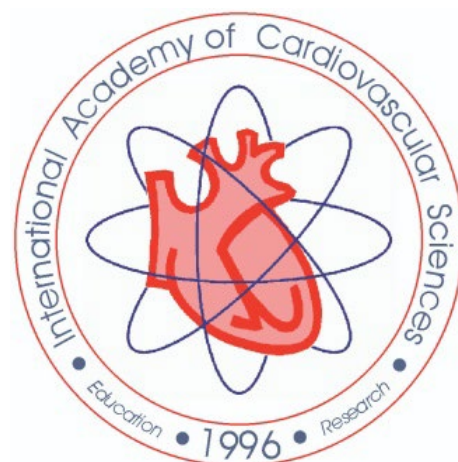


Promoting Cardiovascular Education, Research and Prevention

CV Network

THE OFFICIAL BULLETIN OF THE INTERNATIONAL ACADEMY OF CARDIOVASCULAR SCIENCES

PUBLISHED WITH THE ASSISTANCE OF THE ST. BONIFACE
HOSPITAL ALBRECHTSEN RESEARCH CENTRE



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What We Do and Who Helps Us: A Message from IACS President

Grant N. Pierce

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Dr. Grant Pierce

Despite our best efforts clinically and scientifically, and despite the large financial contributions to slow the disease, cardiovascular disease (CVD) and stroke remain the #1 cause of death globally. Unfortunately, there is little relief in sight. Cardiovascular disease and stroke world-wide have continued on an alarming rise over the past decade. Furthermore, one of the major risk factors for CVD, obesity, appears to be increasing globally as well. It may be disappointing, disheartening, even depressing, for us to acknowledge that we are losing the battle globally when we all work so hard and dedicate so much of our time and resources to stop this devastating disease.

There is some light at the end of the tunnel, however, it is important to recognize that the source of that light is restricted. The continued dominance of CVD in global mortality statistics particularly in third world countries and in countries with large populations like India, Brazil and China tends to skew the world data. In North America, the USA specifically, there is a refreshing difference in the frequency of CVD over recent times. CVD in the USA and Canada has been on a significant downward trend for the last few decades. One may reasonably ask then, why is the USA and Canada doing so well controlling the fight against CVD when the rest of the world is not? What

are they doing to curb the rise in CVD that these other countries are not?

Certainly, one factor in the lowering of CVD in North America stems from the capacity of these countries to direct large amounts of clinical resources to treat the disease. A more rapid recognition of CVD and stroke symptoms by both the patient and the clinician have also led to decreased mortality. However, it is also important to acknowledge that part of the answer lies in education. Countries like the USA and Canada as well as some European countries have dedicated significant resources to educating the public and the clinical community to the causes of CVD in an effort to prevent or delay the start of CVD symptoms. The training of young clinicians and the general public on risk factors which are associated with CVD (i.e. smoking, high cholesterol, hypertension, lack of exercise, obesity, poor diet, etc.) have had a clear impact. The increasing use of public forums to educate the public has had an important effect not only on the lifestyle habits of the general population but on the food industry to create better healthy choices in the marketplace.

Has this happened to the same extent in other countries? Perhaps not and it is an area upon which the IACS focusses its work. The transfer of knowledge promoted through international scientific conferences organized by the IACS helps to address the continuing challenge of injury and death due to CVD and stroke in these needy countries. The IACS is dedicated to the transfer of knowledge on CVD causes, treatments and preventive strategies. This continues to play an undeniable role in fighting CVD. IACS is active in educating the public, lecturing to cardiologists about the latest clinical treatments and training young enthusiastic medical and graduate students not only in your own country but also in third world countries and in countries like Brazil, China and India where CVD has become epidemic.

In this regard, there is a significant role for health-related foundations and funding organizations to play in helping societies like the IACS to do its important work of educating the public, cardiologists and

be recognized and increased. In my home city of Winnipeg, the Manitoba Medical Service Foundation serves such a focus, helping to fund young medical researchers locally who will go on to have an impact internationally as well.

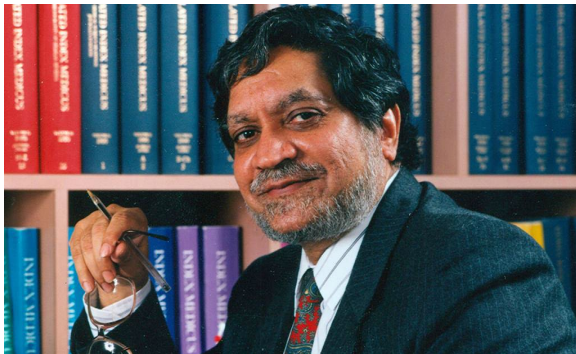
Your home town certainly has similar organizations. I, on behalf of all cardiovascular scientists and clinicians, would like to salute those dedicated local funding bodies and their work in cities and small towns all over the world. We need them desperately and we need more of them. Their support is not unnoticed and it is essential! THANK YOU!

**Grant N. Pierce, OM, PhD, FIACS, FACC, FAHA,
FISHR, FCAHS, FRSM (London), FRSC
President, IACS
Distinguished Professor, University of Manitoba,
Winnipeg, Canada**

Dr. Dhalla Proud to Represent Winnipeg South Asian Community on World Stage with Ceremonial Puck Drop

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<https://www.nhl.com/jets/news/dr-dhalla-proud-to-represent-wpg-south-asian-community-on-world-stage/c-340905454>



Dr. Naranjan Dhalla in the early days

For many people, the Winnipeg Jets are one of the most iconic symbols of the city. In the science community though, Winnipeg is perhaps more well-known for being a hub for cardiovascular research, thanks in large part to the work of Dr. Naranjan Dhalla.

Dr. Dhalla is a Distinguished Professor in the Department of Physiology and Pathophysiology at the University of Manitoba and Director of Cardiovascular Developments at St. Boniface Hospital Albrechtsen Research Centre whose cardiovascular research is world-renowned and whose achievements are too numerous to mention. Among them, however, is his pivotal role as a founding leader of two worldwide cardiovascular science organizations - the International Society of Heart Research and the International Academy of Cardiovascular Sciences –



Dr. Dhalla with Mrs. Ranjit Dhalla

which have incorporated many countries into the ongoing work of securing advanced cardiovascular knowledge and health worldwide.

With the Jets celebrating South Asian Heritage Night at their Feb. 11 game, no celebration of South Asian culture and community members in Winnipeg would be complete without Dr. Dhalla, who will be one of four people honoured through a ceremonial puck drop at the game.

Originally from Ghanieke, Punjab, India, Dr. Dhalla moved from India to North America at the age of 25 - arriving in Pennsylvania where he completed his Master of Science and Ph.D. "When I came to North America, I had a tough time with the language and communicating with people. Where I could connect with others was through using my smarts and choosing to serve people," he recalled of his choice to pursue a career in the health sciences. "In order to serve people, though, I of course had to have my own credibility and had to work very hard."

Following his studies, he served as Assistant Professor at St. Louis University for two years, before being offered a position to establish a heart centre in Canada that brought him to Winnipeg and the University of Manitoba in 1968 where he has been working in experimental cardiology for the past 54 years. "I wanted to make Winnipeg a mecca for cardiovascular medicine, and I wanted to serve people of the international community," Dr. Dhalla noted. "My time at the University of Manitoba has been wonderful, as



Dr. Dhalla with his sons, Romel, Sonny and Vik

they've allowed me to do what I've needed to do to promote cardiovascular research here and around the world." Dr. Dhalla has managed to do exactly that, and the stats surrounding his career certainly attest to it.

He hasn't been racking up goals and assists like Jets fans are accustomed to tracking, but he's amassed mind-blowing numbers all the same. He's published 867 full-length papers and reviews and 645 abstracts. His research has been cited more than 33,150 times. He's edited and authored 65 books. He's trained 166 fellows and students who are now conducting independent research around the world. He's received 212 honours and awards ranging from the Order of Canada, to being chosen as the second greatest Manitoban of all-time, to being inducted into the Canadian Medical Hall of Fame. He's been invited to speak at 542 national and international conferences and academic institutions.

It was at one of those conferences where he saw the reaches of his own work and the reach of the Winnipeg Jets overlap in the least likely of spots.

"In 1974, I traveled to Kazakhstan for a lecture on heart disease. After delivering the lecture, one of the attendants approached me and asked if I knew Bobby Hull. I was naturally delighted to find someone on the other side of the globe who knew about Hull and the Winnipeg Jets. Every city has landmarks, and it was clear then that the Jets are the insignia of Winnipeg."

Dr. Dhalla hasn't just been an advocate for cardiovascular health, though. He's been integral in promoting South Asian culture in Winnipeg as an integral member in establishing the Punjab Cultural Centre - a building that offers the South Asian community a place to celebrate and connect to their culture - and the India Canada Cultural & Heritage Association that seeks to mentor young people and provide scholarships.

It all stems from that passion for serving others that has driven him to not only serve countless people by advancing knowledge of cardiovascular health, but to serve the South Asian and Winnipeg communities as a tremendous ambassador.



Bust of Dr. Dhalla installed at the Winnipeg Citizens Hall of Fame



Dr. Naranjan Dhalla honoured with ceremonial puck drop at Winnipeg Jets game

IACS Awards Presented During IACS-India Section Meeting in Chandigarh, India, February 16-18, 2023

Dr. Grant Pierce and Dr. Ramesh Goyal presented the following individuals for Distinguished Awards approved by the Executive Council of the IACS-World at the IACS India Section Meeting in Chandigarh, India.

- 1. Dr. K.K. Talwar, Lifetime Achievement Award**
- 2. Dr. Ajay Bahl, Distinguished Leadership Award**
- 3. Dr. Mukesh Nandave, Distinguished Leadership Award**
- 4. Dr. C.C. Kartha, Naranjan Dhalla Award for Innovative Investigators in Cardiovascular Sciences**

Dr. K.K. Talwar



Dr. K.K. Talwar

Dr. K.K. Talwar is an eminent medical professional in India. He is currently, Chairman, Cardiac Diseases, PSRI Heart Institute, New Delhi. Dr. Talwar has held several high-profile positions including Hon. Advisor, Health and Medical Education, Government of Punjab (2013-21), Chairman, Department of Cardiology, Max Healthcare Institute, Saket, New Delhi (2013-19), Chairman, Board of Governors, Medical Council of India (2011-13), President, National Academy of Medical Sciences of India (2009-2012), Director and Professor & Head, Department of Cardiology, Postgraduate Institute of Medical Education and Research, Chandigarh (2004-

11) and until 2004 was Professor and Head, Medical of Cardiology, All India Institute of Medical Sciences.

He is recognized as one of the pioneers in the field of Electrophysiology, Pacemaker and Heart Failure. He has published more than 239 articles and 236 abstracts in both national and international journals of repute and has contributed 19 chapters in various books. Dr. Talwar has delivered 25 orations. His contributions to cardiovascular sciences include initiating the technique of Endomyocardial Biopsy (EMB) in 1986 at the AIIMS, New Delhi and used this technique to evaluate patients with various tropical heart muscle diseases to understand the pathogenesis and to evaluate various forms of therapy. For the first time in the world literature, he documented, using EMB, the occurrence of inflammatory myocarditis in patients with Takayasu Arteritis resulting in heart failure and demonstrated that this myocardial dysfunction is reversible with the use of immunosuppressive therapy. Dr. Talwar was closely involved in the development of Heart Transplant Programme at AIIMS, New Delhi where first heart transplant in the country was done in 1994.

Another significant contribution has been in the development of specialty of Arrhythmia in the country. He established the technique and facility of radiofrequency ablation to cure arrhythmic disorders at the AIIMS, New Delhi in 1993. He further helped to establish these facilities at other centres in the

country including PGIMER, Chandigarh. He is again the first in India and South Asian region to introduce the therapy of automatic implantable cardioverter and defibrillator (ICD) in 1995 and this contribution is recorded in the LIMCA Book of Records (1997). In 2000, he introduced the technique of multisite pacing system as a therapy for heart failure in the country, which is also recorded in LIMCA Book of Records.

Dr. Talwar has received several honours, most notable a Doctor of Science (Honorary Causa) by Dr. NTR University of Health Sciences, Vijaywada, Andhra Pradesh and Doctor of Science (Med.) (Honoris Causa) by Rajasthan University of Health Sciences, Jaipur as well as Honorary Fellowship, International Medical Sciences Academy. Dr. Talwar is a Fellow of several national and international

organizations including the National Academy of Medical Sciences, Indian National Science Academy, Indian Society of Cardiology, International Academy of Cardiovascular Sciences, Indian Society of Electrophysiology, Punjab Science Academy and the American College of Cardiology.

Dr. Talwar has also received several academic and professional awards including the Padma Bhushan (2006), which is the 3rd highest civilian award in India, the BC Roy National Award (2000) for Eminent Teacher, Aryabhata Award (Indian National Science Academy-2012), Basanti Devi Amir Chand Award (ICMR-2003), Lifetime Achievement Award by Cardiological Society of India (2019), Lifetime Achievement Award by University Institute of Health Sciences, CSJM University, Kanpur (2019).

Dr. Ajay Bahl



Dr. Ajay Bahl

Dr. Ajay Bahl is currently Professor, Department of Cardiology, Postgraduate Institute of Medical Education and Research, Chandigarh, India. He completed his MBBS degree in 1987 from the Armed Forces Medical College, Pune, India and went on to attain MD degree in General Medicine from the same institution in 1994.

Dr. Bahl received Diplomate National Board in General Medicine from the, National Board of Examinations, New Delhi in 1995 and MRCP (UK) in 2002. In 2001, he received DM degree in Cardiology

from the Postgraduate Institute of Medical Education and Research, Chandigarh.

He has received a number of awards and scholarships, most notable he was the recipient of the Colonel KK Gupta Memorial Gold Medal award from the Armed Forces Medical College, Pune for standing first in the Advanced Medicine course in 1993. In 1994, he was the recipient of the Lieutenant General Inder Singh Gold Medal awarded by the Armed Forces Medical College, Pune for standing first in the MD General Medicine Examination of Pune University.

In the same year Dr. Bahl also received the Late Ganesh Krishna Kinare Prize awarded by the Pune University for standing first in the university in the MD General Medicine Examination and the Hari Malini Joshi Gold Medal awarded by the Pune University for standing first in the university in the MD General Medicine Examination all in 1994.

Dr. Bahl is a Fellow of the Royal College of Physicians (London, U.K.) since 2016. Dr. Bahl has published 91 full- papers in peer-reviewed journals and 17 chapters in books/monographs. Current research projects include the establishment of clinical database of sequence variations and elucidation of molecular mechanisms in pathophysiology of primary cardiomyopathies using patient specific induced pluripotent stem cells, creating a National heart failure registry and the impact of heart failure on household economic wellbeing.

Dr. Bahl has extensive editorial experience as Assistant Editor for Indian Journal of Cardiology (2003-06), member of editorial board of Asian Journal of Medical Sciences (2009-13), member of Editorial board of Cardiogenetics (2011-20), Section Editor hypertrophic cardiomyopathy and heart failure of the Indian Heart Journal (2012-4), Section Editor restrictive heart disease of Indian Heart Journal (2015-18), member of editorial advisory board for cardiomyopathies of Indian Heart Journal (2019-20), member of editorial board of Journal of Perioperative

Echocardiography (2013-16) and most recently Editor of Genomic and Molecular Cardiology (2020-22).

He is a member of several organizations/societies including Association of Physicians of India, Cardiological Society of India, Pediatric Cardiac Society of India, European Society of Cardiology, Heart Failure Association of the European Society of Cardiology and the World Heart Failure Society.

Dr. Mukesh Nandave



Dr. Mukesh Nandave

Dr. Mukesh Nandave is currently Associate Professor and Head of Dept. of Pharmacology and Pharmaceutical Biotechnology at Delhi Pharmaceutical Sciences and Research University, Govt. of NCT of Delhi, New Delhi. Dr. Nandave earned his Ph. D. in Pharmacology from AIIMS, Delhi and received his Post-Doctoral training from the Division of Cardiothoracic Surgery, the Ohio State University Medical Center, Columbus, USA.

Since more than 19 years Dr. Nandave has been investigating the role of nutraceuticals, herbomineral formulations, plant extracts & phytoconstituents for Myocardial ischemia & reperfusion injury, Diabetes, Obesity, and Pain management.

He has published more than 75 papers in peer-reviewed national and international journals. His lab received more than 2.5 crore total funding from Govt. (DBT, DST, ICMR and AYUSH) as well as industry (Pharmazz, Dabur, Charak, Madhavbaug, Sandu).

Dr. Nandave has received numerous awards Distinguished Leadership Award of International Academy of Cardiovascular Sciences; G. Achari Gold Medal by Indian Pharmacological Society; Association of Pharmaceutical Teachers of India (APTI) Young Pharmacy Teacher of the Year Award, Early Investigator Award by International Society for Heart Research, Prof. Duggirala Visweswaram & Prof. Sreemantula Satyanarayana Prize; Best Research Output of the Year for 2014-2015, 2013-2014, and 2012-2013 Award" of SVKM's NMIMS University and the Indus Foundation's Award for Research Excellence.

Dr. Nandave is Secretary General, International Academy of Cardiovascular Sciences (IACS)-India Section and Treasurer of Society for Promotion and Research of Cardiovascular Sciences (SPARCS). He is life member of various professional bodies including International Society for Heart Research (ISHR), International Academy of Cardiovascular Sciences (IACS); Indian Pharmacological Society (IPS); Indian Pharmaceutical Association (IPA); Association of Physiologist and Pharmacologist of India (APPI); Association of Pharmaceutical Teachers of India (APTI); and Society for Ethnopharmacology. He is also Secretary General of International Academy of Cardiovascular Sciences (IACS), India Section.

Dr. C.C. Kartha



Dr. C.C. Kartha

Chandrasekharan Cheranellore Kartha (born 1951) is presently Honorary Senior Adviser for Society for Continuing Medical Education & Research at Kerala Institute of Medical Sciences at Trivandrum, India. Immediately before joining this position, he was Honorary Distinguished Professor of Disease Biology and Molecular Medicine at Rajiv Gandhi Center for Biotechnology, an autonomous institute under the Department of Biotechnology, Government of India. He was earlier Senior Professor and founder Head of the Division of Cellular and Molecular Cardiology at Sree Chitra Tirunal Institute for Medical Sciences and Technology, an Institute of National Importance under Department of Science and Technology, Government of India. He also served as the Dean of academic affairs of the Institute in the years 2000-2003.

He is the current President of the Indian Section of International Academy of Cardiovascular Sciences. He is also Chairman of the Advisory Committee for the Multidisciplinary Research Unit at Government Medical College, Trivandrum.

Kartha has an outstanding record as a cardiovascular pathologist and as a serious investigator in cardiovascular disease biology. His contributions to the understanding of molecular basis of diseases have received acclaim among physicians and scientists alike over the years. A notable feature of his research is the distinct emphasis on questions directly related to mechanisms of human cardiovascular diseases. He has employed tools of cell biology, biochemistry, physiology, pharmacology, molecular biology, experimental cardiology and epidemiology for his

pursuits. He has thus been able to provide a link between basic sciences and clinical cardiology to the young investigators he has trained.

Kartha graduated from Trivandrum Medical College in the year 1974 and took his MD degree in Pathology from All India Institute of Medical Sciences, New Delhi in 1979. He joined Sree Chitra Tirunal Institute in its formative years as Lecturer in Pathology and rose to the position of Additional Professor of Pathology in 1988. He was responsible for organizing and leading the cardiac pathology services and an electron microscopy laboratory in the Institute. He was also associated with the early stages of development of disposable blood bags, dental materials and a large diameter vascular graft. In 1993, he was appointed as the Professor and head of the then newly created Division of Cellular and Molecular Cardiology, an interdisciplinary group for cardiovascular research. He is credited with organizing the first Molecular Cardiology division in India.

During the early part of his career, his focus was to delineate the cause of endomyocardial fibrosis, a tropical cardiomyopathy. His studies disengaged the aetiopathogenesis of the disease from a confusing network of hypotheses and placed it in the context of a geochemical cause with the primary tissue response being interstitial in nature. Kartha has evaluated through experimental and epidemiological studies, the geochemical hypothesis proposed by MS.Valiathan and Kartha. His studies on endomyocardial fibrosis spurred his interest in the biology of cardiac endothelium and he has made original contributions to the current understanding of the role of endocardial endothelium in the regulation of cardiac function and in cardiac remodeling secondary to cardiac failure.

In 2009, Kartha was invited by Rajiv Gandhi Centre for Biotechnology as Professor of Eminence to initiate translational cardiovascular biology and establish a division of cardiovascular disease biology at the Centre. He has established a most comprehensive interdisciplinary laboratory for cardiovascular research at Rajiv Gandhi Centre, where he also initiated research on a broad range of clinically relevant themes which include, cardiac stem cell biology, vascular disease in type 2 diabetes, hereditary basis for varicose veins, molecular pathogenesis of cerebral arterio-venous malformations, and endothelial remodeling in cardiac failure. These

efforts have led to identification of cyclophilin A as a biomarker for vascular disease in type 2 diabetes and the discovery that Forkhead box C2 promoter variant c.-512C.T is associated with increased susceptibility to varicose veins. Another interesting work of his is the finding that chronic pressure overload results in deficiency of mitochondrial membrane transporter ABCB7 which contributes to metabolic shift and worsens cardiac function. He has also made forays into the emerging discipline of Ayurvedic Biology. His studies have demonstrated that a rejuvenating medicine prepared from *Phyllanthus Embilica* enhances cardiac mitochondrial and contractile functions and improves cardiac function.

Kartha is an elected Fellow of Royal College of Physicians, London, International Academy of

Cardiovascular Sciences (Canada), National Academy of Medical Sciences (India), Indian Academy of Sciences, National Academy of Sciences (India) and Indian College of Pathology.

He has served in the Council of Indian Academy of Sciences, editorial boards of several peer reviewed international journals and on several national and institutional committees.

He has received Makoto Nagano Award, Ramesh K Goyal Oration Award and Distinguished Leadership Award from International Academy of Cardiovascular Sciences. He is also a recipient of Manjeet Singh Oration Award from Indian Section of International Society for Heart Research.

Editorial Corrections

The following are corrections for CV Network Volume 21 No. 3 September, 2022

Page 34: Recognition of conference organizers and some distinguished speakers at the Szeged meeting, September 28- October 1, 2022

Howard Morgan Award for Distinguished Achievements in Cardiovascular Research: Dr. Dragan M. Djuric, IACS promoter and Member of IACS Executive Council.

Naranjan Dhalla Award for Innovative Investigators in Cardiovascular Sciences: Dr. Chandrasekharan C. Kartha, Past President of IACS-India Section.

James Willerson Award for Excellence in Cardiovascular Sciences: Dr. Andras Varro, President, IACS-European Section.

The following are corrections for 2022 CV Network issues Vol 21 No. 4 December, 2022

Page 15: Report of the 8th European Section Meeting of the IACS, Szeged, Hungary



Dr. Djuric (C) receiving Howard Morgan Award from Drs. Pierce (L) and Baczkó (R)



Dr. Varro (C) receiving James Willerson Award from Drs. Pierce (L) and Baczkó (R)

Report on the Joint IACS-India Section and ISHR-Indian Section Meeting on Advancement of Cardiovascular Medicine and Research Chandigarh, India, February 16-18, 2023

Anupam Mittal¹ and Mukesh Nandave²
¹PGIMER, Chandigarh and ²DPSRU, New Delhi, India
Email: pamspgister@gmail.com

A three-day conference on the Advancement of cardiovascular medicine and research was organized by the Cardiovascular research group (CRG) of PGIMER from 16-18 February 2023 under the aegis of IACS-India Section and ISHR Indian- section. This meeting was held in physical mode for the first time after the COVID pandemic. Around 220 delegates from India and various countries including the United Kingdom, Canada, and USA attended the meeting.



Lamp lighting ceremony during the inauguration

The meeting's inaugural ceremony was presided over by Dr. Rajiv Bahl, Director-General, ICMR as Chief Guest, and Dr. Vivek Lal, Director, PGIMER, Chandigarh was the Guest of honor.



Release of e-souvenir book at the inaugural ceremony



Dr. Raja Sebastian talked on the fundamentals of confocal microscopy

Inauguration was attended by other dignitaries like Dr. KK Talwar, and Dr RK Goyal and it was started by a welcome address by Chair Dr. Saurabh Mehrotra and concluded with vote of thanks by Dr. Anupam Mittal organizing secretary. There were many dignitaries like Dr. NK Ganguly, Dr. NS Dhalla who attended the inaugural meeting. A pre-conference workshop on Light Microscopy and Confocal microscopy was organized on 16th Feb and more than 70 delegates attended the workshop. There was another workshop on left bundle pacing for residents. On the first day, the meeting started with introduction of CRG by Anupam Mittal.



Research students attending the microscopy workshop

International and national speakers discussed the role of genetics and epigenetics in the pathogenesis of heart diseases. The young research scientists presented their research work in cardiovascular diseases for NS Dhalla and Suresh C. Tyagi award for basic research.

Day 2 started with talk from two eminent scientists, Dr. K. Thangaraj (Director, CDFD) and Dr. Mary Sheppard from St. George university, London spoke on Rheumatic heart disease and sudden cardiac death. This was followed by a plenary talk by Dr. Naranjan S. Dhalla, Honorary Life President of the IACS, on the mechanisms for the loss of adrenergic support in heart failure.



Dr. Mary Sheppard delivering talk on sudden cardiac death

Dr. Gurpreet Singh Wander delivered Prof. PL Wahi oration and spoke on role of genetics and environment in heart disease in South Asian population. There were sessions on clinical interventions in cardiovascular medicine and new technologies in heart disease.



Students presenting their work as e-poster in Dr. N.S. Dhalla and Dr. D.K. Agrawal Poster Session



Dr. Gurpreet Singh Wander delivering the Prof. P.L. Wahi oration

During lunch, students presented their work in the form of e-posters in Zakir Hall. In the evening, young clinical scientist presented their work in NK Ganguly Award category.

Following the afternoon tea break was the Prof. Ramesh K. Goyal Oration given by Dr. Rajiv Narang who spoke about ventricular assist devices and artificial heart: current status. The day was concluded by talk from eminent cardiologist Dr. Jagat Narula as he delivered Prof. ML Bhatia oration on reducing cholesterol levels among the population. This was followed by presentation of IACS Awards and the Banquet Dinner in the lavish Hyatt Centric Lawns. The IACS bestowed Dr. K.K. Talwar with the Lifetime Achievement Award, and Drs. Ajay Bahl and Mukesh Nandave with the Distinguished Leadership Award.

Day 3 started with two orations Dr. Srinivas Tipparaju delivered Prof. Harpal Buttar Oration and Dr. Nitish Mahapatra delivered Prof. Manjit Singh oration. There were talks on new developments in cardiovascular medicine and technology transfer, IPR and a dedicated session on Artificial Intelligence and cardiovascular diseases. Dr. Ambuj Roy, Dr. Gautam Sharma and Dr. S Ramakrishnan from AIIMS New Delhi were selected for Torrent Mid-career award. Various speakers talked about new developments in Stem cells and cardiac regenerative tools. Dr. Sanjiv Dhingra from Winnipeg talked about the importance of sustenance of stem cell therapy in an in-vivo system. The day concluded with a valedictory function followed with Hi-Tea.



Other speakers during the session on sudden cardiac death



IACS Awards presented to Dr. K.K. Talwar (top left), Dr. Ajay Bahl (top right), Dr. Mukesh Nandave (bottom left) and Dr. C.C. Kartha (bottom right)

As per the aim, this meeting brought a lot of cardiac biologists and researchers on the same platform emphasizing the need for translational research. The meeting organizers are thankful to the support provided by the IACS as well as several companies that supported the conference, these include Aareen Haelthcare PVT. Ltd., Abbott, USV, Cipla, IPCA, SERVIER, Sanctus Global, Merck, Terumo, Vector, Intas and Addii. The organizers are appreciative of several international speakers that were in attendance of the conference.



Dr. Sanjiv Dhingra Receiving the Dr. Rakesh C. Kukreja Oration Award



Dr. Rajiv Narang Receiving the Dr. Ramesh K. Goyal Oration Award (top left), Dr. Gautum Sharma Receiving Torrent Mid-Career Award (top right), Drs. Mukesh Nandave (bottom left) and Anupam Mittal (bottom right) Receiving awards from Dr. Ramesh Goyal (pictured right in photos)



**ACADEMY OF
CARDIOVASCULAR SCIENCES**



**INDIA SECTION OF
INTERNATIONAL ACADEMY OF
CARDIOVASCULAR SCIENCES**

10th Annual Meeting of the North American Section of the
International Academy of Cardiovascular Sciences

TAMPA, FLORIDA, SEPTEMBER 7-9, 2023



Picture courtesy: Visit Tampa Bay

Scientific Symposium:

- Heart Failure
- Cardiovascular Aging
- Cardiovascular Regeneration
- Cardiovascular Medicine

Named Awards For:

- Established Investigators
- Young Investigators
- Graduate Students
- Poster presentations

CONTACT INFORMATION:

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Conference Co-Chair

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Chief, Division of Cardiovascular Sciences
Tampa General Hospital
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The meeting will comprise of both basic science and clinical sessions, including 80 invited speakers in 20 different symposia in diverse areas of cardiovascular science and medicine covering a range of topics including heart failure, cardiovascular aging, cardiovascular regeneration, cardiovascular medicine. There will be 4 plenary lectures and 2 poster sessions. Young investigators and graduate students will be provided with an opportunity to present their findings and to compete in both oral and poster competitions.

REGISTRATION DATES:

Early Bird Registration Due date: July 1, 2023: \$450 US

Late registration: July 2- September 5, 2023: \$600 US

Onsite Registration: \$700 US

Student/Trainee Registration before July 1, 2023: \$300 US

Late registration for student/ Trainee after July 1, 2023: \$400 US

Registration fee includes, one reception, one gala dinner, two lunches and four coffee breaks

MEETING VENUE AND HOTEL INFORMATION HOTEL BOOKING:

The meeting will take place at the Conference Hotel: Embassy Suites at USF Busch Gardens: Attendees can book the conference hotel where the event is planned.

Address: Embassy Suites Tampa - USF/Near Busch Gardens, 3705 Spectrum Blvd, Tampa Florida, USA 33612.

Booking code: SRP- US4

Web link: [USF SCIENTIFIC CONFERENCE](#)

For details or technical difficulty with Embassy Suites Hotel booking

Please call: Brooke Powell 813.903.6626

Overflow Hotels in the area: Attendees can also choose from the nearby hotels with options including Home to Suites, Holiday Inn North, or La Quinta (on Fowler Avenue at Market rate during time of booking)

CONFERENCE ABSTRACT SUBMISSION GUIDELINES:

Only abstracts accompanied by the full payment of the registration fee will be considered for inclusion in the final program and publication in abstract book. The transmission of the abstracts via fax, floppy discs, CD or USB by standard mail will not be accepted. Late abstracts will NOT be accepted. The number of abstracts is not limited.

INSTRUCTIONS FOR AUTHORS

- 1) Abstracts should contain short TITLE; a list of AUTHOR(S); the INSTITUTION(S) (Italic) where the investigation was performed and the TEXT.
- 2) The title should be written in CAPITAL and BOLD letters. UNDERLINE the presenting author.
- 3) Abstracts should state the study objective, briefly describe the MATERIALS and METHODS used, summarize the RESULTS obtained and state the CONCLUSIONS.
- 4) The recommended font is Times New Roman and size 12. ALL SUBMISSION MUST BE IN ENGLISH.
- 5) Type the entire abstract single-spaced, WITHOUT margins at the top or sides.
- 6) Abstracts should contain NO MORE THAN 250 WORDS.

Abstracts received after the deadline and abstracts not in compliance to the instructions will not be accepted.

Submit abstract via IACS NAS website link, before deadline of **July 1, 2023**

THE FOLLOWING NAMED AWARDS WILL BE PRESENTED:

- Howard Morgan Award for Distinguished Achievements in Cardiovascular Research
- James Willerson Award for Excellence in Cardiovascular Sciences
- Naranjan Dhalla Award for Innovation in Cardiovascular Sciences
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- Amarjit Arneja Distinguished Lecture Award for Prevention of Heart Disease
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YOUNG INVESTIGATOR, GRADUATE STUDENT COMPETITIONS AND NAMED POSTER AWARDS:

- Roberto Bolli Young Investigator Award Competition (4 contestants)
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- Morris Karmazyn Poster Awards (4)
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PUBLICATION OPPORTUNITY FOR PRESENTERS:

Some selected invited speakers will be encouraged to submit a full manuscript based on the lecture presentation at the conference for consideration for publication in a special issue of the Canadian Journal of Physiology and Pharmacology (<https://cdnsiencepub.com/journal/cjpp>). Submitted manuscript will undergo procedural peer-review process.

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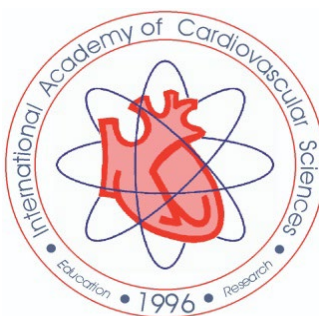
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Healthy Heart Awareness Program Organized by Anand Pharmacy College, Gujarat, India

Tejal Gandhi
Anand Pharmacy College, Opp. Town Hall
Anand, Gujarat, India
Email: gandhi.tejal@hotmail.com

Anand Pharmacy College, Anand celebrated the World Heart Day by organizing “Healthy Heart Awareness Program” during 19-29th Sept, 2022 in association with International Academy of Cardiovascular Sciences (IACS)-India section, supported by All India Council for Technical Education (AICTE), coordinated by IACS members Dr. Tejal R. Gandhi and Ms. Navdha J. Vyas. A series of cardiovascular-related deaths among adolescent, high-profile Indian public figure in the last few years has turned the focus on this group of ailments. Heart problems among Indians have just about doubled in the last period and it is now troubling the young too, keeping this on a view the aim of this program was to spread the awareness about various heart-related diseases and healthy way to live a life disease free with few small and smart steps. The awareness program was organized in five different secondary and higher secondary schools of Anand, Gujarat, India during 19th September to 29th September, 2022. Total 275 students were enlightened in this program. Lastly, questions from the session was also tested and students were motivated with useful rewards.



Dr. Tejal Gandhi

Dr. Tejal R. Gandhi is Professor and Principal, Anand Pharmacy College, Anand, Gujarat and former Dean, GTU. She is Fellow of the IACS and is Vice-President of the India Section of the Academy. In addition, Dr. Gandhi is a member of the IACS-world Advisory Board.

She is an academican with over 29 years of extensive experience in the areas of Pharmaceutical Research. Her present areas of research include Cardiovascular and Metabolic Disorders as well as Nephrolithiasis. She has worked on more than 35 industry and 15 consultancy projects. Dr. Gandhi has, till date, mentored 126 Post Graduate students and 10 Doctoral Fellows. She has published 166 research papers. Her H-index is 26 and i10- index is 56. Ten patents are published on her name and she has received 33 research awards till date. She has delivered various lectures in India as well as in the USA, Canada, Denmark, Germany, Sri Lanka. She is Reviewer of various national and international reputed journals. Dr. Gandhi is felicitated by the Pedagogical Innovation Award in 2013. She has been nominated as Best Pharmacy Teacher of India in 2013 by the Indian Pharmaceutical Congress Trust, and as Best Teacher 2020 by GTU and AICTE. She is also recipient of the Distinguished Leadership Award by IACS, in 2016.

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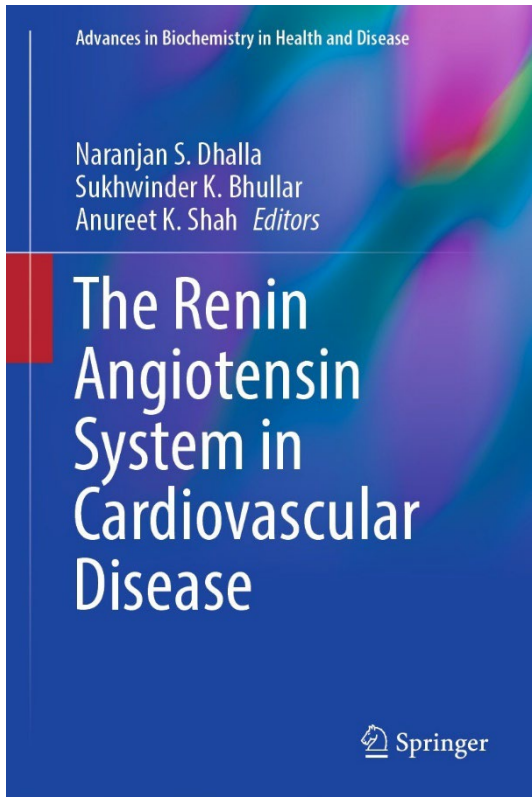
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Springer Publishes Book on the Renin Angiotensin System in Cardiovascular Disease



This book on “Renin-Angiotensin System in Cardiovascular Disease” includes 25 chapters, which are organized in three sections, namely (i) modulatory aspects, (ii) pathophysiological aspects, and (iii) pharmacotherapeutic aspects. It includes an updated as well as comprehensive knowledge about molecular and cellular aspects for the role of the renin-angiotensin

system (RAS) in the pathophysiology and therapy of cardiovascular diseases such as hypertension, atherosclerosis, ischemic heart disease, and heart failure. This book emphasizes the molecular and cellular mechanisms, signaling transduction pathways involved in the development of different cardiovascular diseases due to the prolonged activation of RAS. Furthermore, biochemical mechanisms are outlined for the inhibition of this system by the blockade of angiotensin converting enzyme as well as angiotensin II type 1 receptors in patients suffering from cardiovascular abnormalities. Since cardiovascular disease is the number one cause of death worldwide, leading to approximately 17.9 million deaths each year, there is a keen interest in understanding the pathogenesis and improving its therapy. In this regard, we can attest that this book provides ample information about essential components of RAS and their role in the development of cardiovascular disease.

From the selection of recognized global experts in their area of investigation, this book can be seen to cover diverse cardiovascular aspects and molecular and cellular mechanisms of angiotensin II action for the development of different cardiovascular abnormalities. It is our contention that this book will be most suitable for promoting knowledge in the field of RAS biology and will be of great interest to health professionals involved in both experimental and clinical cardiology as well as academic investigators and cardiovascular scientists, graduate students, and fellows worldwide.

Call for Applications/Nominations for IACS Fellowships

The International Academy of Cardiovascular Sciences bestows Fellowships upon established investigators/promoters of cardiovascular activities all over the world. These individuals are usually full professors, senior scientists and/or high-profile administrators in the area of cardiovascular sciences. At any given time, the total number will not exceed 250. See listing of active Fellows on the Academy website (www.iacsworld.com). Applications/Nominations with 2 pages of major achievements and a brief C.V. should be sent by May 31, 2023 to Dr. N.S. Dhalla, Executive Directors, IACS, St. Boniface Albrechtsen Research Centre, Winnipeg, Canada (Email: nsdhalla@sbrc.ca).

Application of Molecular Hydrogen in the Cardiac Surgery-Associated Acute Kidney Injury

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Introduction

Acute kidney injury (AKI) is a long-recognized complication of cardiac surgery and the strongest risk factor for death in patients undergoing cardiac surgery [1,2]. Patients with AKI stay longer in hospital, have increased financial burden, and increased in-hospital and 1-year mortality [3]. AKI is a frequent complication in surgeries requiring connection to extracorporeal circulation (ECC), with an incidence of up to 84% [4,5]. Several studies have confirmed that the use of ECC can lead to hypoxia reperfusion injury, systematic inflammation and hemolysis which in turn trigger oxidative stress [4,6]. The mechanism that affects the development of AKI is not yet fully understood, but it is believed that the main factors are renal hypo-perfusion, inflammation, nephrotoxic drugs and also oxidative stress [2,7]. Because the early and rapid treatment of AKI is an important part of the management of patients [8], numerous antioxidant compounds were tested to mitigate oxidative stress response during cardiac surgery [7,9]. Thus, approaches aimed at inhibiting excessive oxidative stress may be an attractive strategy for preventing cardiac surgery-associated AKI [10]. Recently, it has been found that molecular hydrogen (H₂) has a protective effect against the damage of various cells and organs mainly due to its antioxidant activity, as well as it can have anti-apoptotic, anti-inflammatory, and anti-allergic effects [11–13]. Moreover, H₂ preconditioning was effective to reduce inflammation responses in ventilator-induced lung injury [14]. Additionally, it was proven that H₂-rich preservation solutions have high antioxidant potential and they were tested in various transplanted organs [15,16]. Since up to 76% of heart transplant recipients have been found to meet the criteria for post-operative AKI [3], we decided to verify renoprotective effect of the H₂ directly in the pig model of simulated heart transplantation.

Materials & methods

Biological model

We evaluated the potential effect of H₂ application on the kidney in an in vivo model of cardiac surgery. Black-Pied pigs were used for the simulation of heart transplantation that started by cold crystalloid cardioplegia (4°C) and occluding venae cavae and pulmonary veins, cross-clamping of ascending aorta, and connection to ECC. Cardioplegia was administered for 3 hours. After the time of cold arrest, the coronary arteries were rinsed with Plasmalyte solution, and the aortic clamp was released. This was followed by rewarming the heart and detaching from ECC. After 60 minutes of spontaneous heart reperfusion, the experiment was terminated. We used 2 experimental groups: T – pigs after transplantation (n=5), TH – pigs after transplantation treated with H₂ (n=5) that was applied in gaseous form (3% H₂ mixed with air) during inhalation of anesthesia, as well as during oxygenation of blood in ECC. To determine the effectiveness of H₂, we collected blood before connecting to the ECC as well as one hour after spontaneous reperfusion of the heart (Fig. 1).

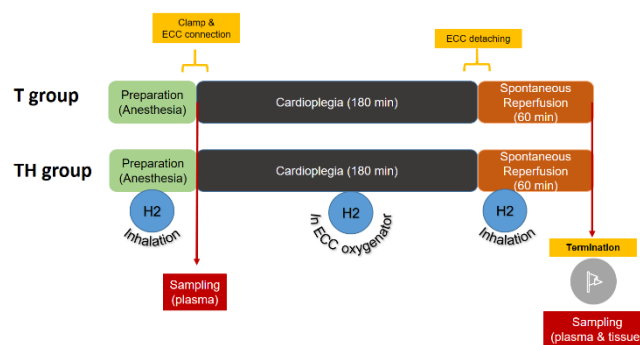


Figure 1: Scheme of biological model

Biomarkers of the kidney injury measurement

Biomarkers of kidney damage (creatinine, uric acid, calcium, phosphorus) were measured in blood plasma (100 µl) using dry chemistry analyzer FUJIFILM NX 500 (Tokyo, Japan).

Western blot analysis

The samples were analyzed as previously described [17]. Briefly, the tissue samples from pig kidney cortex were re-suspended in ice-cold buffer. The homogenates were centrifuged (800 x g, 5 min, 4°C). Pellets were discarded after centrifugation and the supernatants were centrifuged again (16 100 x g, 30 min, 4°C). Supernatants after the second centrifugation were used for Western blot analysis of cytosolic proteins. The protein concentrations were estimated by the method of Bradford [18]. Samples containing equivalent amounts of proteins per lane were separated by sodium dodecyl sulfate-polyacrylamide gel electrophoresis. For Western blot assays, separated proteins were transferred from gel to a nitrocellulose membrane. Specific antibodies against Nrf2 (H-300), Keap-1 (G-2) and SOD were used for the primary immunodetection. Peroxidase-labelled Anti-mouse and Anti-rabbit immunoglobulins were used as the secondary antibodies. Peroxidase reactions were detected by the enhanced chemiluminescence system and quantified using Amersham Imager 600 (GE Healthcare, Chicago, U.S.A.). Densitometrical quantification of protein levels was performed using the ImageJ software ver. 1.54b by comparison to loading control β -actin and GAPDH and corresponding anti-mouse and anti-rabbit secondary antibody.

Statistical analysis

The significance of differences between the individual groups were determined using a Student's t-test. A value of $p < 0.05$ was considered as significant.

Results

Simulated heart transplantation was followed by significant ($p < 0.05$) increased levels of creatinine, uric acid, and phosphorus in the samples harvested after one hour lasting spontaneous reperfusion of the heart. On the other hand, levels of calcium were elevated but not statistically significant. In the experimental group treated with H2, we observed the normalization of all these parameters when compared to samples without H2 treatment.

Our results from Western blot suggest activation of Nrf2/Keap1 pathway in the renal cortex of the pigs treated with H2 ($p < 0.05$). Similarly, we observed increase of the SOD protein expression in the samples of the group treated with H2 ($p < 0.05$).

Discussion

As mentioned previously, the exact pathophysiological mechanisms of CS-AKI is not yet fully understood. It is believed that oxidative stress generated by the ischemia-reperfusion injury may play a role in the development of postoperative AKI [2,19,20]. In this context, evidence shows that H2 has multi-faceted pharmacological effects such as antioxidant, anti-inflammatory, and anti-apoptotic properties and could represent an AKI alleviating agent. An increased number of studies are being aimed at the application of H2 in various diseases [21] as well as in surgical interventions, including transplants, with promising results [22]. On the other hand, there is still a lack of information about the effects of H2 in the conditions of CS-AKI.

In this study, the beneficial and renoprotective effect of H2 supplementation on the pig's kidney after simulated heart transplantation was demonstrated. In general, AKI is defined by a rapid increase in plasma creatinine [8] that occurs during a decrease of glomerular filtration rate (GFR) [23,24]. Changes in serum creatinine is neither sensitive nor specific for AKI, yet it is the cornerstone of current diagnostic approach [8]. Moreover, even a small increase (0.3–0.5 mg/dl) in serum creatinine after cardiac surgery is associated with a nearly 3-fold increase in 30-day mortality [25]. In our experiment, kidney damage was confirmed, as evidenced by significantly higher plasma creatinine levels after simulated heart transplantation. This observation is in accordance with generally known fact, that after cardiac surgery is presence of an increase in creatinine levels [26]. The use of H2 was accompanied by a significant decrease in postoperative creatinine levels, indicating an improvement in renal function.

Rapid loss of the kidney's excretory function is typically diagnosed also by the accumulation of uric acid, another well-known end product of nitrogen metabolism [27]. Our results point to significant increase of postoperative uric acid levels in the blood plasma. It was documented that serum uric acid may predict development of progressive AKI after open heart surgery [28]. Moreover, increasing levels of uric acid are associated with poorer survival after coronary artery bypass grafting [29,30]. In our study, treatment with H2 significantly reduced postoperative concentration of uric acid in the blood plasma indicating protection of the kidney as well as better prognosis of animal survival.

Calcium as well as phosphorus are not specific biomarkers for AKI but are frequently used as a support for diagnosis of renal damage. The reversible decrease in GFR in severe hypercalcemia is thought to be mediated in part by direct renal vasoconstriction. This has been shown in a study comparing renal blood flow and GFR in

hypercalcemic and normocalcemic rats [31]. Hypercalcemia is known to cause AKI and may provoke acute renal failure [32]. Increased level of phosphorus in plasma occurs due to a decreasing GFR and after cardiac surgery, serum phosphorus seems to be a simple, reliable and inexpensive biomarker at bedside for AKI monitoring [33]. In our experiment, a significant increase in calcium as well as phosphorus in the plasma was measured after heart surgery. Treatment with H₂ decreased these levels, indicating a better condition of the kidneys.

It is believed that H₂ modulates Keap1/Nrf2 pathway, which is important in protection against oxidative stress [11,34,35]. Nrf2 plays a key role in the transcriptional induction of various antioxidants, including SOD, so identification of molecules that can induce Nrf2 activation has recently received considerable attention [35,36]. Hydrogen's ability to influence the regulation of various signaling pathways appears to be an important mechanism for its antioxidant action. It was documented in various models that H₂ protects organisms by activating Nrf2 signaling pathway [11,34,37–39]. Similarly, the results of our study showed that H₂ treatment activated the Nrf2 pathway and the associated overexpression of antioxidant enzymes such as SOD.

Conclusion

To conclude, our study demonstrated a significant reduction of selected biomarkers of kidney injury after simulated heart transplantation in pigs which received H₂. Our results suggest that H₂ might be an effective tool for reduction of AKI after simulated heart transplantation.

Funding

APVV-15-0376, APVV-19-0317, ITMS 26230120009, 2018/7838:1-26C0, 2019/4-CEMSAV1, VEGA 2/0063/18, 2/0092/22, and 2/0148/22.

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Vitamins as Essential Nutrients in Human Health and Disease

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More than 100 years ago, Dr Casimir Funk suggested the existence of a family of organic substances that are essential for life and thus introduced the concept of “vital amines” as essential nutrients with a specific action, requiring only minute amount with the power to cure a specific disease. According to Fortune Business Insights, the global vitamins and supplements market size was USD 119.66 billion worldwide in 2020. Furthermore, with an accelerated interest and concerns over health and well-being, consumers are increasing their efforts to incorporate vitamins as well as supplements in their diet. Globally, it has been estimated that 60% of consumers are taking vitamin supplements as a daily routine. With innovation, knowledge and technological advances it is expected that this trend will continue across the world.

According to Statistics Canada, sales of vitamins, minerals and other health supplements amounted to approximately 1.7 billion CAD in the 1st half of 2021. On an average, Americans spend more than \$30 billion USD a year on dietary supplements, vitamins and minerals (approx. 20 times).

As awareness of vitamin functions and their integral role in preventing various health conditions such as cardiovascular disease, cancer, metabolic, immune and inflammatory ailments, increases, it is important to educate the masses on actual requirements of the vitamin considering their wide availability in the natural food sources. It is also of prime importance to discuss the required amounts of these micronutrients to avoid the possible toxic effects associated with their over consumption in the form of supplements.

There are 13 vitamins essential for human health and are grouped according to whether they are soluble in water (hydrophilic) or in non-polar solvents (lipophilic). The hydrophilic vitamins are vitamin C and a series known as the vitamin B complex. Vitamin C is a reducing agent, whereas the vitamin B series are components of coenzymes. For example, riboflavin (vitamin B2) is a precursor of flavin adenine dinucleotide (FAD) and

pantothenate (vitamin B5) is a component of coenzyme A. Indeed, several coenzymes contain a vitamin as part of their structure; this relation is undoubtedly responsible for creating an “essential” role for the vitamin.

Similarly, much is known about the cellular and metabolic actions of lipophilic vitamins, which are designated by the letters A, D, E and K. Vitamin K is, for example, required for normal blood clotting. Vitamin A (retinol) is the precursor of retinal, the light-absorbing group in visual pigments. A deficiency of this vitamin results in night blindness. The metabolism of calcium and phosphorus is regulated by a hormone that is derived from vitamin D. Deficiency in vitamin D impairs bone formation during growth. Vitamin E protects unsaturated membrane lipids from oxidation. Since the lipophilic vitamins are involved in a wide variety of biological processes, these are also considered as essential nutrients.

The essential nature of vitamins as well as their biochemistry, molecular mechanisms and cellular function in health and disease outside of traditional metabolic regulatory roles is now the focus of extensive research that could contribute to advancing preventive medicine worldwide.

While scientific and clinical exploration of vitamins has escalated, interest in the public domain has also gained notable attention. Furthermore, since adequate amounts of vitamins are required for normal metabolic and cellular function, their deficiencies are detrimental to human health in adults as well as in children and adolescents. On the other hand, while toxicity of the hydrophilic vitamins does not occur because these are easily excreted when in excess, toxicity of the lipophilic vitamins can occur as they are stored in the tissues.

Overall, in view of the multifaceted functionality of vitamins, understanding the role and value of these essential micronutrients in human health and disease either as part of a strategy for the prevention of disease or as therapeutic adjuncts is of high importance.

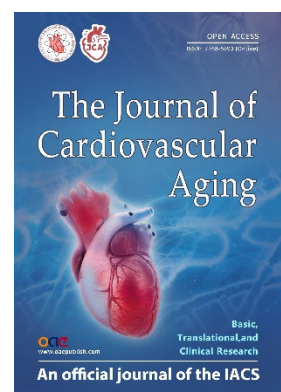
Partnering Journals of the IACS



Canadian Journal of Physiology and Pharmacology
Impact Factor: 2.273

Editor:
Dr. Lorrie A. Kirshenbaum

Editorial Office:
Canadian Science Publisher
1840 Woodward Drive, Suite 1
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The Journal of Cardiovascular Aging
An Open Access Journal

Editor:
Dr. Ali J. Marian

Editorial Office:
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Alhambra, CA 91801, USA
Email: editorialoffice@cardiovascularaging.com;
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American Journal of Cardiovascular Drugs
Impact Factor: 3.283; CiteScore: 5.9

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74 Taharoto Road, Takapuna
Auckland, 0622, New Zealand
Email: amitabh.prakash@springer.com



Heart Failure Reviews
Impact Factor: 4.214

Editors:
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Dr. Hani N. Sabbah

Editorial Office:
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New York, NY 10013-1578 USA
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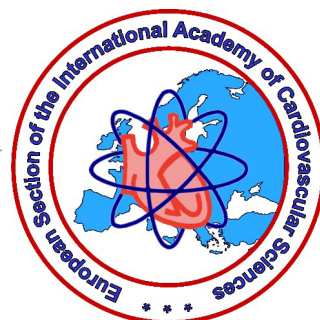
IACS partnering journals:

1. *Canadian Journal of Physiology and Pharmacology*
2. *The Journal of Cardiovascular Aging*
3. *American Journal of Cardiovascular Drugs*
4. *Heart Failure Reviews*

Readers are encouraged to submit original research articles and reviews to these partnering journals.



„VICTOR BABES“ UNIVERSITY
OF MEDICINE AND PHARMACY
FROM TIMISOARA



9th European Section Meeting of the International Academy of Cardiovascular Sciences

October 4 – 7, 2023

Timișoara, Romania



FIRST ANNOUNCEMENT

Contact information

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Dear Colleagues,

It is our great pleasure to announce that the **9th European Section Meeting of the International Academy of Cardiovascular Sciences (IACS-ES)** will be held between October 4th – 7th, 2023 in Timișoara, Romania. On behalf of the Organizing and Program Committees, we are pleased to bring to your attention that the conference will be comprised of several symposia focusing on the following scientific topics:

- **Pathophysiology and therapeutic strategies in heart failure**
- **Myocardial injury and cardioprotection**
- **Basic and clinical electrophysiology of ventricular arrhythmias**
- **Atrial fibrillation and dysfunction: mechanisms and future therapeutic directions**
- **Calcium handling abnormalities**
- **Apoptosis, autophagy and stress signaling**
- **Mitochondrial pathways in cardiovascular pathology**
- **Inflammation in cardiovascular dysfunction**
- **Regenerative cardiology**
- **Hypertension and vascular remodeling**
- **Novel targets in cardio-metabolic diseases**
- **Epigenetic, transcription, translation and crosstalk in the heart**
- **Digital health and telemedicine**
- **Cardiovascular prevention**

The scientific program is diverse and state-of-the-art with internationally distinguished invited speakers, which will address a broad mix of molecular, cellular, translational, clinical and integrative aspects of cardiovascular sciences.

The meeting will serve as a platform for the exchange of new ideas and concepts and will offer a great educational opportunity for advancing career development of early and mid-career trainees, personal interactions and networking for all the participants. We would like to provide the opportunity for a number of young investigators to present their latest results and compete in both oral and poster sessions and we strongly support the attendance from undergraduate students.

The meeting will be held at the "Victor Babes" University of Medicine and Pharmacy from Timișoara, the largest medical university with international accreditation from Western Romania.

We believe that your participation will provide a unique opportunity to discuss the latest advances in basic and clinical cardiovascular research. We trust that the combination of outstanding speakers, cutting edge themes and meeting venue will offer a great scientific experience and contribute to the success of the conference.

In addition to the thought-provoking conference, the organizers wish to inform you that Timișoara is one of three nominated European Capitals of Culture 2023, having as slogan a vivid message: "Shine Your Light!" and promise you lasting impressions besides the productive exchanges.

We invite you to shine your light at this meeting, to renew old friendships and to make new ones!

We look forward to welcoming you in Timișoara,

With best regards,

Prof. Danina M. Muntean, MD, PhD
Vice President, IACS-Europe
Chair of the Meeting

HONORARY CHAIR OF THE MEETING:

Prof. Naranjan S. Dhalla, PhD, MD (Hon), DSc (Hon)

PRESIDENT OF THE MEETING:

Prof. Octavian M. Crețu, MD, PhD, Rector of the University

MAIN ORGANIZERS, VICE RECTORS OF THE UNIVERSITY:

Prof. Claudia Borza, MD, PhD

Prof. Daniel Lighezan, MD, PhD

Prof. Cristian Oancea, MD, PhD

ORGANIZING SECRETARIAT:

Dr. Adrian Sturza, MD, PhD

Dr. Maria Danila, MD, PhD

Department of Functional Sciences – Pathophysiology,
Center for Translational Research and Systems Medicine,

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MEETING VENUE:

“Victor Babeș” University of Medicine and Pharmacy of Timișoara
2, E.Murgu Sq., 300041 Timișoara, Romania



ORGANIZING COMMITTEES:

International Organizing Committee:

Naranjan Dhalla, CEO, IACS (Winnipeg, Canada)

Vladimir Jakovljevic, President IACS-Europe (Kragujevac, Serbia)

Grant Pierce, President IACS (Winnipeg, Canada)

Michael Czubryt, President IACS North-American Section (Winnipeg, Canada)

András Varró, President-Elect, IACS (Szeged, Hungary)

Baczkó István, Secretary General IACS-Europe (Szeged, Hungary)

INTERNATIONAL PROGRAM COMMITTEE/ PROPOSED INVITED SPEAKERS

Angoulvant Denis (Tours, France)
Agrawal Devendra (Omaha, USA)
Bartekova Monika (Bratislava, Slovakia)
Bejan-Angoulvant Theodora (Tours, France)
Bolli Roberto (Louisville, USA)
Czubryt Michael (Winnipeg, Canada)
Beltowski Jerzy (Lublin, Poland)
Casadei Barbara (Oxford, UK)
Choplicki Stefan (Krakow, Poland)
Cosentino Francesco (Stockholm, Sweden)
Djuric Dragan (Belgrade, Serbia)
Dobrev Dobromir (Essen, Germany)
D'Souza Alicia (Manchester, UK)
Dibb Katharine (Manchester, UK)
Eisner David (Manchester, UK)
Ferdinandy Peter (Budapest, Hungary)
Fischmeister Rodolphe (Paris, France)
Gallyas Ferenc (Pecs, Hungary)
Gelpi Ricardo (Buenos Aires, Argentina)
Hancox Jules (Bristol, UK)
Hezzel Melanie (Bristol, UK)
Heusch Gerd (Essen, Germany)
Jalife José (Madrid, Spain)
Jespersen Thomas (Copenhagen, Denmark)
Jost Norbert (Szeged, Hungary)
Kararigas Georgios (Reykjavik, Iceland)
Kirshenbaum Lorrie (Winnipeg, Canada)

Kiss Attila (Vienna, Austria)
Lazou Antigone (Thessaloniki, Greece)
Lopaschuk Gary (Edmonton, Canada)
Lüscher Thomas (London, UK)
Michalak Marek (Edmonton, Canada)
Morad Martin (Charleston, USA)
Nagy Norbert (Szeged, Hungary)
Nikolic Turnic Tamara (Kragujevac, Serbia)
Ostadal Petr (Prague, Czech Republic)
Papp Zoltán (Debrecen, Hungary)
Rabinovich-Nikitin Inna (Winnipeg, Canada)
Rodriguez Blanca (Oxford, UK)
Saadeh Suleiman (Bristol, UK)
Salim Yusuf (Hamilton, Canada)
Slezak Jan (Bratislava, Slovakia)
Škrbić Ranko (Banja Luka, B&H)
Stojiljković Miloš ((Banja Luka, B&H)
Singla Dinender (Orlando, USA)
Srejovic Ivan (Kragujevac, Serbia)
Tappia Pram (Winnipeg, Canada)
Touyz Rhian (Montreal, Canada)
Turan Belma (Ankara, Turkey)
Tyagi Suresh (Louisville, USA)
Zaza Antonio (Milano, Italy)
Zivkovic Vladimir (Kragujevac, Serbia)
Zuurbier Coert (Amsterdam, The Netherlands)

LOCAL ORGANIZING COMMITTEE: MEMBERS OF THE CENTER FOR TRANSLATIONAL RESEARCH AND SYSTEMS MEDICINE (UNIVERSITY ADVANCED RESEARCH CENTER)

Aburel Oana (Timișoara, Romania)
Dănilă Maria (Timișoara, Romania)
Dehelean Cristina (Timișoara, Romania)
Gaiță Dan (Timișoara, Romania)

Lascu Ana (Timișoara, Romania)
Mozoș Ioana (Timișoara, Romania)
Sturza Adrian (Timișoara, Romania)
Ursoniu Sorin (Timișoara, Romania)

Details regarding registration fees and accommodation will be available in the Second Announcement on IACS-ES website: <http://www.iacs.sav.sk/meetings.html> and university website, <https://www.umft.ro/en>, respectively.

Registration deadline: July 31, 2023

Conference abstract submission deadline: July 15, 2023 for oral presentations and July 31, 2023 for poster presentations. Please indicate your preference for oral or poster presentation on the registration form. Abstract forms will be available to download from the IACS-ES website/university site.

Publication opportunity for presenters

The abstracts of all oral and poster presentations will be printed in an abstract book. Presenters will be encouraged to submit a full manuscript based on the material presented at the conference for consideration to be published in the *Canadian Journal of Physiology and Pharmacology*. Manuscript submissions will be subjected to the usual peer-review process.

Named Poster Competitions

There will be two poster Awards in the name of Dr. Attila Ziegelhöffer and Dr. Karl Werdan.

Overview of Tentative Conference Program

Day 1 (October 4, 2023)

13:00-	REGISTRATION
15:00-15:30	Opening ceremony
15:30-16:00	Plenary lecture 1
16:00-16:30	Plenary lecture 2
16:30-17:00	Coffee break
17:30-18:00	Plenary Lecture 3
18:00-19:00	Plenary Lecture 4

20:00 **Welcome Cocktail**

Day 2 (October 5, 2023)

Parallel sessions

9:00-10:30	Session 1-3 2 invited speakers 20+5 min , 2 10+5 min speakers
10:30-11:00	Coffee break
11:00-12:30	Session 4-6 3 invited speakers 20+5 min talks
12:30-14:00	Lunch
14:00-16:00	Young Investigator Award Competition 6 15+5 min talks
14:00-16:00	Session 7-8 3 invited speakers 20+5 min , 2 10+5 min speakers
16:00-18:30	Poster Session I

Day 3 (October 6, 2023)

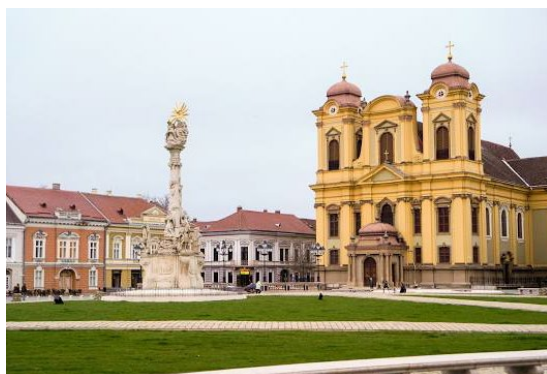
Parallel sessions

9:00-10:30	Session 9-11 2 invited speakers 20+5 min, 2 10+5 min speakers
<i>10:30-11:00</i>	<i>Coffee break</i>
11:00-12:30	Session 12-14 3 invited speakers 20+5 min talks
<i>12:30-14:00</i>	<i>Lunch</i>
14:00-16:00	Session 15-17 3 invited speakers 20+5 min, 2 10+5 min speakers
16:00-18:30	Poster Session II
<i>20:00-24:00</i>	<i>Gala Dinner and Award Ceremonies</i>

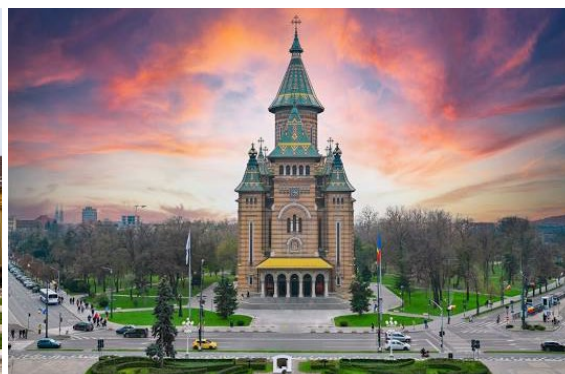
Day 4 (October 7, 2023)

Parallel sessions

9:00-10:30	Session 18-19 3 invited speakers 20+5 min, 1 10+5 min speaker
<i>10:30-11:00</i>	<i>Coffee break</i>
11:00-12:30	Session 20-21 2 invited speakers 20+5 min, 2 10+5 min speakers
<i>12:30- 12:40</i>	<i>Closing Ceremony</i>



St. George Cathedral/Catholic Dome



Orthodox Metropolitan Cathedral



Dicasterial Palace



Monastery Șag-Timișeni



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Honorary Chair of the Meeting:
Prof. Naranjan S. Dhalla, PhD, MD (Hon), DSc (Hon)
President of the Meeting:
Prof. Octavian Crețu, MD, PhD, Rector of the University
Main organizers, Vicerectors of the University:
Prof. Claudia Borza, MD, PhD
Prof. Daniel Lighezan, MD, PhD
Prof. Cristian Oancea, MD, PhD

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