

Advanced Cardiology and Cardiovascular Innovations

June 27-28, 2024 | Amsterdam, Netherlands





PROGRAM-AT-A-GLANCE >>

YOUR FIRST CHOICE FOR RESEARCH INGENUITY





Scientific Program

| 08:00-08:30 | Registrations |
|-------------|---|
| | |
| 08:30-08:40 | Opening Ceremony |
| | |
| Moderator | Arthur J. Siegel, Massachusetts General Hospital, USA |
| | |
| Chair | Liang-Wu Fu, University of California-Irvine, USA |

Topics: Clinical Cardiology | Innovations in Cardiovascular Surgery | Heart Diseases | Hypertension | Electrocardiography | Cardio-Oncology | Precision Medicine in Cardiology | Interventional Cardiology | Electrocardiography | Cardio-Oncology | Cardiac Nursing | Pediatric Cardiology | Cardiac Surgery | Cardiovascular Disease | Atherosclerosis | Sports Cardiology | Cardiac Imaging

Distinguished Speaker Talks

| 08:40-09:00 | Title: Acupuncture's effect on hypertension in animal model and related mechanisms Liang-Wu Fu, University of California-Irvine, USA | | | |
|-------------------------|---|--|--|--|
| 09:00-09:20 | Title: Circulating T cell specific extracellular vesicles as novel biomarkers of acute rejection in heart transplantation Prashanth Vallabhajosyula, Yale University, USA | | | |
| 09:20-09:40 | Title: Isolated spontaneous renal artery dissection: Endovascular intervention J Gregory Roberts, Centura St. Francis Health Center, USA | | | |
| 09:40-10:00 | Title: Enhancing marathon safety: The role of low-dose aspirin in cardiac arrest preventionArthur J. Siegel, Massachusetts General Hospital, USA | | | |
| 10:00-10:20 | Title: New individualized management for gut barrier dysfunction & using food to treat heart disease, hypertension and stroke Linda Liang, University of Southern California, USA | | | |
| Group Photo 10:20-10:25 | | | | |

Refreshment Break 10:25-10:40

| 10:40-11:00 | Title: Establishing a quality improvement program for Pediatric In-Hospital Cardiac Arrest Anya J. Freedman, Saint Louis University, USA |
|-------------|--|
| 11:00-11:20 | Title: Similarity Score for the Identification of Active sites During Patient- Specific Catheter Ablation of Atrial Fibrillation Tolkacheva E. G, University of Minnesota, USA |
| 11:20-11:40 | Title: Coronary microcirculatory dysfunction can be assessed by characteristics of resting Pd waveform Satoshi Hashimoto, Suwa Central Hospital, Japan |
| 11:40-12:00 | Title: Factors associated with a nonresponse to prone positing in patients with severe acute respiratory distress syndrome due to SARS-Cov-2Sergio Leonardo Cardozo Avendano, Pontificia Universidad Javeriana, Colombia |
| 12:00-12:20 | Title: Connecting obesity and gallbladder and biliary diseases to chole-cardiasyndrome (UDCA USE): Systematic review and meta-analysisMohammad Alhuniti, Royal Medical Services, Jordan |
| 12:20-12:40 | Title: Regulation of mi-RNAs target cancer genes between exercise and non- exercise in Rat Rheumatoid Arthritis Induction Vimolmas Tansathitaya, Mahidol University, Thailand |
| 12:40-13:00 | Title: Multifaceted roles of ALK family receptors and Augmentor ligands in health and disease Luka Katic, Icahn School of Medicine at Mount Sinai Morningside/West, USA |
| | Group Photo 13:00-13:05 |
| | Lunch Break 13:05-13:50 |
| | Title: HDL subclasses and the distribution of paraoxonase 1 activity in patients |
| 13:50-14:10 | with ST-elevation acute myocardial infarction Saska Djekic, Public Health Institution "Health Center Doboj", Bosnia and Herzegovina |
| 14:10-14:30 | Title: Late post-TAVI endocarditis requiring aortic valve replacement by sternotomy: A challenging case Paola Stephany Gonzalez Ausique, Hospital Militar Central, Bogota, Colombia |
| 14:30-14:50 | Title: Infective endocarditis in the emergency department: Clinical peculiaritiesand predictive factors of in-hospital mortalityJendoubi Asma, Charles Nicolle Hospital, Tunisia |

| 14:50-15:10 | Title: Beyond fluid responsiveness: Fluid tolerance at bedside and its importance Rafael Hortêncio Melo, Hospital Municipal Vila Santa Catarina, Brazil | | | | |
|-----------------------|---|--|--|--|--|
| 15:10-15:30 | Title: Relationship between disease knowledge and self-care adherence among heart failure patients at King Abdulaziz University Hospital Salha Hamad Refaei, Ministry of Health, King Abdullah Medical Complex, Jeddah, Saudi Arabia | | | | |
| 15:30-15:50 | Title: The management of anticoagulation in patients with Atrial Fibrillation and Valvular Heart Disease: A review of the guidelines and evidence Dharani Swarna Deiveegan, K.A.P. Viswanatham Government Medical College, The Tamil Nadu Dr.M.G.R. Medical University, India | | | | |
| 15:50-16:10 | Title: Effects of pacemakers on ventricular functions and early predictors of induced cardiomyopathy Sanjeev Kumar, SMS Medical College, India | | | | |
| | Refreshment Break 16:10-16:25 | | | | |
| 16:25-16:35 Poster | Title: Use of snare to overcome difficult anatomies during transcatheter aorticvalve implantation: A case studyCharan Reddy K.V, Apollo Hospital, India | | | | |
| 16:35-16:45 Poster | Title: Software architecture for IoT-based health-care systems with cloud/fog service model Masoumeh Hajvali, Islamic Azad University, Iran | | | | |
| 16:45-17:15 | Title: A unique phenomenon in the heart and the promising future of the unique translational tool to manage cardiac self-renewal and regeneration & Title: Personalized and precision medicine (PPM) as a unique healthcare model to be set up via translational applications and upgraded business modeling to secure the human healthcare, wellness and biosafety Sergey Suchkov, The Russian University of Medicine and Russian Academy of Natural Sciences, Moscow, Russia | | | | |
| 17:15-17:35 | Title: Efficacy of behavioural intervention, antipsychotics and alpha agonists in the treatment of tics disorder in Tourette's syndrome Muneeba Rizwan, Fatima Memorial Hospital, Pakistan | | | | |
| 17:35-17:55 | Title: Comparative analysis of the cardiac structure and transcriptome of scallop and snail, perspectives on heart chamber evolution Rabia Hayat, Ocean University of China in Qingdao, Pakistan | | | | |

| 17:55-18:15 | Title: Cardiovascular safety of prucalopride in patients with chronic idiopathic constipation Ashraf Youssef, Takeda Pharmaceuticals International AG, USA | | | | |
|--|--|--|--|--|--|
| | Asiliai Toussei, Takeda Thannacediicais international A0, 05A | | | | |
| 18:15-18:25 Title: Screening of active ingredients from Wendan decoction in alleviat palmitic acid-induced endothelial cell injury | | | | | |
| I OSICI | Muhammad Ijaz, Qilu Institute of Technology, China | | | | |
| | | | | | |
| 18:25-18:35 Poster | Title: Anesthetic management of a parturient with tuberous sclerosis for emergency cesarean section - A case report | | | | |
| | Vandna Arora, Pt. B.D.Sharma PGIMS, India | | | | |
| Panel Discussion | | | | | |
| End of Day 1 | | | | | |
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Scientific Program

08:55-09:00 Introduction

Topics: Clinical Cardiology | Innovations in Cardiovascular Surgery | Heart Diseases | Hypertension | Electrocardiography | Cardio-Oncology | Precision Medicine in Cardiology | Interventional Cardiology | Electrocardiography | Cardio-Oncology | Cardiac Nursing | Pediatric Cardiology | Cardiac Surgery | Cardiovascular Disease | Atherosclerosis | Sports Cardiology | Cardiac Imaging

| Distinguished Speaker Talks | | | | | | |
|-----------------------------|--|--|--|--|--|--|
| 09:00-09:20 | Title: Delayed migration due to shortening of the lower part of AFX endograft's main body in angled fusiform abdominal aortic aneurysmKatsuhiko Oda, Iwate Prefectural Central Hospital, Japan | | | | | |
| 09:20-09:40 | Title: Biomarkers and mechanisms associated with Cancer-induced Cardiac Cachexia: A systematic review Lisa. Anne Bagnall, James A. Haley Veterans Hospital, USA | | | | | |
| | | | | | | |
| 09:40-10:00 | Title: Percentage weight loss and World Health Organization-Five Wellbeing Index (WHO-5) in patients having bariatric surgery Heshma R Alruwaily, Conway Institute, University College Dublin, Ireland | | | | | |
| 10:00-10:20 | Title: Tissue factor (TF) and vascular endogenous growth factor (VEGF) in detecting thromboembolic complications in diabetic atherosclerotic patients Tijen Alkan Bozkaya, Koç University Hospital, Turkey | | | | | |
| 10:20-10:40 | Title: Comparison of severity of illness scores and artificial intelligence models that are predictive of intensive care unit mortality Cristina Barboi, Indiana University, USA | | | | | |
| Panel Discussion | | | | | | |
| | | | | | | |
| | End of Day 2 | | | | | |
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Liang-Wu Fu, Stephanie C. Tjen-A-Looi, Yiwei D. Gong, Anh T. Nguyen, Zhi-Ling Guo and Shaista Malik

College of Health Sciences, Susan Samueli Integrative Health Institute, University of California-Irvine, USA

Elevated sympathetic activity and chronic inflammation contribute to hypertension in both animals and patients. In previous studies, we have observed that sympathoinhibitory electroacupuncture (SI-EA) at acupoints S36-37 alleviates sympathetic activity and hypertension. Additionally, EA at acupoints SP6-7 exerts anti-inflammatory (AI-EA) effects. However, it is unknown whether simultaneous stimulation of this combination of acupoints attenuates or enhances individual effects. Using a 2x2 factorial design, we hypothesized that combining SI-EA and AI-EA (cEA) leads to a greater reduction of hypertension by decreasing sympathetic activity and inflammation in hypertensive rats than either set of acupoints alone. Dahl salt-sensitive hypertensive (DSSH) rats were treated with four EA regimens including cEA, SI-EA, AI-EA and sham-EA twice weekly for five weeks. A group of normotensive (NTN) rats served as control. Systolic and diastolic BP (SBP and DBP) and heart rate (HR) were measured non-invasively by tail-cuff. Plasma concentrations of norepinephrine (NE), high-sensitivity C-reactive protein (hs-CRP) and interleukin 6 (IL-6) were determined with ELISA at the completion of treatments. DSSH rats on high salt diet progressively developed moderate hypertension in five weeks. DSSH rats treated with sham-EA showed continuous increases in SBP and DBP and elevations in plasma NE, hs-CRP and IL-6 levels relative to NTN control. Both SI-EA and cEA decreased SBP and DBP and NE, hs-CRP and IL-6 concentrations compared with sham-EA. AI-EA prevented SBP and DBP elevation and decreased IL-6 and hs-CRP relative to sham-EA. Importantly in rats treated with cEA, SI-EA interacted positively with AI-EA leading to greater reduction of SBP, DBP, NE, hs-CRP and IL-6 than SI-EA or AI-EA. Additionally, this presentation provides insights into the neural mechanisms underlying acupuncture's impact on hypertension.

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Biography

Liang-Wu Fu, Ph.D., a Project Scientist at the Susan Samueli Integrative Health Institute, University of California, Irvine, USA. Dr. Fu completed his Postdoctoral Research Fellowship in Cardiovascular Physiology at the University of California, Davis in 1998. He earned his PH.D. Degree in Cardiology from Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China in 1993. Dr. Fu's research focuses on two main areas: the neural processing of both visceral and somatic reflex inputs and understanding how acupuncture modulates cardiovascular functions. He has also investigated the mechanisms of activation of cardiac afferents during ischemia. Dr. Fu has served as a principal investigator or co-investigator in multiple NIH (NHIBL and NCCIH) funded studies, resulting in a substantial publication record in peer-reviewed academic journals. His research methodologies include neuroanatomic mapping, phenotyping, ELISA, HPLC and recording of neurophysiological responses.



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Prashanth Vallabhajosyula^{1,2}

¹Division of Cardiac Surgery, Yale University, USA ²Department of Surgery, University of Pennsylvania, USA

There is a critical need for development of noninvasive biomarkers for acute cellular rejection (ACR) monitoring in heart transplantation. Endomyocardial biopsy, a procedure invented over 60 years ago, remains the gold standard guiding diagnosis and treatment for cardiac allograft rejection. We hypothesized that ACR, mediated by activated host immune system T cells, would lead to dynamic changes in the protein and RNA cargoes of extracellular vesicles (EVs) they release into peripheral circulation. In a rodent heart transplant model, T cell specific EVs were successfully enriched from whole plasma EV pool, validated by expression of T cell specific markers including CD4, CD8 and T cell receptor. Circulating T cell EV quantities and their intra-EV cargoes were dynamically altered with ACR (p<0.0001). T cell EV microRNA cargo analysis by next generation sequencing revealed novel candidate biomarkers of ACR, which were validated by stem loop RT-qPCR.

Methodologies for enrichment of circulating T cell EVs were successfully translated to setting of clinical heart transplantation. In an analysis of endomyocardial biopsy matched plasma samples, similar upregulation of T cell EV cargo profiles was observed at time points grade 2 ACR. These data support the diagnostic potential of T cell EVs as noninvasive biomarker of ACR in heart transplantation.

Biography

Dr. Prashanth Vallabhajosyula is an Associate Professor of Surgery at Yale University, New Haven, United States. He serves as Director of the Yale Aortic Institute, Director of Yale Pulmonary Thromboendarterectomy Program and Yale Cardiac Surgery Research Director. He is a graduate of Yale University, after which he pursued training in General Surgery at Johns Hopkins Hospital, postdoctoral fellowship in transplant immunology at Harvard Medical School, followed by cardiothoracic surgery fellowship at the University of Pennsylvania. Prior to his current position, Dr. Vallabhajosyula was faculty at University of Pennsylvania, where in



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addition to his clinical duties, he established a basic science research laboratory investigating the diagnostic potential and functional roles of tissue specific extracellular vesicles in thoracic solid organ transplantation. His research work aims to address an important clinical gap in heart and lung transplantation, where there remains a critical need for development of biomarker platforms for noninvasive surveillance for acute rejection in transplant patients.

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J Gregory Roberts, Chadwick Michaels, Danarae Vasquez and Alexander Warneke

Department of Surgery, Centura St. Francis Health Center, USA

Isolated spontaneous renal artery dissection (ISRAD) is a rare clinical phenomenon that typically presents with refractory hypertension and abdominal and flank pains but may also induce hematuria and severe headache. The protean manifestations of ISRAD may be misinterpreted as renal colic or intrabdominal pathology and requires a high index of clinical suspicion. Computerized tomography (CT), coupled with angiography (CTA) clarifies the diagnosis. No evidence-based management exists as intervention is reserved for persistent symptoms despite optimal medical treatment. The sporadic incidence remains limited to but a few cases illustrating endovascular management. Herein between 2014 and 2019 are presented three, healthy Caucasian males, ages from 47 to 54 years-old who presented with symptomatic ISRAD, coupled with limited renal infarctions and treated with mid-renal and segmental arterial stenting.

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Arthur J. Siegel^{1,2,3}

¹Division of General Internal Medicine, Massachusetts General Hospital, USA ²Department of Internal Medicine, McLean Hospital, USA ³Harvard Medical School, USA

While habitual endurance exercise such as training for a marathon is quintessentially cardioprotective, running such a race transiently increases the risk for cardiac arrest and sudden death. The frequency of such events has been increasing in U.S. marathons since the year 2000 mainly in middle-aged men with subclinical coronary atherosclerosis. Low-dose aspirin use has been shown significantly to reduce the risk for major acute cardiac events in two randomized controlled clinical trials. Based on risk stratification with coronary artery calcium scoring, such use is prudent for middle-aged male marathon runners to enhance primary prevention of race-related cardiac arrest.

| Table 1Coronary artery calcium scores and theanticipated benefit of enhanced primary prevention withow-dose pre-race aspirin for reducing the risk ofmarathon-related cardiac arrest | | | | |
|--|----------------------------------|--|--|--|
| Coronary artery calcium Agatston score levels | Pre-race low-dose aspirin use | | | |
| 0—no coronary plaque burden | Not indicated | | | |
| 1–99—mild disease | Optional | | | |
| 100–399—moderate disease | Recommended | | | |
| ≥400—severe disease | Highly recommended | | | |



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Reproduced from: Siegel A. Pre-race aspirin to attenuate the risk for marathon-related cardiac arrest: deconstructing the legacy of Pheidippides. *Eur Heart J.* 2023, ehad641. https://doi.org/10.1093/eurheartj/ehad641. (Ref 20)

Teaching points:

1. Running a marathon transiently increases the risk for cardiac arrest mainly in middleaged men with subclinical coronary atherosclerosis.

T or F

2. Low-dose aspirin use significantly reduces first heart attacks in middle-aged men.

T or F

3. Coronary artery calcium scoring stratifies the potential benefit of low-dose aspirin use.

T or F

Biography

Arthur J. Siegel, MD, is an associate professor of medicine at Harvard Medical School and a fellow in the American College of Physicians. His research on Boston marathon runners has enhanced the safety of the sport by advancing novel treatments for life-threatening hyponatremia and reducing the risk for cardiac arrest in middle-aged men.

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Linda Liang

University of Southern California, USA

My presentation title is "New individualized management for gut barrier dysfunction & using food to treat heart disease, hypertension and stroke". It is part of my article that published on March 7, 2023. The title of the article is: "Food, gut barrier dysfunction and related diseases: A new target for future individualized disease prevention and management". Dysfunction of gut barrier is known as "leaky gut" or increased intestinal permeability and it will cause diseases in multiple areas in the body. Food and dietary supplements that may promote gut health and food or medication that may alter gut function. The research articles from PubMed demonstrated that food plays a crucial role to cause or remedy gut dysfunction related to diseases. My experience showed wonderful results also.

Biography

Linda Liang is a Doctor of Occupational Therapy and an Associate Professor at the University of Southern California in the United States. She is a mentor of Doctors and Post-Doctors.

Linda was an ophthalmologist in Zhejiang University, School of Medicine in China and blends her prior knowledge and experience of occupational therapy for comprehensive evaluation and effective treatment of her patients.

She developed the Low Vision Program including Homonymous Hemianopia, Normal Pressure Hydrocephalus Program, Hand Tremor and Hand Contracture Management Program and Genital Edema/Lymphedema Management Program at the Keck Medical Center of USC. She published some articles. She invented many novel treatment programs for difficulty medical conditions. She is writing book about them.

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PEERS ALLEY

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Freedman Anya, Lowrie Lia, Madsen and Erik

Saint Louis University, USA

Introduction: Pediatric In-hospital Cardiac Arrest (IHCA) is a rare event with a 50-55% mortality rate. Techniques of CPR, medication and electrical therapy timing, team dynamics, simulation and debriefing programs are associated with improved outcomes. Our aim was to improve outcomes after IHCA by implementing quality improvement processes that cross and coordinate among traditional siloed pediatric resuscitation team structures.

Methods: We chose three outcome measures: 1) return of spontaneous circulation (ROSC), 2) 24-hour survival after IHCA and 3) survival to hospital discharge. Process outcomes include 1) Hot debriefs performed with a standardized form, 2) Code documentation using a revised form and 3) formal code team review presented to a central Emergency Management Committee using a standardized form.

Results: One hundred and thirty-two patients experienced 176 events during the 36-month study period. Survival to hospital discharge increased from 33% during year one to 60% during year two (p < 0.05) but decreased to 45% in year three. Both hot debrief performance and code documentation process methods did not demonstrate widespread adoption, but formal code team review was documented in 80% of events quite rapidly.

Conclusions: There are common traits inherent to effective CPR team response. Ensuring optimal performance of these common tasks and techniques in every pediatric IHCA event in our hospital is being addressed by committee reorganization, task simplification, new technology acquisition and enhanced feedback loops. Early outcome analysis shows initial improvement in survival to hospital discharge following pediatric IHCA.

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Biography

Dr. Freedman is an assistant professor of pediatrics in the division of critical care at Saint Louis University in Saint Louis, Missouri. She completed her pediatric residency and pediatric critical care fellowship at Rady Children's Hospital/University of California, San Diego. She spent an additional year of training in the division of pediatric cardiology at Mattel Children's Hospital/University of California, Los Angeles. Dr. Freedman has been the chair of the Emergency Management Committee at Cardinal Glennon Children's Hospital in Saint Louis, MO since July 2018. Her interests include pediatric resuscitation and pediatric cardiac critical care. Additionally, she has shown a commitment to global health through her volunteer work with Medecins Sans Frontiers and the Novick Cardiac Alliance.



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Tolkacheva, Elena G

University of Minnesota, USA

Atrial Fibrillation (AF) is the most common cardiac arrhythmia. It is associated with an increased risk of stroke, heart failure and sudden cardiac death. It is essential to diagnose AF at the earliest possible stage. Various new AF burden (AFB) metrics were developed for measuring AF complexity and to determine AF management approaches. However, there are limitations in the AF burden metrics since AF treatment outcomes are still sub-optimal. Specifically, any intrinsic complexity of the cardiac electrical signals is not taken into account in current AF burden metrics. Therefore, the goal of this study is to introduce the concept of electrical burden (EB) as the measure of the intrinsic complexity of the electrical signals during AF and to demonstrate that EB is an important metric, in addition to standard AFB. We also developed a Complexity AF score by combining AFB and EB to assess the severity of AF.

Electrocardiogram (ECG) traces of fifty AF patients (23.87±1.56 hours, median 24 hours) taken from the Long-term AF *Physionet* database were analyzed to calculate EB using several metrics. EB was then combined with AFB to calculate Complexity AF score for each patient. Our results demonstrated that AFB and EB were not correlated, describing different aspects of AF complexity. High AFB and EB identified patients at high-risk, emphasizing the superiority of the combined AF score compared to AFB or EB alone. Complexity AF score effectively assessed AF complexity and severity, distinguishing between the paroxysmal AF group (1.88±1.02, 17 patients) and the persistent group (2.52±0.61, 33 patients).

This study emphasizes the importance of EB as an indicator of electrical complexity of AF signals. It highlights the utility of the Complexity AF score in accurately characterizing and stratifying AF risk for improved management.

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Biography

Elena Tolkacheva obtained MS in Theoretical Physics from Belarussian State University and PhD in Laser Physics from Nice University, France. She also received postdoctoral trainings in cardiac electrophysiology from Duke University and SUNY Upstate Medical University, USA. At present, she is a Professor of Biomedical Engineering at the University of Minnesota. Her laboratory is interested in understanding the electrical activity of the whole heart, aiming to reveal mechanisms of complex cardiac rhythms leading to fibrillation and subsequently, to sudden cardiac death. She is the author and co-author of over 60 publications, over 100 conference presentations, has several patents and serves on editorial boards of 5 journals.



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S. Hashimoto and Y. Fujimori

Suwa Central Hospital, Japan

Background and aim: As coronary stenosis progresses, arterioles in the related myocardial region dilate in proportion to ischaemia, resulting in a decrease in resting distal coronary pressure/aortic pressure (Pd/Pa). However, we find some high-remaining resting Pd/Pa values with a large diremption from fractional flow reserve (FFR) in the severely stenotic coronary artery. This study aims to characterize and diagnose those lesions using coffee-loading just before coronary angiography (CAG).

Patients and methods: We enrolled 120 patients who underwent FFR measurement at diagnostic CAG. Sixty patients took a canned coffee containing 222mg of caffeine just before CAG (coffee group) and sixty did not (non-coffee group). We estimated a positive dicrotic wave and the highest pressure after inflection point including dicrotic notch on the Pd waveform at resting Pd/Pa. Amplitude index was calculated as [(the highest pressure after inflection point – minimal diastolic pressure)/pulse pressure] (Fig1).

Results: There were several high-remaining resting Pd/Pa values with a positive dicrotic wave in the severely stenotic lesions of coffee group (Fig2, FFR <0.75). Amplitude index on the Pd waveform at resting Pd/Pa was significantly higher in the lesions with a positive dicrotic wave than in those without (0.41 \pm 0.10 and 0.28 \pm 0.19, respectively, p=0.029).

Conclusions: A high-remaining resting Pd/Pa with a high amplitude index or a positive dicrotic wave on the resting Pd waveform suggests microcirculatory dysfunction such as insufficient arteriolar dilation reactive to myocardial ischaemia or arteriolar constriction. A positive dicrotic wave and a high amplitude index on the Pd waveform at resting Pd/Pa are characteristics of arteriolar constriction in those coronary lesions and can be simple and useful indicators to suggest coronary microcirculatory dysfunction without FFR assessment.

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A. Amplitude index was calculated at the highest pressure point after inflection point.

B. Relationship between FFR and resting Pd/Pa in all lesions

Biography

Satoshi Hashimoto is a cardiology fellow at Suwa Central Hospital, Japan.

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Cardozo A. Sergio L¹, Sanabria R. Oscar² and Muñoz Oscar M²

¹Pontificia Universidad Javeriana, Colombia ²Hospital Universitario San Ignacio, Pontificia Universidad Javeriana, Colombia

A Sars-cov 2 disease is characterized by extensive pulmonary inflammatory involvement, with a wide range of manifestations ranging from asymptomatic forms to Adult Respiratory Distress Syndrome (ARDS), which is characterized by a variable degree of hypoxemia and prone ventilation strategy is used as rescue in these patients who can present a favorable response according to changes in oxygenation indices, however to date there is a gap in knowledge regarding the factors associated with this negative response.

Objective: To identify risk factors for nonresponse to prone positioning in mechanically ventilated patients with COVID-19-associated severe acute respiratory distress syndrome and refractory hypoxemia in a tertiary care hospital in Colombia.

Methods: Observational study based on a retrospective cohort of mechanically ventilated patients with ARDS due to SARS-CoV-2 who underwent prone positioning due to refractory hypoxemia. The study considered an improvement ≥ 20% in the PaO2/FiO2 ratio after the first cycle of 16 hours in the prone position to be a 'response'. We controlled for clinical, laboratory and radiological variables.

Results: A total of 724 patients were included (58.67 ± 12.37 years, 67.7% males). Of those, 21.9% were nonresponders. Variables associated with nonresponse were time from the start of mechanical ventilation to pronation (OR 1.23; 95%CI 1.10 - 1.41); preintubation PaO2/ FiO2 ratio (OR 0.62; 95%CI 0.40 - 0.96); preprone PaO2/FiO2 ratio (OR 1.88. 95%CI 1.22 - 2.94); and radiologic multilobe consolidation (OR 2.12; 95%CI 1.33 - 3.33) or mixed pattern (OR 1.72; 95%CI 1.07 - 2.85) compared with a ground-glass pattern.

Conclusion: This study identified factors associated with nonresponse to prone positioning in patients with refractory hypoxemia and acute respiratory distress syndrome due to SARS-CoV-2 receiving mechanical ventilation. Recognizing such factors helps identify candidates

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for other rescue strategies, including more extensive prone positioning or extracorporeal membrane oxygenation.

Biography

Sergio Leonardo Cardozo Avendaño is a doctor from the National University of Colombia, a specialist in internal medicine at the Technological University of Pereira and a sub-specialist in critical medicine and intensive care at the Pontificia Universidad Javeriana in Bogotá. He is a specialist in epidemiology at the University of Rosario and master's degree in health administration from the Universidad del Rosario.

He currently work as leader of the Internal Medicine and Intermediate Care Unit at the San José del Guaviare Hospital and as an intensivist at El Tunal Hospital in Bogotá. He like to delve into mechanical ventilation and tropical infections, in addition to disruption in medicine in dispersed and rural communities.



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Mohammad Alhuniti¹, Yousif Alsardi² and Alaa Albadaina³

¹Royal Medical Services, Jordan ²Princes Royal Hospital, UK ³Royal Medical Services, Jordan

Atherosclerotic cardiovascular disease (ASCVD) is a leading cause of mortality and death in patient with non-alcoholic fatty liver disease (NAFLD) and weight loss is consider a milestone in the treatment of (NAFLD) and CVD, Gallstone formation following bariatric surgery poses a significant clinical concern, prompting various preventive strategies, including ursodeoxy-cholic acid (UDCA) prophylaxis. This systematic review and meta-analysis aimed to assess the efficacy of UDCA in preventing gallstone formation after bariatric surgery and consider one of the first line management of (NAFLD) and dyslipidemia and (ASCVD) risk and work as antioxidant drug.

A comprehensive literature search was conducted in major databases up to September 2023, identifying 12 randomized controlled trials (RCTs) meeting the inclusion criteria. The studies, spanning from 1993 to 2022, involved 2,767 patients who underwent diverse bariatric procedures. The primary outcome was the overall incidence of cholelithiasis, with secondary outcomes encompassing gallstone occurrences at three, six and 12 months; symptomatic cholelithiasis; and rates of cholecystectomy. The Cochrane risk-of-bias tool was utilized for evaluating study quality and statistical analyses were conducted using the RevMan software (Cochrane Collaboration, London, UK).

Patients receiving UDCA demonstrated a significantly lower overall incidence of gallstones post-bariatric surgery (risk ratio [RR] 0.13; P < 0.0001). Subgroup analyses confirmed reduced gallstone incidence at three months (P = 0.04), six months (P < 0.00001) and one year (P < 0.00001) with UDCA prophylaxis. Symptomatic cholelithiasis incidence was also lower in the UDCA group (RR 5.70; P < 0.00001) and cholecystectomy rates were significantly reduced (RR 3.05; P = 0.002).

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This meta-analysis supports the efficacy of UDCA prophylaxis in preventing gallstone formation after bariatric surgery and normalize liver enzymes within short period of treatment and manage dyslipidemia and decrease mortality risks of atherosclerosis. The findings suggest that UDCA administration not only lowers overall gallstone incidence but also reduces the occurrence of symptomatic cholelithiasis and mitigates the need for cholecystectomy. However, caution is warranted due to heterogeneity, diverse surgical procedures and limited long-term follow-up in the included studies. Further research with standardized protocols and extended observational periods is recommended to strengthen the evidence base and guide clinical practice.

Biography

Mohammad Alhuniti has graduated from the Jordan university school of medicine, Jordan. Then he completed the surgical residency program at the royal medical services and have a license as general surgeon specialist from the Jordan medical council, then he completed the fellow ship of minimal invasive and bariatric surgery at the royal medical services and certified from the Jordan medical council as minimal invasive and bariatric surgery and the royal medical services and certified from the Jordan medical council as minimal invasive and bariatric surgery from **CHU de Nice. Le Centre Hospitalier Universitaire de Nice** and two years' experience in center of excellence for minimal invasive and bariatric surgery, Nice -France. He is a head of minimal invasive and bariatric surgery department at royal medical services, Jordan.

And Tutor and examiner for medical student at Jordan University and Tutor and examiner for surgical resident and board examiner at Jordan medical council, He has over 30 publications that have been cited over 100 times. He has been serving as an editorial board member of several reputed journals.



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Vimolmas Tansathitaya¹, Witchana Sarasin², Tanapati Phakham², Vorthon

Sawaswong³, Prangwalai Chanchaem³ and Sunchai Payungporn³

¹College of Sports Science and Technology, Mahidol University, Thailand ²Faculty of Medicine, Center of Excellence in Systems Biology, Chulalongkorn University, Thailand

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Introduction: Rheumatoid arthritis (RA) is classified as an autoimmune inflammatory condition characterized by pain, swelling and inflammation of the joints, along with stiffness which can reduce function and impair the overall quality of life. Rheumatoid arthritis initiated from chronic inflammatory disorder that can affect not only just the joints but it also damages a wide variety of body systems, including the skin, eyes, lungs, heart and blood vessels.

Some patient cases in post- rheumatoid arthritis diagnosis develop cancer later. Moreover, a total of 138 cases of lung and prostate solid tumors were recorded within 12 months of RA diagnosis. Furthermore, those patients diagnosed with RA experienced cancer of greater severity than was the case for patients who did not have RA. Exercise may represent a novel means of mitigating the suffering of RA and cancer patients. A number of studies have sought to examine the application of exercise as a means of inhibiting tumorigenesis.

Methods: The effects of exercise interventions on serum microRNAs were investigated in pristane-induced arthritis (PIA) rat models. Twelve Sprague-Dawley male rats were divided into 4 groups including non-exercise without PIA (N-EX), non-exercise with PIA (N-EX + PIA), exercise without PIA (EX) and exercise with PIA (EX + PIA). Blood samples were collected at the end of the study period to analyze miRNA biomarkers and target cancer gene predictions.

Results: Four significant Rattus norvegicus (rno-microRNAs) may purpose as tumor suppressors were identified as potential target cancer gene candidate expressions within



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the 4 comparative interventional exercise groups. One rno-microRNA and target cancer gene candidate was up-regulated and 3 rno-microRNAs and their target cancer genes were down- regulated.

Conclusions: Exercise interventions affected rno-miRNAs regulated target cancer gene candidates ITPR3, SOCS6, ITGA6 and NKX2-1 as biomarkers for cancer prognosis in rheumatoid arthritis diagnosis.

| Table 2 | Rno-miRNA | expressions | and target | cancer | gene candidates. |
|---------|-----------|-------------|------------|--------|------------------|
|---------|-----------|-------------|------------|--------|------------------|

| MIRNA | TARGET GENES | GENE FUNCTIONS | EXERCISE GROUPS | RNO-MIRNA REGULATION | TYPE OF CANCER | CANCER RISK | REFERENCES |
|------------------------|-----------------|---------------------|------------------------------------|-------------------------|----------------------|----------------|-----------------------------|
| rno-miRNA 877 | ITPR 3 | Tumor suppressor | EX vs EX + PIA groups | Up | Proteoglycans cancer | Ļ | genome.jp/kegg ncbi.gov |
| rno-miRNA 466b-4-3p | SOCS 6 | Oncogene | N-EX + PIA vs EX + PIA groups | Down | Leukemia | 1 | genecards.org |
| rno-miRNA 128-2-3p | ITGA9 | Oncogene | N- EX vs EX groups | Down | Lung cancer | Ť | genecards.org |
| rno-miRNA 3064-3 | NKX2-1 | Oncogene | N-EX group vs N-EX + PIA groups | Down | Lung cancer | Ť | cancerindex.org ncbi.gov |

Biography

Vimolmas Tansathitaya serve as a lecturer at Thailand's Mahidol University's College of Sports Science and Technology. Her primary research interests concern miRNA and chronic illnesses, as well as fitness. She is also interested in studies on the microbiome in chronic illnesses and exercise, which was presented in an article in 2022. One of her significant study topics concentrated on illnesses and their effects on birth abnormalities acquired by the second and third generations of descendants. MiRNAs and target genes were employed as biomarkers in the research. Tinarathpatra Co Ltd., Thai Health Promotion Foundation and Mahidol University have all provided her with financial support to study the BDNF gene expressions in amphetamine drug users as part of her ongoing research. This research focused on BDNF gene expression, single nucleotide polymorphism (SNP), mRNAs, miRNAs and the microbiota to modify miRNAs and target gene expression. After she received her Ph.D. in Health Promotion and Human Services from the University of Cincinnati in the United States, she was inspired to act on another idea. One of her initial thoughts was to look at how genotypes could potentially evolve as lifestyles shifted and how exercise could help mitigate diseases. Since then, she have been motivated to begin examining genetic causes by performing in-depth studies in epigenetics, with a focus on miRNAs and target genes as major indicators.

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Katic, Luka^{1,2} and Priscan Anamarija³

¹Department of Medicine, Icahn School of Medicine at Mount Sinai Morningside/West, USA ²Department of Pharmacology, Yale University School of Medicine, USA ³Department of Immunobiology, Yale University School of Medicine, USA

The Anaplastic Lymphoma Kinase (ALK)-Augmentor a (Auga) pathway plays a crucial role in various physiological processes, including obesity and cholesterol metabolism, sympathetic nervous system activation and pain modulation. This article highlights the multifaceted roles of the ALK-Augα pathway, underscoring its significance in metabolic regulation and potential implications for cardiovascular health, particularly in patients undergoing ALK inhibitor therapy for lung cancer. Previous research has demonstrated that both ALK knockout and Auga knock-out mice mutants are associated with alterations in body weight, pointing to the kinase's involvement in body weight and metabolism regulation. The interaction between ALK and its ligand Auga has been shown to influence hypothalamic energy associated nuclei, sympathetic activity, dorsal root ganglia (DRG) activity, with implications for both metabolic syndrome and pain perception. Specifically, the pathway's role in the hypothalamus and DRG may intersect with cardiovascular health, suggesting a potential link to hypercholesterolemia and possible asymptomatic myocardial infarction (MI) in lung cancer patients treated with ALK inhibitors.

From a biophysical and structural perspective, the ALK receptor and its interaction with Auga present unique characteristics compared to other receptor tyrosine kinases, offering novel therapeutic targets. The development of specific inhibitors or monoclonal antibodies targeting this pathway could provide therapeutic benefits beyond cancer treatment, potentially addressing metabolic syndrome and pain management.

Given the complexity and broad physiological implications of the ALK-Auga pathway, further research is essential to fully understand its roles and develop targeted therapies that minimize cardiovascular risks. This review emphasizes the need for a multidisciplinary approach to explore the therapeutic potential of modulating the ALK-Auga pathway.



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Figure 1. Organ-specific roles of ALK and Auga signaling axis



Figure 2. ALK and LTK receptors and species-specific respective ligands representative through evolution

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Biography

Luka Katic, MD, PhD (ABD) is a dedicated medical professional currently serving as a resident in Internal Medicine at Mount Sinai Morningside West, New York City, NY.

Dr. Katic holds a medical degree from the University of Zagreb School of Medicine (Croatia). From 2021-2023 Dr. Katic accepted the invitation to join the Schlessinger Lab at Yale University School of Medicine, Department of Pharmacology and study receptor tyrosine kinase. He is also nearing the completion of his PhD in evidence-based medicine at the University of Split School of Medicine, Croatia, with only his dissertation remaining, expected by 2024.

His work has been published in esteemed journals, demonstrating his commitment to advancing medical science. Dr. Katic's academic journey began at the School of Medicine University of Zagreb, Croatia, where he was awarded the Dean's Award for his exceptional performance. Fluent in multiple languages, Dr. Katic is a member of Sigma Xi and the Yale Alumni Association and he continues to contribute to medical science through his clinical and research endeavors.

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Djekic S¹, Vekic J² and Bogavac-Stanojevic N²

¹Department of Laboratory Diagnostics, Public Health Institution "Health Center Doboj", Bosnia and Herzegovina

²Department of Medical Biochemistry, Faculty of Pharmacy, University of Belgrade, Serbia

Background and Aimes: The aim of this multicentric study was to assess the impact of oxidative stress, inflammation and the presence of small, dense, low-density lipoprotein (sdLDL) on the antioxidative function of high-density lipoprotein (HDL) subclasses and the distribution of paraoxonase 1 (PON1) activity within HDL in patients with ST-elevation acute myocardial infarction (STEMI).

Materials and Methods: In 69 STEMI patients and 67 healthy control subjects, lipoproteins' subclasses were separated by polyacrylamide gradient (3-31%) gel electrophoresis. The relative proportion of sdLDL and each HDL subclass was evaluated by measuring the areas under the peaks of densitometric scans. The distribution of the relative proportion of PON1 activity within HDL subclasses (pPON1 within HDL) was estimated by the zymogram method. Malondyaldehide (MDA) concentration was determined using the method described by Girotti et al. The immunoturbidimetric method was used to obtain the concentration of high sensitive C-reactive protein (hsCRP).

Results: STEMI patients had significantly lower proportions of HDL2a and total HDL2 subclasses (p<0.001 and p<0.001, respectively), as well as higher proportions of HDL3b, HDL3c and total HDL3 subclasses than controls (p=0.001, p<0.001 and p<0.001 respectively). Regarding pPON1 within HDL subclasses, only significantly lower pPON1 within HDL3b was found in STEMI group (p=0.036) compared controls. Independent positive associations between sdLDL and pPON1 within HDL3a and between malondialdehyde (MDA) and pPON1 within HDL2b were shown in the STEMI group.

Conclusions: The increased oxidative stress, acute inflammation and increased proportion of sdLDL in STEMI are closely related to the compromised antioxidative function of small HDL3 particles and the altered pPON1 within HDL.

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Biography

Saska Djekic graduated in 2004, at Faculty of Pharmacy, University of Belgrade, in Serbia. After graduation she passed the state exam for Master of Pharmacy. In 2011. she acquired the professional title of Specialist in Medical Biochemistry which is recognised as European Specialist in Laboratory Medicine (EuSpLM) and became a member of European Federation of Laboratory Medicine Academy (EFLM Academy). She is employed as a Head in the Department of Laboratory Diagnostics, in Public Health Institution "Health Center Doboj", Republic of Srpska, Bosnia and Herzegovina. She is currently PhD candidate at Faculty of Pharmacy, University of Belgrade, module Medical Biochemistry. She has published several scientific papers in prominent international journals, as well as numerous congress abstracts and participated as a lecturer on several international and national conferences. Her research interests are the following areas: biomarkers of cardiovascular diseases, lipidology and oxidative stress.



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Paola Gonzalez¹, Camilo Rodriguez² and Ricardo Barragan³

¹Cirugía General, Hospital Militar Central, Bogota, Colombia ²Cirugía Cardiovascular, Hospital Militar Central, Universidad de São Paulo, Colombia ³Cirugía Cardiovascular, Universidad Militar Nueva Granada, Colombia

Percutaneous aortic valve implantation represents an alternative for the treatment of patients with aortic stenosis. This is an option in patients with high surgical risk or contraindication for intervention by conventional sternotomy; with good results in the short and medium term. However it is a procedure associated with complications such as endocarditis, which may require a urgent intervention in these patients with an increase in morbidity and mortality given the history and condition at the time of surgery. We present a clinical case of a nonagenarian patient with post-percutaneous aortic valve implantation endocarditis due to Enterococcus faecalis who presented 8 months after percutaneous aortic valve implantation in our center and required surgical management with excellent results.

Biography

University General Physician the Forest and General Surgery of the New Military University Granada, with a high level of knowledge in scientific areas clinical and surgical, with great manual dexterity and resolution issues. All based on one training based on human, ethical and morals, with an invaluable leadership component intelligence and ability teamwork that allow you to be a good person with a vision of service to community.

Language: Advanced English.

Medium: French

Studies:

- Military University of New Granada, General Surgeon 2019-2023
- El Bosque University, General Surgeon 2010-2016
- Divine Salvador School 1997-2009
- Academic Bachelor 2009

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Work Experience:

- Institute of Coloproctology Medellin. August 2023 Until date
- Surgeons of Colombia Soma Clinic, Medellin. March 2023 Until the date.
- · Las Americas Clinic Medellin: August 2023 To Date
- Mederi Clinic Home Hospitalization May 2017 To Nov 2018
- Police Central Hospital Emergencies March 2016 To Nov 2016

Publications

Experience of managing complex ventral hernia with preoperative techniques:

Pneumoperitoneum and botulinum toxin in a reference center in Bogotá (Colombia). Rev Hispanoam Hernia. 2022;10(1):11-16 Late post-TAVI endocarditis requiring aortic valve replacement due to Sternotomy: A challenging case. Rev Cardiovascular Surgery.Spain https://doi.org/10.1016/j.circv.2023.06.003

Use of high-resolution anoscopy for the detection of anal dysplasia due to papilloma

Virus in patient with inflammatory bowel disease. Colombian Rev of gastroenterology Sigmoid volvulus and adenocarcinoma of the descending colon, a double cause of Intestinal obstruction: a case report. Cir Cir. 2023;91(6):839-843 2023;91(6). DOI: 10.24875/CIRU.22000179

Courses

- Course- Smith and Nephew, Pig Lab for Surgery Ceneral Trauma and abdomen CLEMI complex, Bogota. June 2021 Duration: 4 hours
- Course tutoring in inguinal hernia repair by technique TAPP- Johnson and Johnson and the Colombian Association of Central Military Hospital Surgery, Bogotá. March 2019 Duration: 10 hours
- Basic and advanced adult resuscitation course (BLS –ACLS) Universidad el Bosque December 11 and 12, 2015.
- X Workshop on cardiac arrhythmias. Forest University. 11 and December 12, 2015.

Academic Update

- Advances in Inflammatory Bowel Disease (AIBD) 2022 Annual Meeting to be held from December 5-7, 2022.
- 48th National Surgical Week Congress and XXXIV Pan American Trauma Congress. Presence mode. Cartagena, November 2022.
- International Congress of Surgery Congress "beyond innovation" and II Nutrition Symposium, congress through the Colombian Association of Surgery. Colombian Chapter of the ACS. Face-to-face modality. Keralty, Bogota, May 2022.
- 47th National Surgical Association Week Congress Colombian of Surgery. Virtual Mode, November 2021.
- 46th National Surgical Week Congress Colombian Association of Surgery. Virtual Mode, November 2020.
- 45th Congress of the Colombian Association of Surgery National Surgical Week, August 2019.
- First symposium on intestinal failure Santa Fe de Bogota foundation, June 2013.
- 10th Latin American Congress of Pediatric Nephrology -Latin American Association of Pediatric Nephrology –Cartagena, September 2014.
- 10th International Congress of Surgery and Trauma "Vascular Trauma" Nueva Granada Military Hospital, July 2015.

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Jendoubi Asma¹, Othmani Safia^{1, 2}, Hedhli Hana^{1, 2}, Jouini Sarra^{1, 2}, Zoubli Aymen^{1, 2}, Jemai Mouna^{1, 2}, Maaref Amal¹ and Ben Kaddour Rym¹

¹Emergency Department,, Charles Nicolle Hospital, Tunisia ²Faculty of Medicine, Tunis El Manar University, Tunisia

Introduction: Infective endocarditis (IE) remains a serious disease with significant morbidity and mortality despite therapeutic advancements.

The aim of our study was to determine the predictive factors of in-hospital mortality.

Patients and methods: A prospective comparative study over a period of 54 months was conducted, including all patients admitted for definite infective endocarditis, diagnosed according to the modified Duke criteria published in 2015 by the European Society of Cardiology.

Results: Thirty-four patients were included. Drug addiction was the main risk factor for infective endocarditis (56%). Tricuspid valve involvement was predominant (50%). *Staphylococcus aureus* was the most commonly isolated pathogen (65%). In-hospital mortality rate was 47%. In multivariate analysis, predictive factors for mortality were acute heart failure (OR=7.4; p=0.026; 95% CI [1.2-44]) and cerebral embolic localization (OR=11.1; p=0.024; 95% CI [13-90]).

Table: Predictive factors for mortality in multivariate analysis

| Variables | Р | OR | IC 95% |
|----------------------------------|-------|------|----------|
| Heart failure | 0,026 | 7,4 | [1,2-44] |
| Cerebral embolic localization | 0,024 | 11,1 | [13-90] |

Conclusions: Cardiac and cerebral complications influence the prognosis of IE. Thus, close collaboration among multidisciplinary teams is necessary for improved diagnostic and therapeutic management.

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Biography

Dr. Jendoubi Asma is an academic physician specializing in emergency Medicine with expertise in infectious emergencies and Hospital Hygiene.

After earning her medical degree from the faculty of medicine of Tunis, Dr. Jendoubi completed her residency training in Emergency Medicine at Tunis hospitals, where she demonstrated exceptional aptitude and passion for management acute medical conditions, particularly infectious diseases.

Dr. Jendoubi pursued advanced fellowship training in Infectious Diseases and Hospital Hygiene at the faculty of medicine of Tunis, where she honed her skills in diagnosing and treating a wide range of infectious conditions, while also developing strategies for infection prevention and control in hospital. Her research was focused on the management of infectious emergencies in the emergency department.

In addition, she is a valuable member of the hospital infection control committee, where she contributes to the development of policies and protocols to reduce the risk of healthcare associated infections and to enhance patient safety.



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Rafael Hortêncio Melo^{1,2}

¹Adult Intensive Care Unit, Hospital Municipal Vila Santa Catarina, Brazil ²Adult Intensive Care Unit, Hospital Moriah, Brazil

The presentation aims to present the concept of fluid tolerance, emphasize the importance of its assessment and present methods for evaluating this parameter at the bedside.

Biography

- Doctor graduated from the Federal University of Ceará (UFC)
- · Residency in Clinical Medicine at Hospital Geral Waldemar Alcântara (CE)
- · Residency in Intensive Care Medicine at Hospital Sírio-Libanês (SP)
- Title of Specialist in Intensive Care Medicine by AMIB
- ELSO specialist ECMO
- · Preceptor of the Intensive Care Graduate Program at Hospital Israelita Albert Einstein;
- Professor at the CETRUS Cardiointensive Postgraduate Program
- · Currently ongoing PhD program at Instituto do Coração (INCOR) da FMUSP

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Salha Hamad Alrefaei¹, Asmaa Kalil² and Ruba Matoug Alharazi²

¹Registered Nurse, Ministry of Health, King Abdullah Medical Complex, Jeddah, Saudi Arabia ²Assistant professor in Medical surgical Nursing, Faculty of Nursing, King Abdul-Aziz University, Saudi Arabia

Backgrounds: Heart failure (HF) is a progressive syndrome characterized by complicated therapeutic regimens and repeated hospitalizations. HF has turned into a global epidemic demonstrating serious mortality and morbidity. This study aimed to assess the relationship between disease knowledge and self- care adherence among adult HF patients at King Abdulaziz University Hospital (KAUH).

Methods: A cross-sectional descriptive correlational design was utilized. Patients were recruited from outpatient clinic at KAUH in Jeddah, Saudi Arabia. A convenience sample of 208 HF patients. The Dutch Heart Failure Knowledge Scale (DHFS) and the European Heart Failure Self-Care Behavior Scale (EHFSCBs) were used to measure the main study outcomes. Participants were recruited from heart failure outpatient clinics at KAUH from January 31 – May 17, 2021.

Results: 63.9% of participants were male, 49% were over 61 years old and 30.8% of the participants were not educated. 55.8% of the participants had an adequate level of knowledge about HF disease and 57.2% had a good level of self-care adherence. The mean total HF knowledge score DHFS was 8.58±3.08 out of 15 and the self-care adherence score EHFSCBs was 28.97±5.61 out of 60. A significant positive moderate correlation existed between disease knowledge and self-care adherence.

Conclusion: Disease knowledge was adequate in more than half of the participants and selfcare adherence was good. This study has shown a relationship between disease knowledge and self- care adherence, which means that a high level of HF knowledge was associated with improved self-care adherence.



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Biography

Salha Refaei is a passionate and results-oriented Nursing Educator with over 15 years of experience in critical care and cardiac nursing. Currently, she educates and trains nurses at King Abdullah Medical Complex in Jeddah, Saudi Arabia. Salha holds a master's degree in nursing (Medical-Surgical) and is a published author in critical care and cardiac nursing research. Her dedication lies in empowering nurses and improving patient outcomes.

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Dharani Swarna Deiveegan¹, Muhammad Subhan² and Ruqiya Bibi³

¹K.A.P. Viswanatham Government Medical College, The Tamil Nadu Dr. M. G. R. Medical University, India ²Allama Iqbal Medical College Lahore/Jinnah Hospital Lahore, Pakistan

The presence of both Atrial Fibrillation and Valvular Heart Disease is confronted to a significant extent in a clinical setting and therefore needs to be explored in detail. Although the use of anti-coagulants is commonly employed in patients with AF to reduce the risk of stroke and blood clots, the additional presence of VHD creates a challenging situation in the clinical management of a patient and the use of anti-coagulants. The objective of this review is to provide clinicians with a compendious overview to enable evidence-based decision making in the management of patients with concurrent AF and VHD. This review has utilized the existing guidelines and recommendations put-forth by distinguished associations of cardiologists and analyzed the findings of various studies involving the use of anti-coagulants in patients with AF and VHD and its associated outcomes. The AF and VHD could independently develop in a patient, or certain VHD including valve replacement could lead to the development of Atrial Fibrillation.





Vitamin K Antagonist (Warfarin) and new Direct/Novel Oral Anti-Coagulants (Dabigatran, Rivaroxaban, Apixaban, Edoxaban) are the commonly employed anti-coagulants in the treatment of AF and VHD. In patients with AF, irrespective of type of VHD, risk of stroke

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and bleeding should be assessed with tools such as CHADS2 VASc (ACC/AHA/ACCP/HRS guidelines) and HAS-BLED scores, respectively. Increasing in stroke risk favor the use of anti-coagulant while increase in bleeding risk discourages the use. Increase in either score favors the use of VKA over DOAC due to the feasibility of rigorous monitoring of INR and dose adjustments.

The EHRA classifies AF patients with VHD as patients requiring vitamin K antagonists or NOACs based on the specific VHD type. Recent studies favor the use of DOAC over VKA in patients with AF and AF with low-risk VHD due to improved outcomes such as reduction of SSE, MI, ICH and benefits such as less variable therapeutic index, decreased drug interaction and easy monitoring. In high risk VHD such as mitral stenosis and artificial heart valve replacement, DOAC is not recommended because of the limited clinical trials conducted with DOAC in this sub-group and adverse effects produced by the attempted clinical trials such as the RE-ALIGN study.

Table 1: Recommendations in patients with AF and VHD

| AF and VHD, except Mitral stenosis and | Use of CHA2D2VASc, HAS-BLED Score. | |
|---|--|--|
| Artificial heart valves | Use of NOAC is recommended if feasible | |
| A F and Mitral stanges and Artificial Heart | Use of CHA2D2VASc, HAS-BLED Score. | |
| valves | Use of Vitamin K antagonist is recommended | |

The benefits NOAC have over Vitamin K antagonist could be considered as a reason to undertake clinical trials analyzing their efficacy and safety even in high-risk patients. Clinical trials could be conducted focusing on a single type of NOAC drug usage in patients with AF and single type of VHD. Even if a single NOAC drug is proven to be safe and effective in high-risk patient, it would provide a wider option for the treating physicians, especially in patients with factors making Vitamin K antagonist not ideal, harmful and other alternatives for anti-coagulants is required.

Abbreviations used:

AF- Atrial Fibrillation, VHD- Valvular Heart Disease, VKA- Vitamin K Antagonist, DOAC-Direct Oral Anticoagulants, SSE- Stroke and Systemic Embolism, MI-Myocardial Infarction, ICH- Intra Cranial Hemorrhage

Biography

Dr. Dharani Swarna Deiveegan, a 2023 MBBS graduate from KAP Viswanatham Government Medical College, India, had graduated her high school with first class from Alpha Wisdom Vidyasharam senior secondary school in 2016. Passionate about journalism, she served as a junior journalist in school before acing India's NEET and securing admission to a government medical college. Throughout college, Dr. Deiveegan actively



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engaged in medical conferences, quiz programs and health camps, also serving as a student ambassador for Elsevier and as an Academic Secretary in college council. Her international exposure includes participation in Model UN conferences. Notably, she has hosted Medicine Update 2019, conducted by API, Tiruchirappalli branch and other medical events. As a student member of the Rotary Club of Tiruchirappalli, she devoted time to volunteering. An accomplished writer, she had authored a bestselling fiction novel. Currently, preparing for USMLE Step 2 and Step 3, Dr. Deiveegan serves as a duty doctor in her hometown's Maternity and Diabetic clinic, showcasing a dedicated passion for medicine, academia and literature.

Research experience:

Dr. Deiveegan had published a systemic review titled, Diabetes Mellitus and Its Role in the Development and Progression of Atrial Fibrillation in IJPPR. She has several other publications under peer review process such as systemic reviews on cardiac sarcoidosis, bioelectronic in chronic kidney disease, a case report on Varicella associated thrombocytopenia and so on. She is currently a part of two meta-analysis based on Pediatric headache and Biomarkers of cardiovascular risk. She has co-authored the article and abstract for the upcoming PMPH and BSBE conferences and is set to take part in them.



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Sanjeev Kumar Chandra and Bhan Meena

SMS Medical College, India

Introduction: The detrimental outcomes of right ventricular pacing on left ventricular electromechanical function ultimately result in heart failure, a phenomenon termed pacemaker-induced cardiomyopathy (PICMP).

Our study aimed to assess the Effects of cardiac pacemakers on left ventricular volumes, biventricular functions and predictors of pacing-induced left ventricular dysfunction (PIVD).

Materials and methodology: This was a prospective, non-randomized and single-arm study of 75 consecutive patients without structural heart disease presented for permanent pacing. Left ventricular volumes and biventricular function were assessed with 2D & Full-volume 3D echocardiography done before pacemaker implantation, at 7 days and 6 months together with GLS. Patients were followed to detect the incidence of PIVD and PICMP with their predictors and risk factors.

Result: A total of 75 patients were enrolled. Out of them, 20 patients have a decline in LVEF while 55 have no decline in LVEF. There was a significant difference shown in EDV, SV, HR, COP, EF and GLS in pre vs post pacing 7 days. While only ESV, SV, COP and EF have significantly changed in post-pacing 6 months compared to 7 days. All the parameters were significantly changed in 6 months compared to the baseline.

Twenty patients (26.67%) developed LV systolic dysfunction; of these, 15 (20%) developed PIVD and 5 (6.67%) developed PICMP. Right ventricular functions like TAPSE (tricuspid annular plane systolic excursion), FAC(fractional area change) and S' velocity (Tissue Doppler systolic velocity) were significantly different during the 6-months compared to baseline but not at post-pacing 7days. Pre-implantation GLS was significantly lower in the 5 patients who subsequently developed PICMP, as compared to those who developed PIVD and the preserved EF group ((mean GLS -17.02 vs. - 19.27; p<0.05). A reduction of baseline GLS by 15% or more in 1 week was associated with the development of PIVD and PICMP (p = < 0.05). A



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wider native QRS complex, pre-implantation GLS and VP% were associated with PIVD and PICMP (p<0.05).



Figure 1. Comparison between the three studied groups according to changes in GLS in each group

Conclusion: The negative effects of pacing after implantation may occur shortly after and are more common than previously reported, due to sensitive tools like 3D echocardiography. RV pacing led to a significant drop in LV COP, EF and GLS over the short and long-term duration. While RV function parameters like TAPSE, S'velocity & FAC decreased over a long-term duration (6 months). Pre-implantation GLS, QRS complex width and VP% can predict the development of PICMP and PIVD.

Biography

Dr. Sanjeev Kumar- MD, DM cardiology 3rd-year Senior Resident in SMS Medical College Jaipur.

Active Researcher

Active participation in national as well as international conferences.

Dr. Chandra Bhan Meena – MD, DM Cardiology (AIIMS New Delhi), FSCAI(USA), FESC, FACC, MAPHRS, Senior consultant & Senior professor department of cardiology, SMS Medical College Jaipur.

- Active Researcher and good clinician
- Articles published in more than 30 journals
- · Participated in more than 50 national and international cardiology conferences
- Chairperson in more than 30 conferences
- · As a speaker at more than 20 conferences national and international
- Ex-secretary CSI Rajasthan

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K. V Charan Reddy', Rahul R. Gupta', Rajesh Matta' and Shantesh Kaushik²

¹Department of Clinical & Interventional Cardiology, Apollo Hospital, India ²Department of Cardiovascular and Thoracic Surgery, Apollo Hospital, India

Scope: Transcatheter aortic valve replacement (TAVR) has become a widely accepted modality in intermediate and high surgical risk patients with symptomatic severe AS. However, this procedure is often difficult in a significant number of patients due to various levels of anatomic complexities. The procedure requires both extensive preoperative work-up and adaptive intraprocedural planning by the heart team.

Objective: Snare-assisted TAVI procedure in severely calcified aortic valve and ascending aorta, is often challenging, necessitating a change in approach when encountered with seemingly insurmountable technical challenge. This case also highlights the emphases on planning and flexibility in the thought process, needed to safely complete the procedure.

Results: Here, we present a challenging case of TAVR which required a Goose-neck snare, when all other techniques failed to safely deliver the self-expanding EVOLUT-R valve. This case also highlights both the limitations and the opportunities the current hardware and technologies present in negotiating tricky situations.

Method Used: A 78-year-old female presented with DOE. TTE showed tricommmisural, heavily calcified aortic valve with indexed area of 0.56 cm²/m² and Peak and mean gradients of 97 mm and 58 mm Hg respectively. TAVR was attempted using 26 mm EVOLUT R valve. It was not successful probably due to valve delivery system interaction with calcification at the STJ and resultant bias of the valve along the outer curvature of the aorta, preventing the valve advancement. Other techniques such as changing the delivery system orientation by traction to correct the commissural alignment, or using stiffer wire (wire escalation), such as Lunderquist[™] Extra-Stiff Wire, instead of other less stiff wires or a buddy peripheral balloon in the arch to redirect the THV delivery system, were also attempted without much success.

As a last resort, we attempted snare-assist or 'chaperone' Technique, wherein a 35mm Goose

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Neck Snare was placed through a 6 Fr catheter from the left femoral artery access. Thereafter a wire was placed and Amplatz Left (AL) catheter through the Goose Neck Snare parked in the ascending aorta. THV delivery system was then advanced over the stiff wire. When the nose cone of the THV delivery system reached the calcified sino-tubular junction (STJ), the Goose Neck Snare was tightened to make it more coaxial to the aortic valve and away from the calcified STJ. Finally, the Goose Neck Snare was loosened from the delivery catheter and brought down to the descending aorta so as not to interact with THV deployment. Postdeployment echocardiography confirmed good valve placement with only a mild aortic paravalvar leak with reduction in trans-aortic gradient to a mean of 6 mm of Hg.

Conclusions: Patient recovered well and was discharged three days later without any vascular complications. This case illustrates the importance of planning and anticipation with constant evolution in strategy when facing some seemingly insurmountable obstacles.

Biography

Dr. Charan Reddy is working as Consultant and Associate Professor in the Department of Interventional Cardiology at Apollo Group of Hospitals, Navi Mumbai, India. He Has 8 years of experience in the area of Interventional Cardiology. Dr. Charan has done MBBS, MBA, MD and DNB in Cardiology. Dr. Charan has presented his work in various national/International conferences. He has published more than 50 research articles and 12 text book chapters. He has received several gold medals for his academic and research achievements.



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Masoumeh Hajvali¹, Sahar Adabi² and Ali Rezaee¹

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Pervasive Healthcare systems are breeding rapidly and distributed systems such as fog, cloud and IoT have made it possible for these systems to scale extensively in geographical and administrative. These modern systems need to sustain interoperability, reliability, availability and response-time as the number of mobile users increases on a daily basis. Not with standing that remarkable research efforts have been conducted for the architecting of such systems, there is a certain obligation toward the design of a reference architecture for the domain to constitute the main pillars of the aforementioned non-functional requirements.

This paper presents a hybrid architecture for pervasive healthcare systems with native support for node mobility in IoT and fog layer with full interoperability and full reliability cloud services. The proposed architecture extensively reuses the commonly used technologies such as OpenStack. Graph transformation was used as the formal foundation for transforming the models and expressing operational semantics of the proposed architecture, which allowed us to perform rigid verification of fundamental operational rules. It also enabled the possibility of using the proposed architecture as a reference architecture with formal conformity verification on adopted architectures. Furthermore, the Architecture Trade-off Analysis Method (ATAM) was utilized to evaluate different scenarios in the proposed architecture. Both formal verification and ATAM-based evaluations proved that the proposed architecture is competent and eligible for healthcare systems.



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Biography

Masoumeh Hajvali is a scientific researcher in Distributed Systems Laboratory at Department of Computer Engineering and lecturer in Islamic Azad University in Tehran, Iran. Masoumeh has a bachelor's and master's degree in computer engineering. She is currently graduate of her Ph.D. degree at Department of Computer Engineering from the Science and Research Branch, Islamic Azad University, Tehran, Iran. Her research interests include, Internet of Things (IoT), Fog and Cloud, software architecture, smart healthcare systems and formal modelling and verification.

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Stem cell (SC)-based therapy has been considered as a promising option in the treatment of is-chemic heart disease. The formation of new cardiomyocytes within the injured myocardium has not been conclusively demonstrated. Consequently, the focus of research in the field has since shifted to SC-derived paracrine factors, including cytokines, growth factors, mRNA and miRNA. Notably, both mRNA and miRNA can enter into the extracellular space either in soluble form or packed into membrane vesicles. SC-derived paracrine factors have been shown to suppress inflammation and apoptosis, stimulate angiogenesis and amplify the proliferation and differentiation of resident cardiac SCs (CSCs). Such features have led to exosomes being considered as potential drug candidates affording myocardial regenera-tion. The search for chemical signals capable of stimulating cardiomyogenesis is ongoing despite continuous debates regarding the ability of mature cardiomyocytes to divide or dedifferentiate, transdifferentiation of other cells into cardiomyocytes and the ability of CSCs to differentiate into cardiomyocytes. Future research is aimed at identifying novel cell candidates capable of differentiating into cardiomyocytes. The observation that CSCs can under-go intracellular development with the formation of "cell-in-cell structure" and subsequent release of transitory amplifying cells with the capacity to differentiate into cardiomyocytes may provide clues for stimulating regenerative cardiomyogenesis.

Indeed, human SC-based therapy derivatives are extremely attractive for therapeutic development because they have direct pharmacologic utility in clinical applications, unlike any other adult cells. The human SC as a special entity is emerging as a new type of potential

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therapeutic agent of cellular entity in cell-based regenerative medicine, because human SC-based therapy derivatives have the potential for human tissue and function restoration that the conventional drug of molecular entity lacks.

Biography

Sergey Suchkov was born in the City of Astrakhan, Russia, in a family of dynasty medical doctors. In 1980, graduated from Astrakhan State Medical University and was awarded with MD. In 1985, Suchkov maintained his PhD at Sechenov University and Institute of Medical Enzymology. In 2001, Suchkov maintained his Doctor Degree at the National Institute of Immunology, Russia.

From 1989 through 1995, Dr. Suchkov was a Head of the Lab of Clinical Immunology, Helmholtz Eye Research Institute in Moscow. From 1995 through 2004 - a Chair of the Dept for Clinical Immunology, Moscow Clinical Research Institute (MONIKI). In 1993-1996, Dr. Suchkov was a Secretary-in-Chief of the Editorial Board, **Biomedical Science**, an international journal published jointly by the USSR Academy of Sciences and the Royal Society of Chemistry, UK.

At present, Dr. Sergey Suchkov, MD, PhD, is:

- Professor and Vice-Director of the Institute for Biotech & Global Health of RosBioTech and Pro-fessor, A.I.
 Evdokimov Moscow State University for Medicine & Dentistry (MGMSU), Russia;
- Secretary General, United Cultural Convention (UCC), Cambridge, UK.

Dr. Suchkov is a member of the:

- New York Academy of Sciences, USA
- American Chemical Society (ACS), USA
- American Heart Association (AHA), USA
- European Association for Medical Education (AMEE), Dundee, UK
- EPMA (European Association for Predictive, Preventive and Personalized Medicine), Brussels, EU
- ARVO (American Association for Research in Vision and Ophthalmology)
- ISER (International Society for Eye Research)
- Personalized Medicine Coalition (PMC), Washington, DC, USA



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Sergey Suchkov^{1,2,3}, Noel Rose⁴ and Aleks Gabibov⁵

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Catalytic Abs (catAbs) are multivalent immunoglobulins (Igs) with a capacity to hydrolyze the antigenic (Ag) substrate. In this sense, proteolytic Abs (Ab-proteases) represent Abs to provide proteolytic effects. Abs against Cardiac Myosin (CM) with proteolytic activity exhibiting targeted cleavage of CM molecule are of great value to monitor stages of autoimmune inflammation in patients with autoimmune myocarditis (AIM) and persons-at-risk.

Meanwhile, AIM can be defined as the autoimmune inflammatory process affecting the muscular tissues of the heart (myocardium). And then is being transformed in a stepwise manner into dilated cardiomyopathy (DCM).

New targeted therapies for autoimmune and inflammatory diseases (including AIM) would require greater understanding of a patient or a person-at-risk to get the therapy personalized for either of those subsets, for specific biomarkers and the targets. In this sense, the identification and implementation of diagnostic, predictive and prognostic biomarkers remain the Holy Grail of platforms, algorithms and protocols which are the crucial for Personalized & Precision Medicine (PPM).

AIM is just one of the chronic organ-specific autoimmune diseases resulting in a destruction of cardiac tissue by different tools, including highly aggressive and destructive autoAbs. A grand role in the development of autoimmunity in AIM, in particular, is the exposure of self-Ags which are encrypted and unavailable to the immune system under physiologic conditions. Meanwhile, CM is one of the most important self-targets in AIM.

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The primary damage in AIM progression and evolution which is mediated by anti-CM auto-Abs to trigger a release of separate and pathogenically valuable cardiac-associated epitopes into the bloodstream. Those epitopes act as sensitizing factors to generate autoAbs more and more, which, in turn, would drive the autoaggression and thus the disease progression.

A subset of patients with AIM and of their symptom-free relatives has circulating heartreactive autoAbs. These Abs are directed against multiple Ags, some of which are strictly expressed in the myocardium (e.g. organ-specific for the heart), others are expressed in heart and skeletal muscle (e.g. muscle-specific). Abs of IgG class, which are shown to be cardiac and disease-specific for AIM, can be used as reliable markers of autoimmune pathogenesis for identifying patients in whom immunosuppression and/or immunomodulation therapy may be beneficial and their relatives at risk.

Moreover, some of these autoAbs may also have a functional role in patients, as suggested by in vitro data as well as by preliminary clinical observations, though further work is in progress to clarify this important issue. And along with canonical Abs, some of the families proven to occur are Abs possessing with catalytic (proteolytic) activity (catAbs or abzymes) and thus to belong to Abs with a feature of functionality! Such Ab-proteases have been found in a series of autoimmune disorders, including multiple sclerosis, autoimmune thyroiditis, etc.

The unique clinical case is a family of Ab-proteases detectable in AIM to cleave CM. Of great interest is the evolution of Ab-associated proteolytic activity at different stages of the disease progression. The activity of Ab-proteases was first registered at the subclinical stages 4-12 months prior to the clinical illness. And the activity of the Ab-proteases revealed significant correlation with scales of autoaggression and the disability of the patients with AIM as well. So, the activity of Ab-proteases and its dynamics tested would confirm a high subclinical and predictive value of the tools as applicable for monitoring protocols.

Of tremendous value are Ab-proteases directly affecting remodeling of tissues with multilevel architectonics (for instance, myocardium or myelin). The translational potential of this knowledge is in the rational design of new diagnostic tools and new targeted therapeutics based on principles of artificial biocatalysts and Biodesign. And thus Ab-proteases can be programmed and re-programmed to suit the needs of the body metabolism or could be de-signed for the development of new catalysts with no natural counterparts.

Ab-based therapeutics have entered the central stage of drug discovery as a result of a major shift in focus of many biopharma companies. So, Ab-protease engineering would offer the ability to enhance or alter their sequence-specific activity to expand the clinical utility of the absolutely new tools.

So, further studies on Ab-mediated CM degradation and other targeted Ab-mediated proteol-ysis may provide biomarkers of newer generations or even NEW BIOMARKER FAMILIES and thus supplementary tools to diagnose, to monitor, to control and to treat and rehabilitate AIM patients at clinical stages and to prevent the disorder at subclinical stages in persons-at-risks to secure the efficacy of regenerative manipulations and for assessing the disease pro-gression and predicting disability of the AIM patients and persons-at-risks.



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Biography

Sergey Suchkov was born in the City of Astrakhan, Russia, in a family of dynasty medical doctors. In 1980, graduated from Astrakhan State Medical University and was awarded with MD. In 1985, Suchkov maintained his PhD at Sechenov University and Institute of Medical Enzymology. In 2001, Suchkov maintained his Doctor Degree at the National Institute of Immunology, Russia.

From 1989 through 1995, Dr. Suchkov was a Head of the Lab of Clinical Immunology, Helmholtz Eye Research Institute in Moscow. From 1995 through 2004 - a Chair of the Dept for Clinical Immunology, Moscow Clinical Research Institute (MONIKI). In 1993-1996, Dr. Suchkov was a Secretary-in-Chief of the Editorial Board, **Biomedical Science**, an international journal published jointly by the USSR Academy of Sciences and the Royal Society of Chemistry, UK.

At present, Dr. Sergey Suchkov, MD, PhD, is:

- Professor and Vice-Director of the Institute for Biotech & Global Health of RosBioTech and Pro-fessor, A.I.
 Evdokimov Moscow State University for Medicine & Dentistry (MGMSU), Russia;
- Secretary General, United Cultural Convention (UCC), Cambridge, UK.

Dr. Suchkov is a member of the:

- New York Academy of Sciences, USA
- American Chemical Society (ACS), USA
- American Heart Association (AHA), USA
- European Association for Medical Education (AMEE), Dundee, UK
- EPMA (European Association for Predictive, Preventive and Personalized Medicine), Brussels, EU
- ARVO (American Association for Research in Vision and Ophthalmology)
- ISER (International Society for Eye Research)
- Personalized Medicine Coalition (PMC), Washington, DC, USA



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Muneeba Rizwan

Fatima Memorial Hospital College of Medicine and Dentistry, Pakistan

Tourette's Syndrome is a condition of nervous system in which patients have sudden, repeated movements called tics. The prevalence of Tourette's syndrome is three times more in males than in females. This can be very challenging for the people suffering from it.A variety of environmental and genetics factors are linked with tics in TS like first degree relatives suffering from it and genes like SLITRK is strongly associated with TS. Factors like low birth weight, intrauterine growth retardation and various infections are also associated with TS. Comorbidities like ADHD, obsessive compulsive disorders and sleep disorders are linked with TS. The aetiology of TS is an damage in sensory and motor component of corticostriatal -thalamocortical circuit and the limbic system. Various pharmacological and non-pharmacological treatments are available for TS. Non-pharmacological options available for TS include various behavioural interventions, counselling, psycoeducation, Cognitive Behavioural interventions, exposure and response prevention, relaxation techniques, deep brain stimulation and habit reversal training. These therapies have shown good efficacy according to Yale Global Tic Severity Scale score (YGTSS). The main pharmacological treatments available for TS include antipsychotics and alpha agonists. Typical (haloperidol, pimozide) or atypical (aripiprazole, risperidone, olanzapine) antipsychotics differ in their side effects, efficacy and tolerance in different age groups of children. Typical antipsychotics have numerous harmful side effects and have limited their use only in severely disabled patients irresponsive to other therapies. The alpha agonists like clonidine, guanfacine and atomoxetine are being used. The most commonly used alpha agonist is clonidine which is also available in the form of adhesive patches. Guanfacine is also used for TS which produces less sedation and hypotension. Botulinum toxin and baclofen is also being used for Tourett's syndrome with other comorbidities.

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Future researchers should be aware of the fact of how treatments available for TS affect the life span of people suffering from it and which treatments should be used with minimum harmful effects. Also, neurologists should apply different techniques for better compliance and treatments to reduce the chances of relapse of tics in TS.

Biography

Dr. Muneeba Rizwan from Fatima Memorial Hospital, Lahore, Pakistan born on 6th April 1997 in Lahore, Pakistan. Since she was a child, she had keen interest in medicine. From the day she started medical school she have been actively involved in research, poster and oral presentations and as a volunteer in orphan houses. Apart from this she have been involved in extracurricular activities like dramatic and debating societies as well. Currently she is working on various research projects. She has 5 research publications as an author and 1 research is in the process of submission as well. She has a great interest in pursuing research on various topics related to medicine as there are countless developments in the field of medicine and it's important for medical professionals to stay up to dated.

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Rabia Hayat², Meina Lu¹ and Xuejiao Zhang¹

¹College of Fisheries, Ocean University of China, China ²College of Marine Life Sciences, Ocean University of China in Qingdao, Pakistan

The evolution of a two-chambered heart, with an atrium and a ventricle, has improved heart function in both deuterostomes (vertebrates) and some protostomes (invertebrates). Although studies have examined the unique structure and function of these two chambers, molecular comparisons are few and limited to vertebrates. Here, we focus on the twochambered protostome heart of the mollusks, offering data that may provide a better understanding of heart evolution. Specifically, we asked if the atrium and ventricle differ at the molecular level in the mollusk heart. To do so, we examined two very different species, the giant African land snail (Lissachatina fulica) and the relatively small, aquatic yesso scallop (Mizuhopecten yessoensis), with the assumption that if they exhibited commonality these similarities would likely reflect those across the phylum. We found that, although the hearts of these two species differed histologically, their cardiac gene function enrichments were similar, as revealed by transcriptomic analysis. Furthermore, the atrium and ventricle in each species had distinct gene function clusters, suggesting an evolutionary differentiation of cardiac chambers in mollusks. Finally, to explore the relationship between vertebrate and invertebrate two-chambered hearts, we compared our transcriptomic data with published data from the zebrafish, a well-studied vertebrate model with a two-chambered heart. Our analysis indicated a functional similarity of ventricular genes between the mollusks and the zebrafish, suggesting that the ventricle was differentiated to achieve the same functions in invertebrates and vertebrates. As the first such study on protostomes, our findings offered initial insights into how the two-chambered heart arose, including a possible understanding of its occurrence in both protostomes and deuterostomes.

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Biography

Dr. Rabia Hayat is a Pakistani national and a recent Ph.D. graduate from Ocean University of China, Qingdao, specializing in developmental biology and molecular biology. With 5-6 years of experience in these fields, Rabia has developed expertise in in situ hybridization techniques and is skilled in isolating and identifying fish organs. She is proficient in conducting plasmid extraction and probe synthesis, along with Immunohistochemical techniques such as antibody, HE, AFOG and immunofluorescence staining, utilizing Zeiss and confocal imaging. Rabia has extensive experience in performing PCR and qRT-PCR analysis. During her Ph.D. journey, she has contributed to multiple publications in reputable journals and has presented at several international conferences. Passionate about advancing the field of neurology, Rabia looks forward to participating in the 5th Global Conclave on Neurology and Neurological Disorders, where she aims to share insights and engage in fruitful discussions.



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Ashraf Youssef², Jan Tack¹, Katayoun Derakhchan² Andre Gabriel², William Spalding², Brian Terreri², Bahij Kreidieh², Peter Kowey³, Amgad Mentias⁴ and Mena Boules²

¹Department of Gastroenterology, University Hospitals Leuven, Belgium ²Takeda Pharmaceuticals International AG, USA ³Jefferson Medical College, Lankenau Hospital and Medical Research Center, Thomas Jefferson University; USA ⁴Clinical Cardiology, Heart and Vascular Institute, Cleveland Clinic, USA

Prokinetic agents, specifically 5-hydroxytryptamine (serotonin) type 4 (5-HT4) receptor agonists, provide symptom relief in chronic idiopathic constipation (CIC). However, the first 5-HT4 agonists, cisapride and tegaserod, were withdrawn from use due to increasing association with serious cardiovascular (CV) events. Approved in the USA in 2018 for adults with CIC, prucalopride is a high affinity 5-HT4 agonist which is 290-fold more selective for 5-HT4 than other 5-HT receptors. No significant effects of prucalopride on cardiac rhythm, blood pressure (BP), heart rate (HR), or electrocardiogram characteristics were observed in animal models. Two phase 1 studies, including a thorough QT (TQT) study, evaluated prucalopride CV safety and found no significant effects on HR, QT interval, or cardiac repolarization at therapeutic (2 mg) or supratherapeutic (10 mg) doses. Among nearly 2500 patients with CIC who received prucalopride in phase 3 studies, there were no concerns based on analyses of CV adverse events, electrocardiogram parameters, HR and BP. In two 24-month observational studies, among 2000 patients, small electrocardiogram changes were observed over Ime, which were not clinically relevant. In a real-world study in Europe, among 5715 patients, no increased risk of major adverse cardiovascular events (MACE) was observed with prucalopride versus PEG3350 over at least 12 months. In conclusion, studies to date suggest prucalopride poses no CV safety concern and is a valuable option for a range of patients with CIC.

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Biography

Ashraf Youssef, MD, PhD, DABT, MBA is a physician with master and doctoral degrees in Toxicology. He had more than 30 years of academic and pharmaceutical experience in drug safety. He taught at Egyptian and US universities on clinical and non-clinical toxicology. He has been an invited speaker in multiple conferences since 2002 in the US. He is a reviewer of safety journals and has had multiple publications on product safety, benefit-risk assessment and Pharmacovigilance. Dr. Youssef is currently a functional area lead at Takeda Pharmaceuticals International AG, USA.

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Muhammad Ijaz¹, Nan Xu^{1,2} and Haiyan Shi^{3,4}

¹The Faculty of Medicine, Qilu Institute of Technology, China ²Laboratory of Chinese Medicine Preparation, Shandong Academy of Chinese Medicine, China ³Department of Clinical Pharmacy, The First Affiliated Hospital of Shandong First Medical University, China ⁴Shandong Provincial Qianfoshan Hospital, China

Objective: Traditional Chinese medicine (TCM) plays an important role in the treatment of numerous illnesses. As a classic Chinese medicine, Wendan Decoction (WDD) encompasses a marvelous impact on the remedy of hyperlipidemia. It is known that hyperlipidemia leads to cardiovascular injury, therefore anti-vascular endothelial cell injury (AVECI) may be an underlying molecular mechanism of WDD in the cure of hyperlipidemia. However, there is no relevant research on the effect of WDD on vascular endothelial cells and its pharmacodynamic substances. Therefore, the purpose of this study was to investigate the protective effect of WDD on vascular endothelial cells.

Methods: The chemical constituents of WDD were determined by LC-MS/MS technology. The protective effects of 16 batches of WDD on samples from human umbilical vein endothelial cells (HUVECs) were evaluated. Finally, gray relation analysis (GRA) and partial least squares regression (PLSR) were used to analyze the potential correlation between chemical ingredients and AVECI.

Results: The results indicated that WDD had apparent protective effect on endothelial cells and pharmacological properties in 16 batches of WDD tests were apparently discrepant. The GRA and PLSR showed that trigonelline, liquiritin, hesperidin, hesperetin, scopoletin, morin, quercetin, isoliquiritigenin, liquiritigenin and formononetin may be the active ingredients of AVECI in WDD.

Conclusion: WDD has a protective effect on endothelial cell injury induced by palmitic acid, which may be related to its component content. This method was suitable for the search of active components in classical TCM.

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Figure. The inhibition rate of PA extracted from HUVEC. The results were derived from three independent experiments performed in quintuplicate. Results are expressed as mean ± SD (n=6). Compared with blank group, **P<0.01, ***P<0.001.

Biography

Dr. Muhammad Ijaz, from Pakistan, graduated from Shandong University with a Ph.D. in Pharmacology. Currently, he is working as an associate Professor of Pharmacology at Qilu Institute of Technology. His main research interests include anti-cancer study and antihyperlipidemic study. He has published 12 Sci research papers and review articles in different well renowned international core Journals with high impact factors. In 2020, he was appointed as the Principal at the Apex college of Pharmacy, Pakistan. Shandong University awarded him the 'Outstanding Graduate 2017 Shandong University International Student' and '2019-2020 Winner of Shandong University Distinguished International Graduate Student Scholarship'. Moreover, He has published several articles on the vital 'the belt and road' initiative in China Daily and other print media forums. He has published an article on 'Life in China'and got third prize in 'My journey in SDU' writing/photo contest held by the International School, Shandong University. While being active in research, he has actively participated in the co-curricular activities. He enthusiastically participated in International Sports Gala and won the title of 'Champions' in the game of cricket.

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Vandna Arora and S K Singhal

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Background: Tuberous sclerosis is an autosomal dominant neurocutaneous disorder characterized by hamartomaformation in various organ systems leading to highly variable clinical presentation. These patients pose a challenge to anesthesiologists due to multisystem involvement.

Case presentation: Herein, we report the successful anesthetic management of a 25-yearold parturient with tuberous sclerosis who underwent an emergency cesarean section in view of cephalopelvic disproportion. She had a seizure disorder, bilateral renal angiomyolipomas, angiofibroma over the cheeks, periungual fibroma on the right toe and nodular lesions near the base of the tongue and oropharynx. We opted for regional anesthesia to avoid airway instrumentation, drug interaction and renal insult.

Conclusion: Anesthetic management of tuberous sclerosis depends upon the extent and severity of the involvement of various organs. Careful assessment, thorough evaluation and preoperative planning are crucial for dealing with the difficulties and complications encountered during the management of these cases.





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Katsuhiko Oda, Makoto Takahashi, Naoya Terao, Rina Akanuma, Takahiko Hasegawa and Satoshi Kawatsu

Department of Cardiovascular Surgery, Iwate Prefectural Central Hospital, Japan

The Endologix[®] AFX[®] (Endologix, Inc., Irvine, CA, USA) endovascular abdominal aortic aneurysm (AAA) graft systems have a unique unibody structure suitable for narrow aortic bifurcations in AAAs.¹ However, since 2017, the Food and Drug Administration has issued several safety warnings against its routine use for AAA treatment due to type III endoleaks (last updated: May 17, 2023). We encountered two fusiform abdominal aortic aneurysm cases with delayed AFX[®] endograft migration over 4 years after placement. These cases showed shortening and slight angulation of the main body in the anterior-posterior direction. We speculate that the potential mechanism relates to the AFX[®] portion that is easily shortened at the bifurcation of its stent structure. This portion may contribute to delayed migration following slight angulation of the main body. Preoperative three-dimensional-computed tomography should be performed from both the anterior-posterior and lateral views. Although the AFX[®] is useful for narrow bifurcations, its indications should consider the patient's anatomy.

Biography

Dr. Katsuhiko Oda is a Chief Director in Department of Cardiovascular Surgery and Cardiovascular Center, Iwate Prefectural Central Hospital, Morioka, Japan and a Clinical Professor at Tohoku University School of Medicine, Sendai, Japan. He was born in Morioka, Japan, in 1966. He graduated from Tohoku University School of Medicine and passed Examination of National Board in 1991. He got a doctor's degree from Tohoku University Graduate School of Medicine in 1998. His academic interests include coronary artery bypass grafting, acute aortic dissection, TEVAR and EVAR. He is married and grew two daughters.

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Lisa Bagnall¹, Oliver Grundmann², Marilyn Teolis¹ and Saun-Joo L. Yoon³

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Aims: Cancer-induced cachexia affects up to 80% of patients with cancer. Patients with cancer-induced cachexia may experience cardiac wasting through inter-tissue and interorgan crosstalk. This review aims to identify evidence of cancer-induced cardiac cachexia in human and non-human models by examining the contribution of biomarkers and other factors leading to the development and progression of cardiac cachexia.

Methods: A systematic review included publications from 2011 to 2021 with eligibility criteria of randomized controlled trials, retrospective, prospective, descriptive animal, cadaver and human studies. Fifteen animal and four human studies met the eligibility criteria and were included in this review.

Results: Four common biomarkers were identified in animal studies with upregulated gene expression, namely Tumor Necrosis Factor-alpha (TNF- α), Atrogin-1, Muscle RING-finger protein-1 (MuRF1) and Interleukin-6 (IL-6). The upregulation of Atrogin-1, noted in 5 out of 15 studies, facilitated cardiac atrophy, cardiac wasting and remodeling by ubiquitinating proteins in the heart, marking them for degradation. The upregulation of IL-6, TNF- α and MuRF1 caused cardiac muscle breakdown and led to decreased intraventricular septal wall thickness, decreased ejection fraction, heart rhythm disturbances, heart failure and death. Atrophied hearts showed decreased myocyte size, decreased sarcomeric proteins and an increase in the b-myosin heavy chain, which is indicative of muscle atrophy. In one human study, 103 subjects with newly diagnosed stages of II-IV malignancies were classified as either non-cachectic, pre-cachectic, or cachectic. Non-cachectic cancer patients showed the least number of cardiovascular symptoms. Those with pre-cachexia and cachexia had the most cardiac findings, such as high-grade premature ventricular contractions (PVCs), hypertension and either new or progressive chest pain. Cardiac wasting (measured by

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heart weight and ventricular wall thickness) was examined in 219 deceased patients using retrospective analysis. Of these, 177 were diagnosed with cancer and 42 patients had non-cancer non-cardiovascular diagnoses. The diagnoses for the 177 cancer patients included 58 lung cancer, 60 pancreatic and 59 non-pancreatic gastrointestinal cancers. Of those, 54 (30.5%) showed cancer-associated cachexia and had a significantly lower heart weight compared to non-cachectic patients (p <0.001) and patients with non-cancer and non-cardiovascular diagnoses (p <0.05).

Conclusion: The cardiac effects associated with cachexia-induced biomarkers showed reduced heart weight, function and overall quality of life. Despite the extensive search, we found only a limited number of high-quality studies. Further studies are needed to determine if targeted treatments can effectively block the upregulation of various genes and cytokines that initiate and facilitate cancer-induced cardiac cachexia.

Biography

Dr. Lisa Bagnall received her BSN From Salisbury University and her MSN and PhD in Nursing from University of Phoenix. She has extensive experience in cardiovascular ICU, trauma ICU and ER nursing. She was an ACLS instructor for several years and taught paramedics, nurses and physicians. After receiving her Ph.D. in 2017, she worked as a University of Florida professor for the college of nursing. She currently works for the Veterans' Health Administration in Tampa Florida.

Her recent publications have focused on curriculum redesign strategies, simulation outcomes, venomous snakebite treatment (extension of her masters' project) and cancer-induced cardiac cachexia. Her innovative mapping technique helped to elicit the most common upregulated biomarkers in a set number of studies found over a 10-year period. Her leisure time is spent training and showing horses, faceting gems for highend jewelry designs and competing in archery.

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Heshma Al-Ruwaily, Roshaida Abdul Wahab and Therese Coleman

Diabetes Complications Research Centre, Conway Institute, University College Dublin, Ireland

Aim: The association between bariatric surgery outcomes and depression remains controversial. Many patients with depression are not offered bariatric surgery due to concerns that they may have suboptimal outcomes. The aim of this study was to investigate the relationship between baseline World Health.

Materials and Methods: Organization-Five Wellbeing Index (WHO-5) and percentage total weight loss (%TWL) in patients after bariatric surgery.

All patients were routinely reviewed by the psychologist and screened with WHO-5. The consultation occurred 3.5±1.6 months before bariatric surgery. Body weight was recorded before and 1 year after surgery. A total of 45 out of 71 (63.3%) patients with complete WHO-5 data were included in the study. Data analysis was carried out with IBM SPSS Statistics (version 27) to determine the correlation between baseline WHO-5 and %TWL in patients having bariatric surgery.

Results: Overall, 11 males and 34 females were involved with mean age of 47.5 ± 11.5 and BMI of 46.2 ± 5.5 kg/m2. The %TWL between pre- and 1-year post-surgery was $30.0 \pm 8.3\%$ and the WHO-5 Wellbeing Index mean score was 56.5 ± 16.8 . We found no correlation between %TWL and the WHO-5 Wellbeing Index (r=0.032, p=0.83).

Conclusion: There was no correlation between the baseline WHO-5 Wellbeing Index and %TWL 1-year post-bariatric surgery. Patients with low mood or depression need to be assessed and offered appropriate treatment but should not be excluded from bariatric surgery only based on their mood.

Biography

Dr. Heshma Alruwaily, Family & Obesity Medicine Consultant at KFMC, Obesity, Endocrinology and Metabolism Department. Clinical Fellowship in Obesity Medicine and Obesity Research at University College Dublin, Ireland. St. Vincent University Hospital.

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Objectives: Atherosclerosis, which is one of the leading causes of death all over the world, can create major or minor thromboembolic complications with the exponentially increasing diabetic status. Despite all the studies, the mechanism by which endothelial damage in atherosclerosis is triggered with diabetic setting is still not fully understood.

Patients and Methods: In this study, tissue factor (TF), which is thought to act together in the formation of VEGF and coagulopathy in diabetic atherosclerotic patients, may be an important indicator in this regard, a total of 100 cases who were undergone OPCAB (off-pump coronary artery bypass) which were at same risk group examined by dividing into diabetes status. Early postoperative process and biochemical parameters analyzed in terms of TF and VEGF-A levels measured before and after the operation.

Results: TF and VEGF expression of the TIDM group were statistically high compared to non-diabetics. Significantly longer hospital stays with changes in TF and VEGF were found in patients in the diabetic group compared to pre- and postoperatively, respectively; TF (95% CI: 0.879-0.992; p=0.025), VEGF (95% CI: 0.964-0.991; p=0.001) and hospital stay (95% CI: 2.24-10.491; p=0.0001).

Preoperatively measured CT (carotid intima-media thickness) was higher in diabetics and was significantly associated with AF (r = 0.873).



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Surgical team and protocols were common and OPCAB procedures were routinely applied to all patients in our clinic. No minor or major events were observed in any of the cases.

Conclusion: TF and VEGF values in patients with diabetic atherosclerosis may be important in the early detection of thromboembolic complications.



Figure 2. TF and VEGF-A levels in diabetic and non-diabetic patients with atherosclerosis. Data are expressed as mean ± standard deviation. *p<0.001: Significantly different from the NonDM group, ▲p<0.001: Significantly different from the IDDM group. ns=non-significant mean comparison, n=significant mean comparison.

Biography

Prof. Tijen Alkan Bozkaya, M.D.*, PhD**. İstanbul, Yeditepe University, Dept of Cardiovascular Surgery* Cardiovascular Surgeon and Pediatric Heart Surgeon EXPERIENCE: from 1999 to date in Cardiovascular Surgery SPECIALTY AREAS: Cardiovascular Surgery and Pediatric Heart Surgeon

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EDUCATION:

1992 Istanbul University, Istanbul Faculty of Medicine

1999 Cardiovascular Surgery residency training programme at Istanbul University, The Institute of Cardiology

2000-2009 American Hospital, Dept of Cardiovascular Surgery as a staff surgeon

2009-2011 Istanbul Bilim University, Dept of Cardiovascular Surgery as a Asist. Prof.

2011 Upper-specialty on Pediatric Cardiac Surgery

2012-2015 İstanbul Medipol University, Dept of Cardiovasc Surgery as a Asist. Prof.

2015 American Hospital, Dept of Cardiovascular Surgery as a staff surgeon

2016 Apr, Associate Professor at Koç University Hospital, Dept of Cardiovascular Surgery

2016 to March 2021 at Koç University Hospital, Dept of Cardiovascular Surgery as a Assoc. Professor

2016-2021 Biochemistry PhD programme at Istanbul Medipol University – PhD** degree with thesis about Atherosclerosis Biochemistry.

October 2022, Yeditepe University Hospital, Dept of Cardiovascular Surgery as a Professor, M.D., PhD.
3rd Global Conclave on

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Severity of illness scores—Acute Physiology and Chronic Health Evaluation, Simplified Acute Physiology Score and Sequential Organ Failure Assessment—are current risk stratification and mortality prediction tools used in intensive care units (ICUs) worldwide. Developers of artificial intelligence or machine learning (ML) models predictive of ICU mortality use the severity of illness scores as a reference point when reporting the performance of these computational constructs.

The objective of this study is to review the performance of Machine Learning models versus Severity of Illness Scores in predicting Intensive Care Unit (ICU) mortality.

Methods: We reviewed 47 ML models based on 7 types of algorithms and compared them with 3 types of the severity of illness score models. We assessed the models' characteristics, synthesized the results, meta-analyzed the discriminative performance of the ML and severity of illness score models and performed tests of heterogeneity within and among studies.

Results: Of the models reviewed, 20% were found to have a low risk of bias and applicability in model development, 35% performed external validation, 45% reported on calibration, 60% reported on classification measures and 20% addressed explainability. The discriminative performance of the ML-based models, which was reported as AUROC, ranged between 0.728 and 0.99 and between 0.58 and 0.86 for the severity of illness score–based models. We noted substantial heterogeneity among the reported models and considerable variation among the AUROC estimates for both ML and severity of illness score model types.

Conclusions: ML-based models can accurately predict ICU mortality as an alternative to traditional scoring models. Although the range of performance of the ML models is superior to that of the severity of ilss score models, the results cannot be generalized due to the high

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degree of heterogeneity. When presented with the option of choosing between severity of illness score or ML models for decision support, clinicians should select models that have been externally validated, tested in the practice environment and updated to the patient population and practice environment.

Biography

Cristina Barboi practicing anesthesiology, critical care physician and research scientist at Indiana University School of Medicine, in Indianapolis.

She have acquired a master's degree in clinical informatics and she have recently completed a Patient and Population Health Informatics research fellowship. In her role as research scientist, she is the representative and liaison for the Multicenter Perioperative Outcomes Group program. Her primary research interest is predictive analytics, especially as it applies to postoperative outcomes. She focused on identifying the relationship between intraoperative hemodynamics and post-operative mortality and in developing perioperative predictive models.



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