EuroSciCon

DAY 1

Scientific Tracks & Abstracts

2nd Edition of EuroSciCon Congress on

HEART DISEASE AND INTERVENTIONAL CARDIOLOGY

February 25-26, 2019 | Paris, France

DAY 1

February 25, 2019

Sessions

Cardiovascular | Cardiology | Cardiac and Cardiovascular Research | Cardiac Dysrrhythmia | Cardiovascular genomics and genetics | Heart Failure | Paediatric Coronary Artery Disease | Hypertension Risk Factors

Session Chair
Basden Onwubere
University of Nigeria Teaching Hospital, Enugu, Nigeria

Session Co-Chair
Jose Luis Aceves Chimal
National Medical Center, México

Session Introduction

Title: **CXCR4-stem cell therapy in old myocardial infarction**
Jose Luis Aceves Chimal, National Medical Center "20 de Noviembre" ISSSTE, México City

Title: **Existent - a completely new method of treatment of patients with Marfan syndrome**
Jan Pirk, Institute for Clinical and Experimental Medicine in Prague (IKEM), Czech Republic

Title: **Tele-ECG transmission to reduce the time for catheterization laboratory activation**
Chun-Chieh Chao, Taipei medical University Hospital, Taiwan

Title: **Desialylated Atherogenic Low-Density Lipoprotein in Atherosclerosis**
Alexander Orekhov, Institute of General Pathology and Pathophysiology, Russia

Title: **The utility of genetic testing in cardiac arrhythmias**
Bijal (Ria) Vyas Bhatia, Sir Ganga Ram Hospital, India

Title: **Antioxidative effects of complementary therapy with Salvia miltiorrhiza in ischemic heart disease-real world and experimental study**
Yu-Chiang Hung, Department of Chinese medicine in Kaohsiung Chang Gung Memorial Hospital, Taiwan

Title: **Pelvic venous congestion syndrome treated by embolization in a patient with duplicated inferior vena cava**
Marcelo Lima, Vascular Surgery, Instituto Victor Dib, Brazil

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José Luis Aceves Chimal et al., Interv Cardiol J 2019, Volume: 5
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CXCR4-STEM CELL THERAPY IN OLD MYOCARDIAL INFARCTION

José Luis Aceves Chimal[1], Rafael Vilchis Lópe[1], Virna Poveda Samaniego[1], Paul Mondragón Terán[1], Mario Marroquin[1], Daniel Santillan[1], Mario Tellez[1], Miriam Marmolejo[1], Fernando Rodriguez[1] and Luis Felipe Montaño Estrada[2]

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For cell therapy on myocardial infarction, many kinds of cells have been studied. In our experience since 2001, the implant of mesenchymal stem cells CD34+ obtained from peripheral blood showed inconsistent improvement in the contractile function of infarcted myocardial tissue, but better survival in long term. For improved cell therapy, in 2014 we characterized the kind of cells that were mobilized to peripheral blood in patients with acute myocardial infarction, which were identified as a response of bone marrow to myocardial insult. In 2015, we began a clinical trial with CXCR4-stem cells and specific cells markers in patients with old myocardial infarction and reduced LVFE. Cells with specific markers were separated with immune-magnetic autoMACS Pro Separator machine and implanted on infarcted myocardial tissue guided by epicardial ultrasound.

Results: **To the date we have evaluated 15 patients followed by 12 months, we observed a standardized respond in myocardial perfusion and LVEF at six months, as well as improvement in their functional class from NYHA III to I in all patients.**

Conclusion: **CXCR4-stem cells with specific cells markers improve the myocardial perfusion and contraction of left ventricle in patients with old myocardial infarction in a standardized way.**

Biography

José Luis Aceves Chimal has completed his MSc, PhD from Universidad Nacional Autónoma de México, and Postdoctoral studies from National Nutrition Institute Salvador Subiran. He is a Cardiovascular Surgeon and Researcher in National Medical Center 20 de Noviembre ISSSTE in México City. He has published more than 20 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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EXTENT: A COMPLETELY NEW METHOD OF TREATMENT OF PATIENTS WITH MARFAN SYNDROME

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IKEM, Czech Republic

Marfan syndrome is the most common genetic disorder of connective tissue. One complication that threatens the lives of patients is progressive dilatation of the ascending aorta with development of aortic valve regurgitation or the emergence of dissection, often leading to sudden death. Until now, these patients were operated only after dilatation of the ascending aorta causing hemodynamically significant regurgitation of the aortic valve. The surgery consisted of the replacement of the ascending aorta and aortic valve or valve sparing procedure. This new method is a preventive operation. The method involves creating a custom made external support of the root and the ascending portion of the aorta. Based on the CT examination, prosthesis Extent is created. The surgery is performed from the longitudinal median sternotomy without cardiopulmonary bypass. Entire aortic root is dissected to its origin from the left ventricle, ostia of the coronary arteries are encircled, the prosthesis is pulled underneath and fixed to the root and then sutured longitudinally. It is interesting that the prosthesis was developed and as the world's first has it sewn on himself (Mr Tal Golesworthy), 13 years ago in Oxford. Neither him nor the other 100 patients operated in this department with this disease had dilation or dissection throughout the study. It is because the prosthesis grows over time into the aortic wall thereby enforces it while maintaining the elastic properties of the wall. At our institute, we have so far experience with operations of 20 patients, with good results. This operation moves the care of patients with Marfan syndrome to qualitatively higher level

Biography

Jan Pirk has completed his Graduation from the Faculty of General Medicine, Charles University in Prague. After completion of his Graduation, he worked at the District Hospital in Nymburk from 1972 until 1974. He has been working in the Institute of Clinical and Experimental Medicine (IKEM) from 1974 until now. From 1991 to May 2017, he was the Head of the Clinic of Cardiovascular and Transplantation Surgery and since 1995 he has been the Head of the Cardiocentre. In 1990-1991, he worked as a Consultant at Odense University Hospital in Denmark. He is a Member of a number of national and international scientific organizations. In his free time, he is mostly engaged in sports and likes theater.

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THE UTILITY OF GENETIC TESTING IN CARDIAC ARRHYTHMIAS

Bijal Vyas Bhatia, Ratna D Puri and Ishwar C Verma
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Introduction: The common life threatening cardiac arrhythmias, Long QT (LQTS type 1-13) and Brugada (BrS type 1-12) present with syncope/palpitations/seizures/aborted cardiac arrest. They have incomplete penetrance and variable expressivity. The three common genes (KCNQ1, KCNH2 and SCN5A) account for 75% of all LQTS cases and SCN5A gene in BrS accounts for 25% of all cases.

Aim: To identify the causative variation in the associated genes responsible for causing cardiac channelopathies in Indian patients.

Materials & Methods: Hundred patients who fulfilled the inclusion criteria of the study were enrolled. Mutation analysis was performed in most probable candidate gene by direct sequencing using primers flanking exon-intron boundaries. If a mutation was not identified, NGS was performed to identify mutations in other cardiac genes in patients. Parents and siblings were screened if a mutation was identified in the proband. Novel mutations were evaluated for pathogenicity using ACMG guidelines, bioinformatics and molecular modelling softwares.

Results: Mutations was identified in 23 of 100 (23%) patients by Sanger sequencing, 20 had LQTS and 3 had BrS. Among the LQT syndromes, mutations were identified in 17 in KCNQ1 (LQTS1), one in KCNH2 (LQTS2) and two in SCN5A (LQTS3). Among the LQTS1 patients, ten were identified with biallelic mutations. The three BrS patients had mutations in SCN5A (BrS1). Ten of 23 mutations were novel. NGS identified mutation in 22 (49%) of 45 patients negative for mutations by Sanger and with significant family history and/or strong clinical indication. Of which, 20 had LQTS and two had BrS. Out of these 46 mutations, 18 were novel. Cascade screening identified mutations in two symptomatic and forty asymptomatic family members. Genetic counseling was provided to the proband and family members.

Conclusion: Genotyping is important for confirming type of LQTS/BrS, which has implications for management, cascade screening and risk assessment.

Biography

Bijal Vyas Bhatia has completed her MS in Medical Genetics from Virginia Commonwealth University, US and her PhD in Cardiac Genetics from Indraprastha University affiliated to Institute of Medical Genetics and Genomics, Sir Ganga Ram Hospital. She has been working in the field of Cardiac Genetics with specialization in Long QT and Brugada syndromes for last five years. She has written original research articles and review papers based on these syndromes. Her study was the first cohort study on cardiac arrhythmias in Indian patients that lead to establishment of genetic testing for arrhythmias in India.

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DESIALYLATED ATHEROGENIC LOW-DENSITY LIPOPROTEIN IN ATHEROSCLEROSIS

Alexander N. Orekhov, Veronika A. Myasoedova
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Pathogenesis of atherosclerosis and the search for novel therapies and diagnostic markers remain major problems of modern medicine. Currently available therapeutic approaches are often not sufficiently effective, probably due to the complexity of the disease mechanisms. This review focuses on the evaluation of low-density lipoprotein (LDL) as risk factors of atherosclerosis. We summarize the current paradigm of LDL involvement in atherogenesis. We question the currently widely accepted hypothesis of the central role of oxidized LDL in atherogenesis and present an alternative concept of multiple modification of LDL that confers its pro-atherogenic properties. According to a series of studies conducted with blood serum and LDL from atherosclerotic patients, desialylation is one of the earliest if not the first atherogenic modification of LDL. Desialylation occurs in the bloodstream and is followed by a cascade of other modifications, including the reduction of LDL particle size and increase of its density, acquisition of negative electrical charge, oxidation and formation of highly atherogenic complexes. **This work was supported by the Russian Science Foundation (Grant # 18-15-00254).**

Biography

Alexander N. Orekhov has completed his PhD at the age of 29 years from Moscow State University and second doctoral degree (DSc) from Institute of Experimental Medicine (St. Petersburg). He is the head of laboratory of Institute of General Pathology and Pathophysiology. He has published more than 400 papers in reputed journals and has been serving as an editor-in-chief, guest editor and editorial board member of several biomedical journals.

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TELE-ECG TRANSMISSION TO REDUCE THE TIME FOR CATHETERIZATION LABORATORY ACTIVATION

Chun Chieh Chao and Wei Fong Kao
Taipei Medical University Hospital, China

Background: This study evaluated the use of a smartphone application to facilitate communication between the emergency physician (EP) and the interventional cardiologist in order to minimize the time to cardiac catheterization laboratory (CCL) activation and time to percutaneous coronary intervention (PCI).

Methods: We retrospectively collected pertinent time-points in the management of patients diagnosed with ST-Elevation Myocardial Infarction (STEMI) in the emergency department and their outcome. The primary outcome was the reduction in the time from ECG interpretation to CCL activation after the implementation of a smartphone application. A total of 84 patients were enrolled. Patients' electrocardiography (ECG) were described by traditional verbal communication via telephone (group 1, n=40) and by additional smartphone transmission of ECG images to an interventional cardiologist (group 2, n=44). Relevant time-points were recorded for analysis.

Results: The time from ECG interpretation to CCL activation was reduced from 28.3±4.1 in group 1 to 17.6±2.3 min in group 2 (p=0.03). Similarly, the time from ECG interpretation to balloon inflation time (D2B) decreased from 93.1 to 73.4 min (p=0.025). Comparing group 2 with group 1, the door to balloon (D2B) time improved to 90.4±9.8 from 119.3±16.3 min (p=0.23), the proportion of patients with a D2B time less than 90 min increased to 70.5% from 52.5% (p=0.09) and the mortality rate decreased to 2.2% from 12.5% (p=0.07).

Conclusion: The additional use of a smartphone application to transmit ECG information to interventional cardiologists by EPs facilitated communication and reduced the decision time to CCL activation and percutaneous intervention.

Biography

Chun Chieh Chao has completed his Medical Degree in 2000 from National Yang-Ming University and Master Degree from Critical and Emergency Care institute at Yang-Ming University, School of Medicine. He has speciality both in emergency and critical care, and serve as the Director of 1st ICU and ED physician in Taipei medical University Hospital. He has published several articles about ECG in reputed journals and has been serving as an Editorial Board Member for several journals. He also has attended annual congress of ESICM several times for reporting clinical researches.

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ANTIOXIDATIVE EFFECTS OF COMPLEMENTARY THERAPY WITH SALVIA MILTIORRHIZA IN ISCHEMIC HEART DISEASE

Yu-Chiang Hung

Department of Chinese Medicine, Kaohsiung Chang Gung Memorial Hospital , Taiwan

Background: Salvia miltiorrhiza (SM) is a Chinese herb widely used for ischemic heart diseases (IHD), yet little is known about the cellular mechanisms. The aims of this study were to investigate mechanisms of SM.

Methods: The rat A10 cells line, a vascular smooth muscle cells line isolated from rat thoracic embryonic aorta was as a study model. The SM roots aqueous extract , MTT assay, cytotoxicity assay, two-dimensional electrophoresis coupled with MALDI-TOF mass spectrometry , western blot analysis, and biological network analysis were applied for the elucidation of protein changes characterizing the response of the rat A10 cells into the homocysteine(Hcy) -induced oxidative stress.

Results: Our study showed that a low dose (0.015 mg/mL) of the SM significantly inhibited growth (>60%, $p < 0.05$) of the Hcy stimulated rat A10 cells. In addition, concentration of intracellular reactive oxygen species obviously decreased in the rat A10 cells after its incubation with SM in terms of catalase increasing activity. Next, marked down-regulation of protein kinase C beta-1 and phosphorylated mitogen-activated protein kinase expression suggest that observed inhibitory effect of the SM on the Hcy-induced growth of rat A10 cells was realized via the PKC/p44/42 MAPK- dependent pathway. The intensity changes of 10 protein spots in response of the rat A10 cells to the Hcy-induced oxidative damage as alpha-4-tropomyosin, vimentin, F1F0-ATP synthase (beta subunit), glucose regulated protein 75, actin (fragment), prohibitin, capping protein, plakoglobin, endoplasmic reticulum protein 29, and peptidylprolyl isomerase A, were detected with statistical significance ($p < 0.05$). Meanwhile, it was showed that used here SM resist carbonylation of vimentin, alpha-4-tropomyosin and GRP75, respectively, leading to phenotype transformations in the rat A10 cells.

Conclusion: These data suggest that SM may exert its protective effect in IHD through circulating ROS suppression and subsequent modulation of protein carbonylation in rat aortic smooth muscle cells.

Biography

Yu-Chiang Hung grew up in Taiwan and received his Bachelor's degree from the China Medical University in 1990 , another M.D . degree from the National Yang-Ming University in 1992 , and Ph.D. degree from the Chang Gung University in 2010. His PhD thesis was "Functional proteomic study in bioactive compounds of radix Salvia miltiorrhiza". Dr. Hung had found that Salvia miltiorrhiza could inhibit vascular smooth muscle cell proliferation to treat atherosclerosis. He is an attending and director of Department of Chinese medicine in Kaohsiung Chang Gung Memorial Hospital now. His specialty is Chinese medicine , cardiovascular diseases ,Chinese herbs , and acupuncture. He has published 39 papers in SCI journals and has been serving as an editorial board member of repute.

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Marcelo Fernandes Lima et al., Interv Cardiol J 2019, Volume: 5
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A PERSONAL EXPERIENCE CASE SERIES REPORT IN MAY-THURNER VSYNDROME APPROACH: THE FIRST 50 CASES

Marcelo Fernandes Lima[1], Vanessa Heinrich Barbosa de Oliveira Lima[2] and Ilídio Almeida Lima[1,3]

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[2]Universidade de São Paulo, Brazil
[3]Federal University of Amazonas, Brazil

May-Thurner syndrome (MTS) represents the most common known cause of non-thrombotic iliac vein obstruction. The most common symptoms are chronic extremity edema and pain, and MTS is also an important cause of acute deep venous thrombosis (DVT) affecting the left inferior limb. In this scenario, an endovascular stent placement to relieve the extrinsic compression seems not only to alleviate these symptoms but also playing a role in preventing an acute DVT episode. The author presents his personal experience in a private practice, reporting the first 50 cases treated

Biography

Marcelo Fernandes Lima is Vascular Surgeon, titled as specialist in Vascular Surgery by the Brazilian Society of Angiology and Vascular Surgery and by Brazilian Medical Association.

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Video Presentation

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HEART FAILURE DIAGNOSIS & NEW TRENDS IN TREATMENT

Rohit Kapoor[1], Shivam Kapoor[2] and Rishabh Kapoor[2]

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[2]Senior Resident — Care Well Heart & Super Speciality Hospital, India 'Senior Resident — Care Well Heart & Super Speciality Hospital, India

Heart Failure is a clinical syndrome that can result from any structural or functional cardiac disorder that impairs the ability of the ventricle to fill with or eject blood. High incidence is 6,50,000 cases diagnosed annually. Incidence increases with age, from 20 per 1000 in 60-70 years age group to 80 per 1000 in >85 years age group. Life time risk of developing heart failure in US is 20% in Americans more than 40 years age. High mortality rates remains approximately 50% within 5 years of diagnosis. Heart failure care costs exceed about $30 billion annuall mainly due to hospitalizations. CAD is most common etiology, causing more than 2/3"heart failures. India is home to 16% of global population. 25% of the world's Coron y heart disease burden. There are 120 million hypertensives — CVD will be the leading cause of morbidity and mortality in India be 2020. The presentation will include various modalities of treatment of HF with reduced EF and preserved EF. Some of the slides will stress upon ARNI treatment, role of IVA BRADINE, role of BNP in diagnosing HF. The role of comorbid states like associated Diabetes, Hypertension, Anemia, Dyslipidemia. Obesity will also be discussed in various slides. Conclusion remarks will include summarising the whole talk and take home messages.

Biography

Dr. Rohit Kapoor, MD(Internal Medicine) has been practicing more than 25 years in the field of Cardiology. He is the Medical Director & HOD Cardiology department — Care Well Heart & Super Speciality Hospital. He has 87 research paper presentations in various National & International conferences. He has more than 10 publication in reputed journals. He has been Principal Investigator in 23 research studies. He has been invited as a Speaker faculty in more than 140 conferences and chaired more than 50 conferences. He has been awarded various Fellowships like FACP(USA),FACC(USA),FISC,FCSI,FDI,FRSSDI. Also, he has received various awards and honours. He has contributed 7 chapters in the Textbook of Cardiology & Diabetes.

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ABSTRACT TITLE: ASSOCIATION OF BIOMARKERS OF OXIDATIVE STRESS, STRESS GLYCAEMIA AND GLYCATED HAEMOGLOBIN WITH CORONARY ARTERY DISEASE

Marija Vavlukis
University Clinic of Cardiology, Republic of Macedonia

Introduction: Reactive oxygen species (ROS) are responsible for generalized oxidation which results in cell dysfunction, necrosis or apoptosis. Assessment of oxidative stress markers could modify prevention, risk stratification and treatment of patients with coronary artery disease (CAD). The aim of this study was to evaluate association of biomarkers of oxidative stress, stress glycaemia and glycated hemoglobin (HgbA1c) with CAD.

Methods: Cross-sectional observational study was performed in hospitalized CAD patients. Beside their demographics, risk factors and co-morbidities, lipoprotein profile, glycemic profile and oxidative stress biomarkers: malondialdehyde (MDA) and hydro peroxide (HP), and antioxidant enzymes: superoxide dismutase (SOD), CATALASE and glutathione peroxidase (GPS) were measured. Comparison was performed between CAD patients and healthy controls, patients with acute coronary syndrome (ACS) versus chronic CAD (inside the group: between PCI revascularised and stable post MI patients) and ACS patients (STEMI, NSTEMI and unstable angina).

Results:Study included 300 patients, (64.7% males and 36.3% females), mean age of 62.9±11,2 years. (p=ns between genders for age). 187 (62.3%) were ACS and 113 (37.7%) chronic CAD patients. There was no statistical significant difference in the risk profile between the CAD groups. Patients with CAD had significantly higher pro-oxidative and significantly lower anti-oxidative levels of biomarkers (Table 1), as compared with healthy volunteers. Statistically significant differences were observed for HP and SOD between ACS and HCAD group. In HCAD group, revascularized patients demonstrated higher oxidative stress as compared to stable post MI patients. In ACS patients statistical significant intergroup difference was registered, but not pointing to the single type of ACS. ACS patients had also higher levels of stress glycaemia and HgbA1c. Significant positive correlation were found for HgbA1c and stress glycaemia with MDA (r=,154**, p=0,008; r=,254**, p=0,024 respectively).

Conclusion: CAD patients demonstrated pronounced oxidative stress when compared to healthy controls. Respectively, ACS patients had higher oxidative stress as compared with chronic CAD patients, where PCI vascularized sub-group of patients performed worse that stable post MI patients. Higher oxidative stress activity was linked to worse glycemic control as measured threw stress glycaemia and HbA1c

Biography

Marija Vavlukis has completed her PhD at the age of 44 years from Ss' Cyril and Methodius University, Medical Faculty, Skopje, Republic of Macedonia. She is Head of ICCU at the University Clinic of Cardiology, National coordinator of The American-Austrian Foundation-Open Medical institute, national champion in ACCA of The European Society of Cardiology, FESC since 2016. She is also a Professor at faculty of Medical Sciences at Goce Delcev University, mentoring PhD students and residents in cardiology. She has published more than 60 papers in reputed journals, participated at national/international congresses, symposiums, workshops, other meetings with plenary or oral presentations in more than 40 occasions, and authored or co-authored more than 150 publications. She has been serving as an editorial board member and reviewer in several Journals of repute.

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HYPERTENSION RISK FROM IRON BRAKE PARTICULATE MATTER

William J Rowe
Medical University of Ohio at Toledo, USA

Of 12 moon walkers, James Irwin on day after return from Apollo 15 mission, showed extraordinary bicycle (B) stress test (ST) hypertension (275/125) after 3 minutes exercise; supervising >5000 maximum treadmill ST, author never witnessed ST-blood pressure approaching this level. Symptom-limited maximum B stress test showed cyanotic fingernails; possibly venous blood trapped peripherally, supporting author's Apollo 15 space syndrome, postulating that severe fingertip pain during space walks, triggered by plasma fluid, trapped distally; mechanism could be related to endothelial dysfunction, providing silent ischemia warning. Neil Armstrong returned to Earth with severe diastolic hypertension (160/135), consistent with ischemic left ventricular dysfunction; 50 mm increase in comparison with resting BP 110/85. With inhalation of lunar dust brought into habitat on space suit with high lunar iron (I), this dust inhalation, along with reduced (R) space flight, transferrin, R antioxidant, calcium (Ca) blocker, magnesium are conducive to severe oxidative stress. Ca overload with potential endothelial injuries. Using moon walker studies as example, my recent editorials show that iron dust released from brakes, with over 90% of brakes made of I, is a major hypertension factor and may also contribute to myocardial infarctions.

Biography

William J Rowe, MD FBIS (Fellow British Interplanetary Society), FACN (Fellow American College of Nutrition, Retired Fellow Royal Society of Medicine), is a board certified Specialist in Internal Medicine. He received his MD from the University of Cincinnati and was in private practice in Toledo, Ohio for 34 years. During that time, he supervised over 5000 symptom-limited maximum hospital-based treadmill stress tests. He has studied three world class extraordinary endurance athletes and published their exercise-related magnesium deficiencies. This triggered a 20 year pursuit of the cardiovascular complications of space flight. He has published in The Lancet that extraordinary, unremitting endurance exercise can injure a perfectly normal heart. Of only four space syndromes, he has published two: "*The Apollo* 15 Space Syndrome" and "*Neil Armstrong Syndrome*". He has been listed in the Marquis Who's Who of the World from 2002-2009, 2013, 2014, 2015, 2016, 2017, and 2018.

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