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2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

HOTEL ROMA AURELIA ANTICA,
JULY 16-17, 2025, ROME, ITALY

ICCCM-2025
JULY 16–17, 2025 | Rome, Italy

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ACCREDITED PROVIDER
#778533

2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

REGISTRATIONS & OPENING REMARKS (09:00-09:30)

KEYNOTE/PLENARY SESSION

09:30-10:10

Cardiovascular Disorders and disease: In Ischemic Heart Disease, Reduced Sensitivity to Pressure at the Sternum Accompanies Lower Mortality after Five Years: Evidence from a Randomized Controlled trial

Soeren Ballegaard, Nordic Heart Center Ltd, Denmark

10:10-10:40

Overcoming Relapse: Determinants of Smoking Cessation Outcomes

Tijen Acar, Kafkas University, Turkey

GROUP PHOTO REFRESHMENT BREAK @ FOYER (10:40-11:00)

TECHNICAL SESSION-I

11:00-11:25

Inhibition of neuraminidase-1 sialidase activity by interfering peptides impairs insulin receptor activity in vitro and glucose homeostasis in vivo

Amar-Bennasroune, UMR CNRS URCA 7369, France

11:25-11:50

Biomechanical and histological analyses of a multilayer stent in a swine model of suprarenalaortic aneurysm

Allana Tobita, Hospital Israelita Albert Einstein, Brazil

11:50-12:15

PCSK9 directly stimulates Syk, PKCδ, and NF-κB, leading to the activation of cytokines inmonocytes and atherosclerosis progression independently of LDL receptor

Hyun-Duk Jang, Seoul National University Hospital, South-Korea

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12:15-12:40

Novel alternative approaches for cardiovascular diseases

Patricia Daliu, Albanian University Tirane, Albania

12:40-13:05

Hypertension and Atrial Fibrillation: Bridging the Gap Between Mechanisms, Risk, and Therapy

Mahmoud Eldesouky, University of Leicester, UK

LUNCH @ RESTAURANT (13:05- 14:00)

TECHNICAL SESSION-II

14:00-14:25

A systematic review on intravascular ultrasound-guided percutaneous coronary intervention versus angiography-

Oshith Wendakoon, University of Southampton, UK

14:25-14:50

ACE Inhibitors and Angiotensin Receptor Blockers for the Primary and Secondary Prevention of Cardiovascular Outcomes: Recommendations from the 2024 Egyptian Cardiology Expert Consensus in Collaboration with the CVREP Foundation

Ramez Guindy, Ain Shams university, Egypt

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14:50-16:50

Hands-on PPS-Measurement Workshop

Soeren Ballegaard, Nordic Heart Center Ltd, Denmark

REFRESHMENT BREAK (16:50-17:10)

17:10-17:35

Hypoxic preconditioning – a prehabilitation method to reduce perioperative complications inpatients undergoing cardiac surgery by cardiopulmonary bypass

Dhif Ines, First Sechenov university, Mianyang City, Russia

17:35-18:00

The Effects of the Obesity Paradox and In-Hospital and One-Year Outcomes in Patients With ST Elevation Myocardial Infarction (STEMI): Results From a STEMI Registry

Alireza Rai, Yanbian University Hospital, Iran

18:00-18:25

Antihypertensive Potential of Haloxylon graffithii and Exploration of Underlying Mechanistic Pathway

Iram Iqbal, Bahauddin Zakariya University, Pakistan

DAY-1 CONCLUDES

PANNEL DISCUSSIONS

JULY-17
Virtual Presentations

Central European Time

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TECHNICAL SESSION-I

11:00-11:25

Diagnostic value of combined detection of serum lipoprotein a and BNP in patients with heart failure

Chen Hong, Chongqing Hechuan Hongren Hospital, China

11:25-11:50

Trans-catheter aortic valve implantation in a patient with membranous ventricular septal defect, sub-aortic band and double-chambered right ventricle

Hirotsugu-Mitsuhashi, Ayase Heart Hospital, Japan

REFRESHMENT BREAK (11:50-12:10)

12:10-12:35

The Development of an Order Set for Adults Admitted for Acute Heart Failure at a National University Hospital in the Philippines

John-Vincent-Magalong, San Beda University College of Medicine, Philippines

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12:35-13:00

Predictors of The Gut Microbiome In The Development of Hypertension In Patients With Insulin Resistance

Gulshara Abildinova, President Administration Hospital, kazakhstan

LUNCH BREAK (13:00-14:00)

14:00-14:25

Resolution of Trifascicular Heart Block with Effective Closure of Congenital Atrial Septal Defect Followed by Later Coronavirus Disease 2019–associated Cardiac Strain-A Case Report

Yasser Mohammed Hassanain Elsayed, Egyptian Ministry of Health, Egypt

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14:25-14:50

Effect of Physical Exercise on the Lipid Profile in Post-Myocardial Infarction Patients: A Systematic Review

Antonio Beira De Andrade Junior, Uniandrade, Brazil

TECHNICAL SESSION-II

14:50-15:15

IPs from autologous human gingival stem cells and extracellular vesicles: a new tool for cardiac regeneration

Ylenia Della Rocca, D'Annunzio University, Italy

15:15-15:40

Fractal analysis unlocks new potential in xenopericardia for percutaneous aortic valve engineering

Robert Guidoin, Laval University, Canada

15:40-16:05

Cross - sex hormonal replacement: mitochondria as bad boys

Natalia Pavón, National Institute of Cardiology Ignacio Chavez, Mexico

REFRESHMENT BREAK (16:05-16:25)

16:25-16:50

Are the EDMs a factor risk in postmenopausic women?

Elizabeth Lira Silva, National Institute of Cardiology Ignacio Chavez, Mexico

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16:50-17:15

Etiologies of Acute Renal Failure during Mechanical Circulatory Support

Kelsey Gore, Ochsner Health, United States

17:15-17:40

Sleep Apnea and its associated Cardiac Disorders/Implication

Krutarth Pandya, Cleveland Clinic, United States

CLOSING REMARKS

DAY 2 CONCLUDES

ICCCM-2026
MAY 04–05, 2026 | Amsterdam

Upcoming Conference

3rd International Conference on

Cardiology and Cardiovascular Medicine

May 04-05, 2026

Amsterdam, Netherlands

For all Conference Enquires regarding Abstract Submission, Registration :

Dr. Vanga

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2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

July 16-17, 2025 | Rome, Italy

S. Ballegaard,[1*] J. Faber,[1,2] C. Selmer,[1,2,3] F. Gyntelberg,[4] S. Kreiner,[5] B. Karpatschof,[6] T. W. Klausen,[1] A. Hjalmarson,[7] A. Gjedde[2,8,9,10]

[1]Endocrine Unit, Department of Medicine, Herlev-Gentofte University Hospitals, Herlev, Denmark
[2]Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark
[3]Department of Endocrinology, Bispebjerg-Frederiksberg University Hospitals, Copenhagen, Denmark
[4]The National Research Center for the Working Environment, Copenhagen, Denmark
[5]Institute of Biostatistics, University of Copenhagen, Copenhagen, Denmark
[6]Institute of Psychology, University of Copenhagen, Copenhagen, Denmark
[7] Department of Cardiology, Sahlgrenska University Hospital, University of Gothenburg, Sweden
[8]Department of Neuroscience, University of Copenhagen, Copenhagen, Denmark
[9]Translational Neuropsychiatry Unit, Department of Clinical Medicine, Aarhus University, Aarhus, Denmark
[10]Department of Neurology and Neurosurgery, McGill University, Montréal, Québec, Canada

Cardiovascular Disorders and disease: In Ischemic Heart Disease, Reduced Sensitivity to Pressure at the Sternum Accompanies Lower Mortality after Five Years: Evidence from a Randomized Controlled trial.

Background

Autonomic nervous system dysfunction (ANSD) is associated with negative prognosis of ischemic heart disease (IHD). Elevated periosteal pressure sensitivity (PPS) at the sternum relates to ANSD and sympathetic hyperactivity. Two previous observational case-control studies of the effect of reduction of PPS suggested lower all-cause mortality from IHD and stroke. We now used a specific daily, adjunct, non-pharmacological program of reduction of elevated PPS to test the hypothetical association between the intervention and reduced all-cause mortality in stable IHD in a randomized controlled trial (RCT).

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Methods

We completed active (n=106) and passive interventions (n=107) and compared the five-year mortalities. We also compared the five-year individual all-cause mortality of each participant to approximately 35.000 members of the general population of Denmark. Pooling the mortality data from the active group of the RCT with the two preliminary studies, we registered the mortality following active intervention of 1.168 person-years, compared to 40 million person-years of the pooled general population.

Results

We recorded fewer deaths of the active RCT intervention group than of the corresponding control group from the general population (P = 0.01), as well as of the passive RCT intervention group (P = 0.035). Meta-analysis of the three studies together demonstrated reduced 4.2-year all-cause mortality of 60% (P = 0.007).

Conclusion

The test of the hypothetical effect of intervention aimed at attenuation of ANSD accompanied by lowered PPS revealed reduced all-cause mortality in stable IHD.

Biography

Senior Scientist Medical department, Herlev-Gentofte University Hospital, Capital Region, Denmark Area of research. Cardiovascular and autonomic nervou system diagnostics Non pharmacological interventions in autonomic dysfunction in cardiovascular disease, diabetes and stress. Have invented device for measurement of autonomic function and developed a non-pharmacological intervention that reserves autonomic dysfunction and accordingly normalize a broad range of cardiovascular health risk factors which in synergy improves survival for autonomic nervous systsem dysfunction

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Tijen Acar[1], Claire Gallagher[2], Yasemin Gören[3], Bircan Erbas[4] and Adem Özkara[5]

[1]Department of Family Medicine, School of Medicine, Kafkas University, Kars, Turkey

[2]Centre of Epidemiology and Biostatistics, School of Population and Global Health, University of Melbourne, Melbourne, Australia

[3]Department of Family Medicine, Bozüyük State Hospital, Bilecik, Turkey

[4]Department of Public Health, School of Psychology & Public Health, La Trobe University, Melbourne, Australia

[5]Department of Family Medicine, Ankara Bilkent City Hospital, University of Health Sciences, Istanbul, Turkey

Overcoming Relapse: Determinants of Smoking Cessation Outcomes

Tobacco smoking remains a leading cause of global morbidity and mortality, and despite available treatments, relapse rates are high. This study investigates the determinants of smoking cessation outcomes and reasons for relapse among patients admitted to a smoking cessation outpatient clinic in Turkey. Using a mixed-methods design, 179 patients were recruited between May 2016 and May 2017. Quantitative data were collected through patient questionnaires and files, while qualitative insights were obtained via five focus group interviews with 28 patients who relapsed after treatment. Results showed a one-year smoking cessation success rate of 26%. Higher numbers of clinic visits, lower nicotine addiction scores, longer treatment duration, and consistent application of behavioral changes were associated with successful cessation. The primary reasons for relapse identified in focus groups were stress, presence of smokers in the environment, and personal health-related stressors. Multivariate analysis confirmed that higher nicotine dependence increased the likelihood of relapse, while repeated clinic engagement and use of varenicline therapy significantly reduced relapse risk. Qualitative findings emphasized the role of emotional triggers, social influences, and lack of relapse prevention education in smoking reuptake. The study concludes that integrating continuous support, enhancing coping skills, combining pharmacotherapy with behavioral strategies, and providing relapse education may improve long-term smoking cessation outcomes. These findings offer practical insights for clinicians and public health practitioners aiming to design more effective cessation programs.

Keywords: smoking cessation, relapse, behavioral therapy, nicotine addiction, stress management, self-discipline

Biography

Prof. Dr. Tijen Acar is a specialist in Family Medicine with over three decades of clinical, academic, and research experience. Currently a professor at Kafkas University Faculty of Medicine, she has extensively contributed to addiction prevention, tobacco control, and primary care education. She has authored numerous national and international publications, coordinated public health projects, and served in key academic and administrative roles. Prof. Acar is a member of multiple international medical associations and an active speaker at scientific congresses. Her work focuses on holistic care, functional medicine behavioral therapies, and preventive health strategies in both clinical and academic settings.

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July 16-17, 2025 | Rome, Italy

Amar-Bennasroune

UMR CNRS URCA 7369, France

Inhibition of neuraminidase-1 sialidase activity by interfering peptides impairs insulin receptor activity in vitro and glucose homeostasis in vivo

Neuraminidases also named sialidases are glycosidases which catalyze the removal of terminal sialic acid residues from glycoproteins, glycolipids and oligosaccharides. Mammalian Neuraminidase-1 (NEU-1) is involved in regulation of cell surface receptors such as insulin receptor (IR), epithelial growth factor receptor, low density lipoprotein receptor and toll like receptor 4. At the cell membrane, NEU-1 can be associated with the elastin-binding protein and the carboxypeptidase protective protein/cathepsin A to constitute the elastin receptor complex. In this complex, NEU-1 plays a key role in elastogenesis, signal transduction through this receptor and in biological effects of the elastin-derived peptides on atherosclerosis, thrombosis, insulin resistance, non-alcoholic steatohepatitis and cancers. Thus, several research teams are developing inhibitors targeting this sialidase. In a previous study, we developed interfering peptides to inhibit the dimerization and the activation of NEU-1. We then investigated the effects of these peptides on IR activation in vitro and in vivo. Using cellular overexpression and endogenous expression models of NEU-1 and IR, we have shown that interfering peptides inhibit NEU-1 dimerization and sialidase activity which results in a reduction of IR phosphorylation. These results demonstrated that NEU-1 positively regulates IR phosphorylation and activation in our experimental conditions. In vivo, biodistribution study showed that interfering peptides are well distributed in mice. Treatment of C57Bl/6 mice during eight weeks with interfering peptides induces a hyperglycemic effect in our conditions. Altogether, our results indicate that inhibition of NEU-1 sialidase activity by interfering peptides decreases IR activity in vitro and glucose homeostasis in vivo.

Keywords: Extracellular matrix, Neuraminidase-1, Insulin receptor, Interfering peptides, Receptor activation.

Biography

Prof. Amar Bennasroune is teacher-researcher in cell biology at Université de Reims Champagne-Ardenne (France) since 2015. He leads a research group within the laboratory called « Matrice extracellulaire et dynamique cellulaire » (UMR CNRS URCA 7369). His research focuses on the development of inhibitors of neuraminidase 1, a sialidase involved in various pathophysiological contexts such as atherosclerosis and insulin resistance, using several strategies as interfering peptides or natural bioactive molecules extracted from plants.

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2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

July 16-17, 2025 | Rome, Italy

Allana Maryel Tobita[1], Anna Paula Weinhardt Baptista Strazzi[1], Maria Fernanda Cassino Portugal[1], Nelson Wolosker[1], Ricardo Aun[1], Frederico de Lima Jacy Monteiro[1], Erasmo Simão da Silva[2] and Igor Rafael Sincos[1]

[1]Experimental and Surgical Training Center (CETEC), Hospital Israelita Albert Einstein and [2]Universidade de São Paulo (USP), São Paulo, SP, Brazil

Biomechanical and histological analyses of a multilayer stent in a swine model of suprarenal aortic aneurysm

Objectives

To analyze and compare, in an animal model, the treatment of thoracoabdominal aneurysms with multilayer stents and its hemodynamic effects through the biomechanical and histological analysis of the aortic wall in contact with the stent.

Methods

Large White pigs were randomized into two White pigs were randomized into two groups: Stent (n = 6) and Control n = 5 non- stent). All animals were subjected to the creation of a suprarenal aneurysm with a bovine pericardial patch. In the Stent group, a multilayer stent was implanted immediately after aneurysm formation. After four weeks, all animals were subjected to angiographic assessment and intravascular ultrasound, and the stent was explanted before euthanasia for histological and biomechanical analyses.

Results

At histological analysis, the groups did not differ significantly in maximum thickness of the intima ($p = 0.526$) media ($p = 0.129$) or adventitia ($p = 0.662$) . Thrombus formation was observed in 100% of the animals on the intima and media layers of the stented aorta vs. none in the Control group ($p = 0.048$) . At biomechanical analysis, no statistical differences were observed in aortic wall elasticity ($p = 0.158$) , strength ($p = 0.36$) , or thickness ($p = 0.323$)

Conclusion

We identified thrombosis of the aneurysmal sac through the presence of thrombi on the intima of the aorta in 100% of the animals in intima of the aorta in 100% of the animals in the Stent group; as for the biomechanical analysis, this study showed no statistical differences in vessel wall thickness, strength, and elasticity between groups.

Key words: Animal experimentation, Aortic aneurysm, Endovascular procedures, Animal models.

Biography

Dr. Allana Tobita is a vascular and endovascular surgeon with a Master's degree from Hospital Israelita Albert Einstein in Brazil. She is the Director of Clínica Vascular Dra. Allana and founder of Lipedema Care Doctor of Education. Holding a specialty title from the Brazilian Society of Angiology and Vascular Surgery, she is also a speaker for the Sigvaris Group and is recognized as a national reference in modern treatments for varicose veins and lipedema. Dr. Tobita is the founder of the Endolift technique for lipedema and author of the book The Cure of the Single Mother. In addition to her professional accomplishments, she is a proud mother to João Lucas and lives her life as a devoted disciple of Christ.

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Dasom Shin, Soungchan Kim, Jaewon Lee, Hyun-woo Park, Subin Choi, Bon-Jun Koo, Ji-Hoon Yu, Hyo-Soo Kim, and **Hyun-Duk Jang**

Associate Professor / Biomedical Research Institute / Seoul National University Hospital

PCSK9 directly stimulates Syk, PKCδ, and NF-κB, leading to the activation of cytokines in monocytes and atherosclerosis progression independently of LDL receptor

Proprotein convertase subtilisin/kexin type-9 (PCSK9), which degrades low-density lipoprotein receptor (LDLR) and elevates LDL-cholesterol (LDL-C) levels, is used for atherosclerosis treatment. Recently, we demonstrated that PCSK9 interacts with adenylyl cyclase-associated protein 1 (CAP1) that mediates endocytosis and degradation of LDLR. Here, we investigated whether PCSK9 binding to CAP1 induces inflammation directly or independently of LDLR. The direct inflammatory action of PCSK9 is examined in vitro in monocytes and endothelial cells, as well as via an in vivo atherosclerosis animal model. PCSK9 exacerbates atherosclerosis in $LDLR^{-/-}$ mice independently of the LDLR pathway. Here we show that CAP1 is the main binding partner of PCSK9 and indispensable for the inflammatory action of PCSK9, including induction of cytokines, Toll like receptor 4 (TLR4), and scavenger receptors, enhancing the uptake of oxidized LDL. We find spleen tyrosine kinase (Syk) and protein kinase C delta (PKCδ) to be the key mediators of inflammation after PCSK9-CAP1 binding. In human peripheral blood mononuclear cells (PBMCs), serum PCSK9 levels are positively correlated with Syk, PKCδ, and p65 phosphorylation. The CAP1-fragment crystallizable region (CAP1-Fc) shows superior efficacy in mitigating PCSK9-mediated inflammatory signal transduction when compared with the PCSK9 inhibitor, evolocumab.

Keywords: Proprotein convertase subtilisin/kexin type-9 (PCSK9), adenylyl cyclase-associated protein 1 (CAP1), low-density lipoprotein receptor, LDL-cholesterol (LDL-C), inflammation, atherosclerosis.

Publication

Shin D, Kim S, Lee H, Lee HC, Lee J, Park HW, Fukai M, Choi E, Choi S, Koo BJ, Yu JH, No G, Cho S, Kim CW, Han D, Jang HD*, Kim HS. PCSK9 stimulates Syk, PKCδ, and NF-κB, leading to atherosclerosis progression independently of LDL receptor. Nat Commun. 2024 Mar 30;15 (1):2789.

Yang HM, Kim J, Shin D, Kim JY, You J, Lee HC, Jang HD, Kim HS. Resistin impairs mitochondrial homeostasis via cyclase-associated protein 1-mediated fission, leading to obesity-induced metabolic diseases. Metabolism. 2023 Jan;138:155343.

Jang HD*, Lee SE, Yang J, Lee HC, Shin D, Lee H, Lee J, Jin S, Kim S, Lee SJ, You J, Park HW, Nam KY, Lee SH, Park SW, Kim JS, Kim SY, Kwon YW, Kwak SH, Yang HM, Kim HS. Cyclase-associated protein-1 (CAP1) is a binding partner of proprotein convertase subtilisin/kexin type-9 (PCSK9) and is required for the degradation of low-density lipoprotein receptors by PCSK9. Eur Heart J. 2020 Jan 7;41 (2):239-252.

Kim YC, Lee SE, Kim SK, Jang HD*, Hwang I, Jin S, Hong EB, Jang KS, Kim HS. Toll-like receptor-mediated inflammation requires FASN-dependent MYD88 palmitoylation. Nat Chem Biol. 2019 Sep; 15 (9):907-916.

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Biography

Dr. Hyun-Duk Jang, PhD, is an Associate Professor at the Biomedical Research Institute, Seoul National University Hospital, where he has been serving since 2012. Prior to this, he was a Research Professor in Molecular Biopharmaceuticals at Ewha Womans University from 2008 to 2011. She completed his postdoctoral fellowship in Hematology-Oncology at UCLA (2005–2007) and was a visiting student in Immunology at the University of Pennsylvania from 2003 to 2005. His research focuses on biomedical science, with particular interest in translational research and clinical applications.

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2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

July 16-17, 2025 | Rome, Italy

Patricia Daliu

Faculty of Medical Sciences, Department of Pharmacy, Albanian University, Tirane Albania 1001

Novel alternative approaches for cardiovascular diseases

Abstract

Cardivasculare disorder are the leading cause of death in developed countries nowadays. Trimethylamine N-oxide (TMAO) and low-density lipoprotein (LDL) are considered as a novel risk factor for cardiovascular disease. The aim of this study is to provide new alternative approaches since the the bioactivities and therapeutic potential of phytochemicals as a pharmaceutical and nutraceutical have been widely investigated.

For this purpose, a randomized, placebo-controlled, cross-over trial was carried out in 40 patients, to evaluate in vivo the efficacy of a nutraceutical based on polyphenolic extracts of resveratrol prepared from grapes pomace (Vitis vinifera L.) on pro-atherogenic and prothrombotic parameters. The pharmaceutical form of the nutraceutical was in acid-resistant capsules, containing 300 mg of grape pomace, once a day away from meal, while the placebo group received the same pharmaceutical form but with maltodextrin. After the administration of the nutraceutical for a period of 90 days, a decrease in the plasma levels of TMAO (trimethylamine oxides) and ox-LDL (low density lipoprotein), two of the main markers of coronary pathologies, was observed by -49.78% ± 0.2 ($p < 0.0001$), and -43.12% $p < 0.0001$ ± 0.1 respectively compared to the placebo group as well as a decrease in C-Reactive Protein levels by 0.2 mg/dcl or to the extent of 39% which is related to chronic endothelial inflammation of the coronary arteries.

These promising results highlight the importance of antioxidants and all-natural products and these data show that nutraceutical may represent a novel and useful natural remedy to reduce prognostic markers for incident cardiovascular event.

Keywords: cardivascular disease, trimethylamine oxides, polyphenols, resveratrol

Biography

Patricia Daliu born in Tirana Albania on 24.07.1991, graduated in Pharmacy with gold medal, PhD in pharmaceutical sciences Naples Italy and Valenica Spain 2021. Author of 13 international publications, co-author of books and monographs. Lecturer in Pharmacognosy and Phytotherapy. Areas of interest nutraceuticals on metabolic disorder, food safety, phytochemistry.

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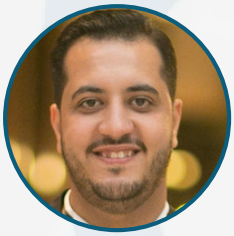

Mahmoud Eldesouky[1,2], Ibrahim Antoun[1,2], Georgia R. Layton[2,3], Ali Nizam[1], Joseph Barker[4], Ahmed Abdelrazik[1], Abdulmalik Koya[1], Edward Y. M. Lau[1], Mustafa Zakkar[2,4,5], Riyaz Somani[1,2] and Ghulam André Ng[1,2,5]

[1]Department of Cardiology, University Hospitals of Leicester NHS Trust, Glenfield Hospital, Leicester LE3 9QP, UK
[2]Department of Cardiovascular Sciences, Clinical Science Wing, University of Leicester, Glenfield Hospital, Leicester LE3 9QP, UK
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[4]National Heart and Lung Institute, Imperial College London, London SW7 2AZ, UK
[5]National Institute for Health Research, Leicester Research Biomedical Centre, Leicester LE3 9QP, UK

Hypertension and Atrial Fibrillation: Bridging the Gap Between Mechanisms, Risk, and Therapy

Abstract

Background and objectives

Atrial fibrillation (AF), the most prevalent sustained arrhythmia, poses a significant public health challenge due to its links with stroke, heart failure, and mortality. Hypertension, a primary modifiable cardiovascular risk factor, is a well-established risk factor for AF that facilitates structural and electrical changes in the atria, including dilation, fibrosis, and pressure overload.

Material and Methods

we conducted a literature search regarding the shared mechanisms, risks and treatments of hypertension and atrial fibrillation. Results: The renin–angiotensin–aldosterone system plays a pivotal role in this remodelling and inflammation, increasing AF susceptibility. Uncontrolled hypertension complicates AF management, diminishing the effectiveness of mainstay treatments, including antiarrhythmic drugs, catheter ablation, and cardioversion. Effective blood pressure management, particularly with therapies targeting the renin– angiotensin–aldosterone system (RAAS), can lower the risk of new-onset AF and reduce the incidence of recurrent AF, enhancing the success of rhythm control strategies. These antihypertensive therapies mitigate myocardial hypertrophy and fibrosis and attenuate both atrial pressure strain and the inflammatory response, mitigating the substrates for AF.

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Conclusion

This review highlights the urgent need for integrated strategies that combine BP control, AF screening, and lifestyle modifications to minimise the burden of AF and its complications. Future research should investigate the specific mechanisms of cellular-level interactions associated with a hypertensive predisposition to AF, including systematic inflammation and the role of genetics, the impact of blood pressure variations on AF risk, and individualised treatment strategies specifically targeting the shared mechanisms, simultaneously propagating hypertension and AF.

Keywords: atrial fibrillation; hypertension; mechanism; review

Biography

Currently a Cardiology Research Fellow at the University of Leicester and an Honorary Cardiology Fellow at Glenfield NHS Hospital. Started his career as a Cardio-thoracic ICU resident at Ain Shams University Hospitals, Egypt. Joined the NHS Workforce in 2018 and completed his Internal Medicine Training in 2022. Worked as a Cardiology Registrar in Mid Yorkshire NHS Hospitals and Calderdale & Huddersfield NHS Hospitals between 2022 and 2024.

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July 16-17, 2025 | Rome, Italy

Wendakoon O, Mahmoudi M

Cardiology, Faculty of Medicine, University of Southampton, Southampton General Hospital, Southampton UK

A systematic review on intravascular ultrasound-guided percutaneous coronary intervention versus angiography-guided percutaneous coronary intervention with regards to clinical endpoints.

Background

Despite much evidence to dignify the use of intravascular ultrasound (IVUS)-guided percutaneous coronary intervention (PCI), angiographic guidance remains adopted as the gold-standard intervention. Although IVUS has outwitted angiography with cross-sectional imaging, offering greater detail of vessel and plaque make-up, reports evaluating clinical outcomes were not driven to compare the impact of both technologies on key clinical endpoints.

Aims

This systematic review aims to compare IVUS-PCI and angiography-guided PCI, focusing on key clinical endpoints: myocardial infarction, repeat coronary revascularisation, admission to hospital with acute coronary syndrome, mortality and stent thrombosis.

Methods

Searches were conducted across MEDLINE (Ovid), Embase, PubMed and Cochrane Library. Randomised controlled trials were identified and screened for eligibility based on the PICOS criteria. Eligible articles underwent full-text screening, with inclusion/exclusion criteria applied. Study quality was assessed using RoB 2, with an independent researcher further contributing to the evaluation.

Results

5,177 records were initially retrieved. Deduplication and manual exclusion resulted in 68 articles eligible for full text screening. Trials were allocated a JADAD score and 14 relevant studies were selected for this review. Minimum stent area and target vessel failure were examples assessed as primary endpoints, although major adverse cardiac events were more frequently discussed, where key clinical outcomes were identified.

Conclusions

IVUS-guided PCI is linked with better long-term patient outcomes across key clinical endpoints when compared to angiography-guided PCI. Future trials should be multicentred, have a larger sample size and involve electronic randomisation to optimise reduction in bias. Trials must have consistent long-term follow-up times in order to validate differences in key endpoints between IVUS and angiography.

Biography

A 3rd year medical student at the University of Southampton with a keen interest in cardiology. He has completed a BSc in medical research, focussing on interventional cardiology, and gaining valuable insight into cutting-edge procedures and clinical applications. He has a strong desire in contributing towards innovative research and patient care in the field.

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Ramez Guindy

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ACE Inhibitors and Angiotensin Receptor Blockers for the Primary and Secondary Prevention of Cardiovascular Outcomes: Recommendations from the 2024 Egyptian Cardiology Expert Consensus in Collaboration with the CVREP Foundation

Introduction

The renin–angiotensin–aldosterone system (RAAS) plays a pivotal role in regulating blood pressure (BP), with dysregulation of RAAS resulting in hypertension and potentially heart failure (HF), myocardial infarction (MI), cardio-renal syndrome, and stroke. RAAS inhibitors, such as angiotensin-converting enzyme inhibitors (ACEis) and angiotensin receptor blockers (ARBs), have advantages beyond BP control. However, differences between these two drug classes need to be considered when choosing a therapy for preventing cardiovascular events.

Methods

A panel of 36 Egyptian cardiologists developed consensus statements on RAAS inhibitors for primary and secondary prevention of cardiovascular outcomes and stroke, using a modified three-step Delphi process. Results: The consensus statements highlight the importance of effective BP control and the role of RAAS blockade for prevention and management of various cardiovascular diseases. ACEis and ARBs differ in their mode of action and, thus, clinical effects. On the basis of available evidence, the consensus group recommended the following: ACEis should be considered as first choice (in preference to ARBs) to reduce the risk of MI, for primary prevention of HF, and for secondary prevention of stroke. ACEis and ARBs show equivalent efficacy for the primary prevention of stroke. Evidence also favors the preferential use of ACEis in patients with type 2 diabetes, for BP control, for the primary prevention of diabetic kidney disease, and to reduce the risk of major cardiovascular and renal outcomes. Treatment with an ACEi should be started within 24 h of ST segment elevation MI (and continued long term) in patients with HF, left ventricular systolic dysfunction, and/or diabetes. Angiotensin receptor/neprilysin inhibitors (ARNIs) are the first choice for patients with HF and reduced ejection fraction, with ACEis being the second choice in this group. ARBs are indicated as alternatives in patients who cannot tolerate ACEis. ACEis may be associated with cough development, but the incidence tends to be overestimated, and the risk can be reduced by use of a lipophilic ACEi or combining the ACEi with a calcium channel blocker.

Conclusion

RAAS blockade is an essential component of hypertension therapy; however, the protective effects provided by ACEis are superior to those of ARBs. Therefore, an ACEi is indicated in almost all cases, unless not tolerated.

Keywords: Angiotensin-converting enzyme inhibitors; Angiotensin receptor blockers; Cardiovascular outcomes; Hypertension; Heart failure; Myocardial infarction; Renin–angiotensin–aldosterone system; Stroke

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Biography

Ramez GUINDY MD, Emeritus Professor of cardiology and former head of cardiology department, Ain Shams university, Cairo, Egypt

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Dhif Ines

First Sechenov University, Russia

Hypoxic preconditioning – a prehabilitation method to reduce perioperative complications in patients undergoing cardiac surgery by cardiopulmonary bypass

Introduction

Postoperative cardiovascular complications within 30 days reaches 50,1%, most of which are due to insufficient blood supply, oxidative stress developed in ischemic-reperfusion myocardial injury.

Methods

A single-center prospective randomized placebo-controlled study was conducted in the Cardiac Surgery department of the I.M. Sechenov First Moscow State Medical University, registered at ClinicalTrials.gov (NCT04833283). 110 patients aged 20 to 78 years with valve defects and/or aortic aneurysm in stable clinical condition referred for elective surgery by cardiopulmonary bypass (CBP) are randomized into experimental (66 patients receiving of 3-7 Intermittent hypoxic-hyperoxic exposures (IHHE) and control group (44 patients, receiving placebo-IHHE). All patients were monitored during hospitalization and remotely - for 30 days after discharge. Before surgery, all patients underwent standard preoperative preparation and examination. IHHE were started 4-7 days before surgery (ReOxy Cardio, Ai Mediq S.A., Luxembourg). Fatal and nonfatal complications in peri-and postoperative periods were registered as well as cardiac troponins I and T (TnI and TnT) were measured before, 2 and 24 hour after surgery.

Results

Two groups did not differ in most clinical and demographic parameters. The risk of surgery (Euroscore II scale) was comparable. 2 and 24 hours after cardiosurgery, a significant increase in TnI/TnT values was noted in both groups, but the degree of increase in IHHE group was significantly less. Also almost all indicators of the perioperative cardiac and noncardiac complications were significantly less in IHHE group.

Conclusion

The use of IHHE as prehabilitation of patients for cardiac surgery with CBP reduces the degree of ischemia-reperfusion myocardial injury (assessed by TnI and TnT dynamics) and reduces the risk of complications both during surgery and in the early postoperative period.

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2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

July 16-17, 2025 | Rome, Italy

Chen Hong

Chongqing Hechuan Hongren Hospital, China

Diagnostic value of combined detection of serum lipoprotein a and BNP in patients with heart failure

Objective

To explore the diagnostic value of combined detection of serum lipoprotein a [Lp(a)] and brain natriuretic peptide (BNP) in patients with heart failure.

Methods

A total of 100 patients with heart failure admitted to our hospital from January 2021 to January 2024 were retrospectively selected as the study group, and another 100 healthy volunteers who underwent physical examinations in our hospital during the same period were selected as the control group. The levels of Lp(a) and BNP in the two groups were analyzed. The receiver operating characteristic curve (ROC) was drawn to analyze the diagnostic value of combined detection of serum lipoprotein a and BNP in patients with heart failure.

Results

The levels of Lp(a) and BNP in the observation group were both higher than those in the control group ($P<0.05$); the AUC value of combined detection of serum lipoprotein a and BNP was higher than that of single detection ($Z=16.253, 12.875, 5.941$, $P<0.05$).

Conclusion

The combined detection of Lp(a) and BNP has good diagnostic efficacy for patients with heart failure and is worthy of clinical promotion.

Keywords: serum lipoprotein a; brain natriuretic peptide; heart failure; diagnosis.

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2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

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Hirotsugu Mitsuhashi, MD, PhD

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Trans-catheter aortic valve implantation in a patient with membranous ventricular septal defect, sub-aortic band and double-chambered right ventricle

Background

We report a rare case of trans-catheter aortic valve implantation in an elderly male with membranous ventricular septal defect (VSD), sub-aortic band, and severe aortic stenosis (AS). We discuss the safety and efficacy of the technique.

Case Summary

An 86-year-old male was admitted to our hospital with congestive heart failure (CHF) due to low- flow low-gradient severe AS, a membranous ventricular septal defect (VSD), a subaortic band, and a double chambered right ventricle. The patient was not deemed to be a surgical candidate because of advanced age and frailty even though surgical aortic valve replacement, VSD closure, subaortic band resection and myectomy of right ventricle would be considered as definitive treatment. Instead, we performed transcatheter aortic valve implantation and VSD orifice closure using the skirt part of the self-expanding valve (26mm Evolut Pro PlusTM) because VSD occluder is not approved and thus not available in our country. The trans-catheter procedure resulted in a reduction of the mean aortic valve pressure gradient improved from 33 to 2 mmHg and a decrease in the shunt flow (Qp/Qs) from 1.9 to 1.2. The patient's heart failure improved, and he was discharged home 7 days after the procedure. He remained well and had not been admitted to hospital since discharge.

Discussion

Trans-catheter aortic valve implantation using a valve skirt may be considered in a situation where a high-risk patient is inoperable and VSD closure devices are unavailable. To complete this procedure safely, meticulous pre-procedural evaluation and accurate positioning using trans-esophageal echocardiogram are required.

Keywords: Trans-catheter aortic implantation, Aortic stenosis, Ventricular septal defect, Sub-aortic band, Double chambered right ventricle, Case report

Biography

Dr. Mitsuhashi is an interventional cardiologist and a clinical scientist. His specialty in interventional cardiology includes PCI, TAVI, LAA closure and ASD/PFO closure. He has been selected as a global master of TAVI, LAA Closure and PCI in TCT 2022 and TCT 2024.

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The Development of an Order Set for Adults Admitted for Acute Heart Failure at a National University Hospital in the Philippines

Background

Heart failure (HF) remains a leading cause of mortality and readmission worldwide. At the Philippine General Hospital (PGH), it consistently ranks among the top causes of adult inpatient death. While the American College of Cardiology (ACC) and European Society of Cardiology (ESC) guidelines recommend class I interventions proven to improve HF outcomes, their uptake in Philippine settings is limited. International hospitals have implemented guideline-based order sets with success, reducing in-hospital mortality and costs. This study aimed to develop a context-sensitive order set for adult patients presenting with acute heart failure (AHF) at the PGH Emergency Department (ED).

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Methods

A mixed methods approach guided the development of the AHF order set. ESC and ACC guidelines were reviewed using the AGREE II appraisal tool. Class I interventions were compiled and refined through stakeholder input. Focus group discussions (FGDs) and online Delphi rounds involving physicians, nurses, and allied health professionals were used to evaluate relevance, feasibility, and local applicability.

Results

A total of 29 clinical recommendations were adopted covering monitoring, diagnostics, pharmacologic therapy, referrals, and ED disposition. The order set was adapted to the PGH context, incorporating COVID-19 workflow considerations and barriers identified during stakeholder consultations. A locally appropriate operational definition of AHF was established. The final version emphasized accessibility, evidence-based care, and cost-effectiveness.

Conclusion

A hospital-based, multidisciplinary process led to the creation and adoption of a locally contextualized AHF order set at PGH. Its use may standardize early management of AHF in a resource-constrained public hospital and improve outcomes among Filipino patients.

Keywords: acute heart failure, order set, clinical pathway, quality improvement

Biography

Dr. John Vincent Magalong completed his medical training at University of the Philippines Manila College of Medicine and residency in Internal Medicine at Philippine General Hospital. He is a Fellow of the Philippine College of Physicians. He serves as Clinical Faculty at San Beda University College of Medicine and Assistant Professor at Metropolitan Medical Center College of Medicine. He is a Medical Officer and part of the Research and Residency Training Core in Internal Medicine at Valenzuela Medical Center. His research interests include clinical pathway development and evidence synthesis in cardiometabolic pharmacotherapy, with early contributions published locally and internationally.

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2ND INTERNATIONAL CONFERENCE ON CARDIOLOGY AND CARDIOVASCULAR MEDICINE

July 16-17, 2025 | Rome, Italy

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Predictors of The Gut Microbiome In The Development of Hypertension In Patients With Insulin Resistance

Cardiovascular diseases are the leading cause of mortality worldwide. Numerous clinical and experimental data indicate the important role of the gut microbiota as an independent factor in blood pressure regulation.

Aim

To assess the relationship between the gut microbiome and arterial hypertension (AH) in patients with insulin resistance in the Kazakh population.

Materials and Methods

The study group included 199 individuals with insulin resistance, among whom 103 patients had hypertension. The average duration of hypertension was about 6 years, with a mean age of 49.4±6.9 years, a body mass index of 27±4.8 kg/m^2, and 50% of patients having an increased waist circumference. Obesity was observed in 27 individuals, and 29% of the participants were smokers.

Research Materials and Methods

Total DNA was extracted from 250.0 mg of homogenized wet fecal sample using the PureLink™ Microbiome DNA Purification Kit (ThermoFisher Scientific, USA) according to the manufacturer's instructions. 16S rRNA gene sequencing was performed using the Ion GeneStudio S5 Plus.

Research Results

Patients with insulin resistance and hypertension showed a decrease in bacterial diversity. Significant differences were observed for several bacteria phylum Bacteroidetes and Firmicutes. The Bacteroidetes was represented by species such as dorei ($p \leq 0.05$), massiliensis ($p \leq 0.0005$), and plebeius ($p \leq 0.01$). The Firmicutes included species such as Streptococcus tobetsuensis ($p \leq 0.0008$) and Dialister invisus ($p \leq 0.02$).

The results highlight a possible link between dysbiosis associated with hypertension and the balance of organic acids produced by gut bacteria, which may lead to changes in the composition of metabolites and the induction of inflammatory responses underlying the pathogenesis of many chronic non-communicable diseases.

Biography

Abildinova Gulshara Zhusupovna was born in 1961 in the Republic of Kazakhstan. Geneticist of the highest category, doctor of medical sciences, professor, head of the laboratory of personalized genomic diagnostics in the hospital of the Presidential Administration of the Republic of Kazakhstan.

Experience of scientific and pedagogical work for 36 years. Published 200 scientific articles, including 65 after the defense of doctoral dissertation, in international editions and recommended by the Higher Attestation Commission of the Republic of Kazakhstan, 5 methodical recommendations, 7 patents and 4 monographs.

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As a chief freelance geneticist of the Ministry of Health of the Republic of Kazakhstan . plays a major role in the improvement of medical and genetic care to the population of the Republic of Kazakhstan, effective implementation of the program of genetic screening of pregnant women and newborns, takes an active part in the system of protection of reproductive health of the population of the Republic of Kazakhstan; contributes to improving the level and quality of medical and genetic knowledge of doctors-geneticists and general practitioners, promotion of medical and genetic consultations.

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IPs from autologous human gingival stem cells and extracellular vesicles: a new tool for cardiac regeneration.

The growing number of chronic diseases afflicting the global population underscores the urgency of identifying alternative efficient technologies.Technological innovation and advances in regenerative clinical applications are promising tools in transformative therapeutic impact. The core of regenerative medicine is stem cells. The regenerative field has focused on the study and use of multipotent adult stem cells (MSCs). Furthermore, in recent years, to have a greater potential of the cells for therapeutic purposes, and at the same time to bypass the controversies related to the ethical problems of ESCs use, a lot of studies are focusing on the induced pluripotent stem cell lines (iPSCs) generation. One of the objectives of this work is the characterization of a new pluripotency cell line obtained for the first time by reprogramming human gingival mesenchymal stem cells (hGMSCs- derived iPS cell line) through a non-integrating method. The characterization of the hGMSCs-derived iPS is performed through the evaluation of pluripotent markers expression by realtime PCR, confocal microscopy, and flow cytofluorimetry. Morphological analysis of the hGMSCs-derived iPS colonies was done by scanning electron microscopy in addition to light microscopy. The ability of the hGMSCs-derived iPS to differentiate into the three embryonic layers is demonstrated through the in vitro generation of embryoid bodies, which are evaluated by realtime PCR and confocal microscopy. Therefore, it is characterized the exosome content of both starting hGMSCs and hGMSCs-derived iPS in order to identify more potent therapeutic approaches for regenerative medicine. The second objective of this work is to obtain a new autologous primary cardiomyocytes line from hGMSCs-derived iPS cells through the only use of specific medium. This allows to give an innovative approach for personalized cardiac tissue regeneration.

Keywords: new iPS line, autologous iPS, extracellular vesicles, regenerative medicine, personalized cardiac regeneration

Biography

Ylenia Della Rocca, born in 1995 in Avezzano (Italy), is an Italian researcher expert in medical biotechnology, stem cells and regenerative medicine. Graduated with honors and PhD, she has carried out research in national and international centers, patenting an innovative cell line. Author of 25 scientific articles with over 300 citations, she is active in projects such as PNRR and PRIN. At just 29 years old, she was qualified as an associate professor. She is a speaker at conferences and editor for scientific journals. She has received prestigious awards for excellence in research, including the Best Researcher Award 2024 and the National Award "Ippocrate eSport".

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Robert Guidoin, Katell Delanoë, Daniel Chappard, Eric Philippe, Ze Zhang

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Fractal analysis unlocks new potential in xenopericardia for percutaneous aortic valve engineering

The growing demand for percutaneous aortic valves raises concerns about durability, which is limited by tissue degeneration and/or leaflet calcification, particularly in younger patients. To address this limitation, previous studies demonstrated the possible benefits of using donkey or kangaroo pericardia due to their mechanical characteristics. With the ultimate goal of outlasting patient lifespan, donkey and kangaroo xenopericardia are studied through a multidimensional analysis to provide insights into potential histological and biotribological benefits. At a macroscopic scale, kangaroo and donkey pericardia appeared smoother on the serous side while their fibrous side demonstrated a more dispersed organization. From a microstructural perspective, the results indicate that both xenopericardia showed suitable laminar distribution with layered collagen bundles and minimum interstitial cells. Both fiber organizations displayed collagen fibers sinusoidally crimped with periodicity equivalent to bovine collagen crimp period. Using fractal and texture analysis, both tissue species exhibited optimal biotribological responses with potential controlled friction, minimal wear, and lubricant retention capacity. Results suggested that both kangaroo and donkey could be used in cardiovascular implantology which could benefit from their biotribological capacity and laminar organization. It is anticipated that these findings will draw attention to these xenopericardia as potential manufacturing materials and provide interest for additional testing regarding fatigue resistance and crimping resistance. Preference should however be granted to farmed animals.

Biography

Robert Guidoin PhD is professor of surgery (biomaterials) at Laval University, Québec, QC (Canada). He studied chemistry at the University of Nantes, France, from 1967-1970. After spending a post-doctoral year at the FAU Erlangen-Nürnberg, Germany, he came to Laval University in 1971 to investigate the blood compatibility of medical devices, such as membrane oxygenators and dialyzers. Further to a specific training in bioengineering at Strathclyde University, Glasgow, Scotland, he was appointed assistant professor of surgery (biomaterials) at Laval University in 1976 before becoming a full professor in 1986. He was appointed as a member of the International College of Fellows of Biomaterials Science and Engineering in 1996, and Fellow of the American Institute for Medical and Biological Engineering in 1998. He was a member of the Sciences Council of Canada (1987-1992). He became Honorary Faculty at Chongqing University, China, the Medical University of Varna, Bulgaria, the University of Sichuan, China, and the Donghua University, China, in 1994, 2001, 2010, and 2013, respectively. He became International Honorary Faculty of the Society of Endovascular and Chinese medical Doctor Association in 2015. He entered the Canadian Who is Who in 1992. He has made important contributions in the field of vascular and endovascular grafts, heart valves, mechanical hearts, membrane oxygenators, auditor ossicles, breast implants and intra-uterine devices. He has trained many students (35 MSc, 21 PhD, 11 post-doc), and 12 visiting professors on sabbatical leave at his research facilities. During the last decade, he has actively participated in the 111 Program of the Chinese Ministry of Education at Donghua University, Shanghai, China. He was the founder and the first scientific director of the Quebec Biomedical Institute (1992-2000). He has published more than 300 scientific papers, 24 book chapters, 2 books as co-editor, and has presented his research at numerous meetings worldwide. Robert Guidoin is an internationally leading expert in cardiovascular devices, especially those used for percutaneous techniques.

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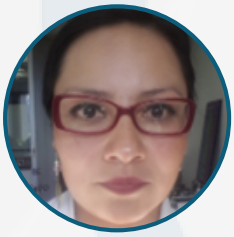

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Cross - sex hormonal replacement: mitochondria as bad boys

Cross - hormonal treatments are used in “transgender” individuals. Transgender is used to define individuals whose gender identity differs from the sex assigned at birth. The hormones administered have effect after months, with maximal results after some years.

A collateral effect occurs over the cardiovascular system; as diverse longitudinal studies in Europe suggest, showing that feminizing hormone therapy may be associated with high cardiovascular disease incidence.

Also in postmenopausal women, where estrogens absence is a hallmark, testosterone therapy has been linked with ischemic arterial disease and coronary disease and at least in animal models we have reported that administration of hormones from the opposite gender may promote cardiovascular dysfunction. Until this moment the role of mitochondria, the organelle that has been reported fail before the cardiovascular condition is manifested, is unknown.

In animal models previously we have shown that oophorectomy in female rats modifies gradually heart mitochondrial functions, such as ATP production, oxygen consumption, calcium retention capacity, among other parameters. In this work our efforts were to elucidate if hormones of the contrary gender have some effect over mitochondrial functions. For this purpose we used oophorectomized female rats + testosterone and castrated male rats + estrogens, after 4 months of treatment, hormonal levels were measured, a surface electrocardiogram (ECG) was performed (DII), heart mitochondria were isolated and oxygen consumption, calcium uptake, mitochondrial transmembrane potential, thiobarbituric acid reactive species (TBARs), mitochondrial superoxide manganese activity were measured. Except for ECG all the parameters measured changed in non a favorable way.

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Biography

Dr. Natalia Pavón graduated in Chemistry Bacteriology and Parasitology at the National School of Biological Sciences in Mexico City, received her MD and PhD degrees from the Autonomous National University of Mexico. She completed her training in the University of Bio-Bio (Chile). As an independent researcher in the Department of Pharmacology in the National Institute of Cardiology "Ignacio Chávez" she is interested in the effects of sexual hormones, specially estrogens and their metabolites over cardiovascular function and energetic metabolism (mitochondrial function). Her recent papers include one, where for the 1st time the presence of estrogenic compounds is possibly linked with cardiovascular disease in menopausal women.

She has published 59 articles in reputed journals and belongs to the National System of Researchers (SNII) in México, level 1. She is a passionate of nature and native plants of Mexico, where her volunteer work has made her part of the "Tigridia network" and different collectives of the society, in social media you can find this part of her work as a member of "Chaponeros"

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Lira-Silva E., del Valle Mondragón L., Perez-Torres I., Posadas-Sánchez R.,Roldán-Gómez F.J.,Posadas-Romero C., Vargas-Barrón J., Pavón N

National Institute of Cardiology "Ignacio Chávez", CdMx, México

Are the EDMs a factor risk in postmenopausic women?

Menopause is associated with a higher risk of cardiovascular disease, possibly due to the altered estrogen metabolism. During this stage, the estrogens level decrease, because they are transformed into estrogenic degradation metabolites (EDMs). The EDMs produce reactive oxygen species when they are generated, leading to an increase in oxidative stress which may have implications for cardiovascular health during menopause.

In an attempt to determine if EDMs are linked to cardiovascular disease, serum samples from women with cardiovascular risk (CAC > 1), established cardiovascular disease (CVD), and healthy controls (Ctrl) were analyzed. The samples were obtained by the Mexican study Genetics of Atherosclerotic Disease (GEA). The measurement of EDMs was achieved by HPLC, and some markers of oxidative stress and nuclear damage were also evaluated.

The levels of 17β-estradiol and estriol in CAC>1 and CVD groups were lower than in healthy postmenopausal women. This pattern was replicated by the metabolite 4-methoxy-17β estradiol. Meanwhile the CAC>1 and CVD groups had higher levels of estrone 3-propyl ether, estrone 3-methyl ether, and 2-hydroxyestrone. Despite their low levels in all groups, 2-hydroxyestradiol and 4-hydroxyestradiol were almost undetectable in CVD. This explanation could be given by the enzymatic O-methylation of certain estrogenic metabolites to methoxyestradiols and conversion to quinones, which can bind to DNA and cause oxidative damage. In this regard, there was a rise in oxidative stress and a decrease in oxidative stress management capacity in CAC>1 and CVD groups. This study suggests that certain EDMs may indicate cardiovascular risk in women going through menopause, but additional research is needed to confirm their causal role in cardiovascular function.

Keywords: estrogenic degradation metabolites (EDMs), menopause, cardiovascular disease, women

Biography

Researcher in Medical Sciences at the Pharmacology Department of Instituto Nacional de Cardiología Ignacio Chávez. She received her PhD in Science at UNAM. She is member of the National System of Researchers (SNI level 1). Her research is focus to examine the effects of natural products, estrogens and EDM´s on cardiovascular diseases. She has published 20 papers in national and international journals, as well as a chapter in a book.

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Kelsey Gore MA, BS, RRT, Dean Linder, Jr. CCP, LP, Juan José Martinez Duque MD, Junxi Wang BS, Brett Wester, DO, Tiffany Otero, MD, Shaun Yockelson, MD, Adrian Alexis Ruiz, MD, Bobby D. Nossaman, MD

Ochsner Health- Jefferson Campus, New Orleans, Louisiana, USA

Etiologies of Acute Renal Failure during Mechanical Circulatory Support

Patients receiving mechanical circulatory support (MCS) frequently require renal replacement therapy (RRT). Examining risk factors for requiring RRT in patients receiving MCS may allow improved understanding of these comorbidities and enhance patient outcomes. Following IRB approval, patient characteristics, comorbidities, and the need for RRT were studied in 129 patients who received 159 MCS devices from January 2017 to October 2023. The clinical variables underwent machine learning to examine their relationships to the outcome of interest, the need for RRT. In our study the incidence of RRT was 36% with a 95% confidence interval ranging from 29-44%. Following machine learning, patients with a history of immunologic therapy pr having a pacemaker or internal cardiac defibrillator (ICDs) were associated with the need for RRT (Chi-square=44, P=0.0003). The c-index statistic for this model was 0.81. The anticoagulation therapy administered in these two groups was also analyzed. Patients in these two groups receiving unfractionated heparin (UFH) were observed to have a higher incidence (44%) in the need for RRT. The incidence of RRT was high in this patient population. The novel associations in patients requiring MCS who have received prior immunologic therapy or have pre-existing pacemaker/ICDs suggest that an increased systemic inflammatory state exists that escalates the need for RRT. Unfractionated heparin appears to provide minimal protection from the need for RRT in patients requiring MCS. These findings suggest that other options for systemic anticoagulation in patients requiring MCS should be considered. Further investigation into how these background inflammatory conditions contribute to the need for RRT in patients requiring MCS is warranted.

Keywords: Renal Replacement Therapy, Mechanical Circulatory Support

Biography

Kelsey Gore is an adult and pediatric ECMO Specialist at Ochsner Health in New Orleans, Louisiana. She completed her Master of Art in Biomedical Sciences and Master of Art in Education- Teaching Health Science in 2024 from Bluefield University, USA. She has her bachelor's degree in respiratory therapy in 2020 at Franciscan Missionaries University in Louisiana. She is an avid show jumper who competes on the national level.

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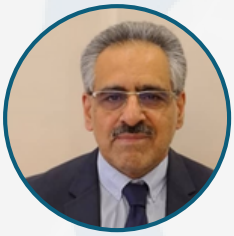

Alireza Rai

Professor of Cardiology, Bistoon Hospital & Kermanshah University of Medical Sciences, Iran

The Effects of the Obesity Paradox and In-Hospital and One-Year Outcomes in Patients With ST Elevation Myocardial Infarction (STEMI): Results From a STEMI Registry

Introduction

Obesity is strongly associated with increased cardiovascular diseases (CVD) and CV risk factors including diabetes mellitus, hypertension, and dyslipidemia. However, numerous studies have suggested an “obesity paradox”, where overweight and mild obese patients often have a better outcome than their leaner counterparts. Therefore, this study was aimed to characterize the association of BMI with inhospital and one year outcomes.

Methods

This hospital-based study was a part of the Kermanshah STEMI Registry. After applying inclusion criteria, a total of 2397 STEMI patients were assessed. The data were collected using a standardized case report developed by the European Observational Registry Program (EORP). Body mass index (BMI) (kg/m2) classified into underweight (<18.5), normal weight (18.5–24.9), overweight (25–29.9), class I/mild obese (30–34.9), and class II/extreme obese (≥35) categories. We assessed the independent predictors of the inhospital and one-year outcomes using multivariable logistic regression models.

Results

Out of the 2397 patients, 43 (1.79%) were underweight, 934 (38.97%) were normal, 1038 (43.30%) were overweight, 322 (13.43%) were class I obese, and 60 (2.50%) were class II obese. The results of crude analysis showed that patients with class I obesity were at lowest risk of CV death (OR 0.50; 95% CI 0.30-0.84), MACE3 (MI, stroke, and death) (OR 0.47; 95% CI 0.29-0.76), and MACE5 (MACE3 plus unstable angina and heart failure) (OR 0.59; 95% CI 0.44-0.79).

Conclusion

This lower unadjusted rates of death and MACE events in the class I obesity, disappeared after multivariate adjustment. Therefore, this protective effect may not really exist and may actually reflect the effect of confounders such as age. Keywords: Myocardial infarction, Registry, BMI, Iran, obesity.

Biography

Dr. Alireza Rai is a leading Iranian cardiologist and interventionalist with over 30 years of clinical, academic, and research experience. He serves as Professor of Cardiology at Bistoon Hospital and Kermanshah University of Medical Sciences. His research focuses on coronary artery disease, PCI, heart failure, and cardiac imaging, with over 30 published articles. Dr. Rai is also a dedicated educator and frequent speaker at national and international cardiology forums.

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Antihypertensive Potential of Haloxylon graffithii and Exploration of Underlying Mechanistic Pathway

Current study was designed for elucidation of antihypertensive effect of Haloxylon griffithii using biological experiments, to explore the antihypertensive potential in Sprague Dawley (SD) rats. Total phenol and flavonoids were determined in crude extract by HPLC. In vivo and in-vitro approaches were utilized to test the crude extract and fractions of H. griffithii in SD rats. The effect on MAP was compared in normotensive and high salt induced hypertensive rats. Crude hydroethanolic extract and n-Hexane, Ethyl acetate, ethanolic and aqueous fractions were evaluated In-vitro on paired atria & aorta preparations for evaluation of vascular mechanism. Invasive method was used for blood pressure measurement. Extract was also evaluated for acute and chronic toxicity study in mice. Crude extract and fractions of H. griffithii induced a fall in MAP in normotensive and high-salt induced hypertensive rats at different doses. Effect was more significant in hypertensive rats. H. griffithii and fractions inhibited high K and PE precontraction on aortic preparations comparable to verapamil. While on isolated atria it produced negative inotropic and chronotropic effects. These findings indicated the antihypertensive effect of H. griffithii may be used as a therapeutic agent and its medicinal significance should be researched further.

Keywords: Haloxylone grafitthi, hypertension, vasodilation, muscarinic receptors, calcium channel blocker, HPLC analysis

Biography

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Effect of Physical Exercise on the Lipid Profile in Post-Myocardial Infarction Patients: A Systematic Review

Cardiovascular diseases are a leading global cause of death, with acute myocardial infarction (AMI) being a prominent manifestation caused by coronary artery occlusion due to thrombus formation. This systematic review aimed to evaluate the effect of physical exercise on the lipid profile in post-myocardial infarction patients, focusing on key biomarkers: VLDL, LDL, HDL, IDL, and triglycerides. An electronic search was conducted in PubMed and the Virtual Health Library using descriptors "lipid profile," "myocardial infarction," and "physical exercise." From 103 initial studies, two met inclusion criteria. Data analysis showed that, on average, all biomarkers except HDL decreased by 1%, indicating a beneficial effect for coronary disease prevention. HDL alone increased significantly (+17.5%), which contributed to reduced LDL:HDL and TG:HDL ratios, key predictors of cardiovascular risk. These findings suggest that aerobic physical exercise improves lipid metabolism, increases mitochondrial activity, and enhances muscle lipoprotein lipase activity, contributing to improved cardiovascular outcomes in AMI survivors. Notably, 40-minute exercise sessions yielded similar benefits as 60-minute sessions in patients with altered lipid profiles, indicating the potential for cost-effective interventions. Further experimental studies are recommended to support individualized cardiac rehabilitation programs.

Keywords: myocardial infarction, exercise, lipid profile, cardiac rehabilitation, HDL, systematic review

Biography

Antonio Beira de Andrade Junior is a professor and researcher at Uniandrade, Brazil. He has extensive experience in exercise physiology and cardiovascular rehabilitation. His academic and clinical work focuses on the effects of physical activity on health outcomes in cardiac patients. He also contributes to the development of systematic training protocols aimed at reducing cardiovascular risk.

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Resolution of Trifascicular Heart Block with Effective Closure of Congenital Atrial Septal Defect Followed by Later Coronavirus Disease 2019–associated Cardiac Strain-A Case Report

Heart block (HB) is one of the most serious arrhythmias. Higher degrees of HB—for example, trifascicular HB—result in a more intense patient condition. Atrial septal defects (ASDs) represent the most common congenital heart disease in adults. All ASDs generally result in a left-toright shunt, commonly causing right-side enlargement and dilation and, to a lesser extent, left atrial enlargement. A 26-year-old woman presented to the physician outpatient clinic with a complicated ASD with trifascicular HB and severe mitral and tricuspid regurgitations. The trifascicular HB with valvular regurgitations resolved with congenital ASD closure; however, she was diagnosed with coronavirus disease 2019 (COVID-19)–associated cardiac strain 3 years later. Interventions included electrocardiography, oxygenation, echocardiography, and cardiovascular surgical repair. A dramatic electrocardiographic response and better clinical outcomes despite dilations of both atria were observed. Trifascicular HB is a newly recorded association after congenital ASDs in adults. The disappearance of trifascicular HB after surgical closure of the congenital ASD is an indicator of effective surgical repair. The occurrence of COVID-19 pneumonia later, with atrial dilations continuing after the infection, may be a constellation of risk factors for the observed cardiac strain.

Keywords: Atrial septal defect, cardiac strain, congenital heart disease, COVID-19, trifascicular block.

Biography

Dr. Yasser Mohammed Hassanain Elsayed; A scientist, critical care physician, cardiologist, and independent researcher at Egyptian Ministry of Health. Publicized articles; (144). Innovations (14); (3) "Signs", (4) "Phenomena", (1) "Modification", (1) "Maneuver", (1) “Method”, (1) “Test”, (2) “Syndrome”, and (1) Yasser’s Fibrillation. Speaker (International conferences); (28). Reviewer; (264) articles for (89) Journals. Honorable editor; (272) Journals. International Conferences OCM; (10). Instructor; (10) official and (100) non-official. COVID-19 publicized articles; (47). Prizes nomination; Breakthrough Prize, Einstein Prize, Abdul Hameed Showman Award for Arab Researchers, and ESICM Awards. Excellence certificate (more than 163).

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