3.80e-05$). The hub genes in FIGNL1 and HRR directions are RAD51 and CCDC36. Immunohistochemistry showed that the FIGNL1 protein in 58 NSCLC tissues was higher than that in 58 adjacent tissues ($P < 0.01$). FIGNL1 is associated with gender, histopathological type, and nerve invasion in NSCLC. The disease-free survival in NSCLC patients with high FIGNL1 expression was shorter ($P = 0.032$).

Conclusion: FIGNL1 is associated with poor prognosis in NSCLC, and cisplatin resistance may be involved. These observations provide a clinical basis for exploring FIGNL1 as a potential biomarker for cisplatin resistance in NSCLC.



Mechanistic insights on the possible protective role of polyphenols extracted from *Tamarixaphylla* aerial parts against sodium arsenite-induced hepatotoxicity in rats

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Objective: Arsenic exposure is associated with the induction of hepatotoxicity. Current study was aimed to investigate the hepatoprotective ability of polyphenolic components of *Tamarixaphylla* (TA) ethanolic extract against sodium arsenite (SA)-induced liver injury of rats.

Methods & Results: Significantly, higher quantities of phenolic (318.7 ± 2.5 mgg⁻¹GAE) and flavonoid (250.69 ± 3.3 mgg⁻¹QE) contents were present. Inhibitory concentration (IC₅₀) exhibited an excellent potential for antioxidant (IC₅₀= 25.99 µg/mL) assay. High performance liquid chromatography (HPLC) confirmed the existence of myricetin (10.40ppm), sinapic acid (2.131ppm), kaempferol (0.486ppm), caffeic acid (5.094 ppm). Forty-two rats were divided into 7 groups. Group 1 received normal saline (2 mL/kg/day, orally for 21 days), Group 2 received SA (10mg/kg/day for 21 days), and Group 3 received SA alone for 7 days (10mg/

kg) and continues with silymarine for 21 days (25mg/kg orally). Group 4, 5, 6 received SA alone for 7 days and continue with TA extract up to 21 days (125mg/kg, 250mg/kg, and 500mg/kg orally) respectively, and Group 7 received TA extract (500mg/kg) for 21 days. SA was administered to all treated groups for 21 days. Treatment with polyphenolic ethanolic extract of TA restored the hepatic indices and oxidative markers in a dose-dependent manner. The upregulation in tumor necrosis factor- α , interleukin-6, and cyclooxygenase-2 upon SA treatment suggesting inflammation was normalized by the treatment of rats. Above mentioned biochemical findings were supported well with histopathological screening.

Conclusion: Present findings suggest that TA polyphenolic ethanol extract could mitigate the oxidative stress and inflammation induced by SA in liver tissues.

Table.1.Quantitative analysis of polyphenolic TA extract by using HPLC.

Sr.#	Compounds	Retention time (min)	Area (mAU*S)	Area %	Amount (ppm)
1.	Caffeic acid	6.518	1407.69836	86.2955	5.0941163
2.	Sinapic acid	11.673	223.55443	13.7045	2.1319314
3.	Myricetin	4.594	890.59033	73.3817	10.403431
4.	Keamferol	8.480	37.00148	3.0488	0.486458

Fig.6. Effect of TA polyphenolic extract on sodium arsenite-induced changes in inflammatory mediators (COX-2, TNF- α and IL-6).a, b, c and d show statistically significant difference with respect of DC group at level of $p < 0.05$, $p < 0.01$, $p < 0.001$ and $p < 0.0001$ respectively

Biography

Shaher Bano is a registered Pharmacist, Researcher and currently working as clinical research coordinator in research Centre of a trust hospital. After Pharmacy graduation in 2011, she started to practice my pharmacy profession from The Children's Hospital & the institute of child health, Lahore. Later on, she had served as retail/community pharmacist in a Private sector. Subsequently, having years of experience, she completed her M.Phil.



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