27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Special Session

Day 1

Chiara Mozzini, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Chiara Mozzini

University of Verona, Italy

Endoplasmic Reticulum Stress, Inflammation, Oxidative Stress And Neutrophil Extracellular Traps In Cardiovascular Diseases

The aim of this work is to summarize the understanding of the interrelated roles of endoplasmic reticulum (ER) stress, oxidative stress & inflammation in cardiovascular diseases. Insults interfering with ER function lead to the accumulation of unfolded & misfolded proteins in the ER. An excess of proteins folding in the ER is known as ER stress. This condition initiates the unfolded protein response (UPR). When the UPR fails to control the level of unfolded & misfolded proteins, ER-initiated apoptotic signalling is induced. Moreover, the role of the protective nuclear erythroid-related factor 2 (Nrf2)/antioxidant-related element (ARE) & the activation of the pro-inflammatory nuclear factor-kappa B (NF-kB) are analysed. Current literature data are presented, focusing on three topics of related pathologies: atherosclerotic plaque, coronary artery disease & diabetes. Moreover, current evidence suggests the likelihood of a link between venous thromboembolism (VTE) & atherosclerosis, although they have been traditionally considered as different pathological identities. The contribution of neutrophils to human atherogenesis has been underestimated, if compared to their contribution established in VTE. This is due to the major importance attributed to macrophages in the plaque destabilization. Nevertheless, recently, the role of neutrophils in atherogenesis deserves increasing attention. In particular, neutrophil extracellular traps (NETs) are net-like chromatin fibres which are released from dying neutrophils. The death of neutrophils with NETs formation is called NETosis. During activation, neutrophils produce Reactive Oxygen Species (ROS), through the activation of nicotinamide adenine dinucleotide phosphate (NADPH) oxidase. The main function of NETs is trapping and killing pathogens. However, NETs formation has been observed in various chronic inflammatory diseases, autoimmune diseases, vasculitis, lung diseases, cancer and VTE. Recent studies suggest that NETs formation could contribute also to atherosclerosis progression. New data report the presence of NETs in the luminal portion of human atherosclerotic vessels and coronary specimens obtained from patients after acute myocardial infarction. Programmed death mechanisms in atherosclerosis such as apoptosis, efferocytosis and also NETosis, share common features & triggers. If defective, they can lead the cells to a switch from programmed death to necrosis, resulting in the release of pro-atherogenic factors, accumulation of cell debris and progression of the disease. This talk aims to analyse the emerging role of neutrophils focusing on NETosis and oxidative stress burden in orchestrating common mechanisms in atherosclerosis & thrombosis.

Biography

Chiara Mozzini pursued her Medical Doctor Degree from the University of Brescia, Italy (2006). She is a Board Certified Specialist in Internal Medicine at the University of Verona, Italy (2012). Section of Internal Medicine University of Verona, Italy Medical Doctor Degree University of Brescia (Italy). She received her PhD certification in clinical and experimental medical sciences. She is an Adjunct Professor (Researcher of type A)- Section of Internal Medicine at the University of Verona, Italy. Her research field of interest includes: atherosclerosis, cardiovascular diseases, coronary artery disease, diabetes, oxidative stress, endoplasmic reticulum stress and ultrasound (cardiac-abdominal- vascular). Her H-index is 11.

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Marco Diena et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Marco Diena

Clinica San Gaudenzio, Italy

Gheorghe Cerin

San Gaudenzio Clinic, Italy

Up to 100% mitral valve repair through minithoracotomy: A simplified technique for a complex disease

Objective: Despite clear data proving that the operation of choice in degenerative mitral regurgitation (DMR) is the mitral valve repair (MVR), mitral plasty rate remains suboptimal for different reasons. First: challenge in case of prolapse of both leaflets (BLP), second: difficulties to work through small incisions, third: need of a perfect echo assessment of each scallop. The purpose of this study was to assess the feasibility of a single orifice MVR in patient with pure mitral regurgitation (MR), via a right minithoracotomy (RMiniT).

Methods: From 09.2010 to 09.2017 296pts (male 70%, age 56.3+12.0y) with DMR were operated via RMiniT. Preoperative EF was 61+7.2; 92% of pts were in NYHA 2 and 7% in NYHA 3&4. Preoperative mean pulmonary systolic pressure was 29+8.6mmHg. At Echo 41% of pts presented BLP. Mean MV diameter was 43.3+4.3mm. A simplified surgical approach was used: Percutaneous single femoral venous and a direct aortic cannulation, direct aortic cross clamping (AoCC) and antegrade Custodiol cardioplegia. Usually a triangular resection for posterior leaflet and PTFE artificial chordae for the anterior leaflet was performed. All patients received a complete prosthetic ring.

Results: In hospital mortality was 0.7%. The success rate of repair was 100% with 2% of patients needing a second pump run. The mean AoCC was 72+17min. Completeness of FUP was 90% with a mean period of 5.6+2y. Late mortality was 2.6%, with 0,8% cardiac related death. Reoperation for residual MR was performed in 1.8%. Cardiac related rehospitalisation was 2.3%.

Conclusion: MVR in DMR is feasible up to 100% of patients through RMiniT with the single orifice technique, even in complex anatomy as Barlow disease. This simplified technique enhances the probability of MVR and reduce the ischemic time. A proper training is needed and an optimal valve assessment mandatory to achieve good results in this challenging approach.

Recent Publications:

1. euroecho 2017, lisbona. mitral valve annulus-circumflex artery distance assessed by msct and tee. may echocardiography minimize the risk of circumflex artery injury? d. botezatu, l. samman, e. novelli, f. armienti, d. benea, m. diena, g. martinelli, t. khouri, g. cerin
2. 19 Aprile 2017, Direttore del Corso ECM: Dott. Marco Diena: Cardiopatia ischemica e insufficienza mitralica,- 10,4 Crediti formativi e 13 crediti SIEC, Auditorio Clinica San Gaudenzio, Novara "Chirurgia della mitrale ischemica: tecniche, timing e risultati Cardioteam": Live in box cases, M Diena
3. 14 Giugno 2017, Direttore del Corso ECM: Dott. Marco Diena: Trattamento della patologia aneurismatica aortica, 8 Crediti formativi, Auditorio Clinica San Gaudenzio, Novara, Live in a box case. Collegamento streaming con Romania e Moldavia,
4. 6 dicembre 2017 Direttore del Corso ECM: Dott. Marco Diena - Update nel trattamento del paziente mitralico a 360° Novara; 4 Crediti formativi, Auditorio Clinica San Gaudenzio, Novara Live in a box case. Collegamento streaming con Italia, Romania e Moldavia, Chairman: Dott. Marco Diena; "La terapia chirurgica nell'insufficienza mitralica degenerativa" Live in Box. Dott Marco Diena

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Biography

Dr. Marco Diena, graduated in Medicine and Surgery from University of Turin. In 1990, at the age of 30, he was a cardiac surgeon's assistant at the Hospital of S. Donato Milanese. He is a founding member together with other doctors of the Cardiopathic Children 's Association in the World who works in developing countries to treat indigent cardiac patients. In April 2001 he introduced robotic surgery in Piedmont , directed the two-monthly courses in robotic surgery at the Pinna Pintor nursing home, having perfected himself in robotic surgery in Brussels, Leipzig and Dresden. For 15 years he has been director of the "Cardioteam. Since 2002 he has directed the Cardiosurgery Division of the San Gaudenzio Nursing Home in Novara. In 2008 he was, together with a group of colleagues, founder of the Cardioteam Foundation Onlus , of which he is still the President. In 2014, together with the staff of the Foundation, he promoted the free Cardiovascular Prevention Campaign called screening of the aurum ahead ascending .

Notes:

Gian Luca Martinelli, J Clin Exp Cardiolog 2018, Volume 9
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Gian Luca Martinelli

San Gaudenzio Clinic, Italy

Mitral Repair and Mini-invasive Surgery: Long Term Results

Minimally invasive surgical mitral valve repair (MVRepair) has become routine for the treatment of mitral valve regurgitation, and indications have been expanded to include reoperations. Current European Society of Cardiology/European Association for CardioThoracic Surgery guidelines for the management of valvular heart disease recommended standards in terms of mitral valve disease differentiation, timing of intervention and surgical techniques to improve patient care. Numerous minimally invasive techniques to lessen the invasiveness have been described, such as the minimal-access J-sternotomy (ministernotomy), the parasternal incision, the port-access technique and the right minithoracotomy. Despite the development of catheter-based techniques, surgical repair remains the gold standard today for nearly all patients with degenerative valvular diseases and the majority of patients with other types of valvular diseases. Techniques include resection of the prolapsed segment, neo-chordae implantation and ring annuloplasty. The right anterolateral minithoracotomy in the third/ fourth intercostal space is currently the most commonly applied approach. For these procedures, videoscopic assistance and the use of tele-manipulative robots (e.g. da Vinci system) are adjunctive techniques for further decreasing trauma of the surgical access. In experienced hands, the minimally invasive approach has shown excellent results with regard to operative complications and the durability of surgical MVRepair. Furthermore, today MVRepair is the gold standard for treatment of significant MR with results of high patient satisfaction, short hospital stays, low perioperative morbidity and mortality rates and excellent long-term outcomes.

Biography

Martinelli Gian Luca is currently working as Vascular Surgeon at San Gaudenzio Clinic - Gruppo Policlinico di Monza- Novara, Italy. From 2014-2015: Head of Cardiac Surgery Department Policlinico di Monza- Monza Brianza, Italy. September 2012 to May 2014 co-Director of Cardiac Surgery Service, Casa di Cura Santa Maria (private hospital accredited by Servizio Sanitario Nazionale - Italian National Health Service), Bari. From 2002-2012: Head of Cardiac Surgery service in the Cardiovascular Department of St. Anna Hospital, Catanzaro, referral Center accredited by Servizio Sanitario Nazionale (Italian National Health Service). Free-lance cardiac surgeon with Azienda Sanitaria Ospedaliera San Giovanni Battista–Molinette Hospital in Turin in 2001. In 2000: Consultant for the Jo Ann Medical Center of Tblisi, Republic of Georgia, where I initiated the first Center of Cardiosurgery for adults, with the support of local government. From January 2 1996 - August 2000: Full-time Staff Assistant at the Cardiovascular Surgery Department of the Hospital Villa Maria Pia in Turin. Responsibilities as primary surgeon. From January 26 1994-January 2 1996: Staff Assistant at the Organic Surgery Unit for Cardio and Vascular Surgery of the Silvestrini Hospital of Perugia (Head: Professor Ugo Mercati).

Gheorghe Cerin, J Clin Exp Cardiolog 2018, Volume 9
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Gheorghe Cerin

San Gaudenzio Clinic, Italy

Perioperative echocardiography in degenerative mitral insufficiency

In degenerative mitral insufficiency (DMI), compared to valve replacement, the mitral valve repair (MVR) is the operation of choice, in term of better survival and freedom from any cardiac events. Despite these data, MVR rate -generally among 60-70%, remains suboptimal, for different reasons. Primarily, the need of a perfect echo assessment of each prolapsing scallop and of the mechanism of MI, second, the challenging anatomy in case of prolapse of both leaflets, and third, the difficulties to work through small incisions. Our team developed a specific algorithm in order to reach 99% of MVR through a right minithoracotomy (R-miniT). First, by an unambiguous assessment of each prolapsing scallop, calculating for each patient a prolapsing score at intraoperative transesophageal echo, performed by an expert cardiologist. Particular attention was also payed to the mechanism of MI and to the MV geometry, defined by the triangle of coaptation. Second, by use of a simplified surgical technique: through a R-miniT, in the third intercostal space, a percutaneous single femoral venous and direct aortic cannulation was performed, followed by a direct aortic cross clamping, with antegrade Custodiol cardioplegia. Usually, a triangular resection for posterior leaflet and PTFE artificial chordae for the anterior leaflet was performed. In all cases a complete prosthetic ring was implanted. From September 2010, to September 2017, via R-miniT, we have operated on 296 patients with severe DMI (age 56.3+12.0y). In-hospital mortality was 0.7%. At discharge 96% of pts had no or trivial MI, 4% mild. The success rate of repair was 100% with 2% of pts needing a second pump run. The mean aortic cross clamping was 72+17min, the mean length of coaptation was 9+1.96mm and all patients have had a restored triangle of coaptation. At FUP (90% of pts, mean 5.6+2years), late mortality was 2.6%, with cardiac related death 0.8%. Non-patients were in NYHA Class 3 or 4. Reoperation for residual MR was performed in 1.8%. Cardiac related rehospitalisation was necessary in 2.3%. Permanent AFib was present in 3% of pts and 30% of pts had no medical therapy. Oral anticoagulation was present in 11% of pts. Our results demonstrate a 100% success and feasibility of mitral repair on right minithoracotomy, with low in-hospital and late cardiac mortality. A team approach between the cardiac surgeon and cardiologist is mandatory for high likelihood and successful repair.

Biography

Gheorgin Cerin, Fellow of European Society of Cardiology and Head of the Cardiology and Internal Medicine Grouping, Cardiac Surgery Dpt, San Gaudenzio Clinic, 'Policlinico di Monza' Hospital Group, Italy. Senior Consultant Cardiologist at the Cardiovascular Center, Monza Hospital, Bucharest, Romania. President of the Association of Romanian Doctors in Italy. He has an outstanding experience in clinical cardiology and internal medicine, daily connected in the last 25 years to perioperative management of the patients candidate to open heart surgery. He has Vast experience in the field of echocardiography as tool in perioperative assessment and management of patients candidates to cardiac surgery: more than 35 years of experience in echocardiography – the last 25 years as echocardiographer in cardiac surgery. Specific expertise in mitral valve diseases and generally in echocardiography for valves repair surgery. He is the Lecturer and chairman in various international meetings in cardiology, cardiac surgery and echocardiography. Since 1994 he has been working as a tutor and organizer of training programs in cardiology and cardiac surgery in Italy for the Italian, Romanian, Moldavian, Georgian and Polish doctors. Since 2010 he is the promotor of the live streaming sessions in cardiac surgery and echocardiography either in Italy or Romania, as tool and novel modality of tele-learning programs in cardiology and echocardiography (more than 40 live sessions from the operating room to the congress halls abroad in Europe as Austria, Spain, Romania, Moldavia, Turkey, Georgia, Poland). He has been granted by Diploma and gold medal the Romanian Scientists Academy (Oct 2007) for "outstanding contributions in the collaboration with Romania in the field of Cardiology, Cardiovascular Surgery and training young specialists".

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Scientific Tracks & Abstracts

Day 1

Day-1

SESSIONS

Cardiac Surgery | Cardiovascular Disease and Nutrition | Myocardial Infarction | Heart Failure | Coronary Heart Diseases

Chair: Heinz-Peter Schultheiss, Institute of Cardiac and Diagnostic Therapy, Germany

SESSION INTRODUCTION

Title: Virtual reality image analysis in aortic valve leaflet reconstruction
Takeo Tedoriya, Ageo Central General Hospital, Japan

Title: Prenatal MR imaging of congenital heart diseases and associated abnormalities
Tamara Feygin, University of Pennsylvania, USA

Title: Mass media campaign to improve poor diagnosis and poor medical adherence in atrial fibrillation
Jochen Senges, Stiftung Institut für Herzinfarktforschung Ludwigshafen, Germany

Title: Deregulations in $CD4^+$ T lymphocytes subsets promote inflammation in atrial fibrillation
Ingrid E. Dumitriu, St. George's University of London, UK

Title: Less invasive intraoperative laser-VT-ablation
Rainer G. H. Moosdorf, University Hospital of Giessen and Marburg GmbH, Germany

Title: Percutaneous balloon dilatation for congenital aortic stenosis during infancy: A 15-years single-center experience
Abdulraouf Jijeh, King Abdulaziz Cardiac Center, King Abdulaziz Medical City, KSA

Takeo Tedoriya, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Virtual reality image analysis in aortic valve leaflet reconstruction

Takeo Tedoriya
Ageo Central General Hospital, Japan

Aortic valve reconstruction with three same-sized autologous pericardial leaflets has been performed for patients with narrow aortic roots or contraindication for valve-prostheses. Since this procedure requires precise information of the aortic root including configuration of Valsalva sinus, we assessed physiologic-anatomical condition of the aortic root by virtual reality (VR) image in order to accomplish this technique with a reproducible fashion. For VR Imaging: enrolled patients underwent enhanced ECG-triggered cardiac CT. Axial images using a 264-row CT with slice thickness of 0.625 mm were obtained during mid-to-end diastole. Subtracted volume rendering data of the aortic root were converted to stereolithography (STL) file in Visalius3D, a novel 3D workstation. Preoperatively the aortic root was assessed in order to decide neo-commissure and offsetting of deviated nadir in cases of unbalanced aortic root, like type 0 bicuspid valve. Basic surgical technique was; 1) same-sized three pieces of leaflets from autologous pericardium were tailored to original templates referred by STJ diameter, 2) the new commissures and nadirs were confirmed based on VR image (in case the non-coronary nadir deviated toward the left ventricle, a crescent form Valsalva plication were required), 3) three leaflets were sutured on the cusp-sutureline, 4) commissure coaptation stitches were placed between each leaflet to prevent from minor leakage and coronary orifices obstruction. Postoperative echocardiography revealed nicely opening of new-leaflet with no AR. VR image analysis had notably provides valuable information for understanding of precise anatomy of the aortic root.

Biography

Takeo Tedoriya has completed his PhD from Kanazawa University (Japan) and trained in cardiac surgery at German Heart Institute Berlin to get German board of cardiac surgery. He moved to St.Vincent Hospital Sydney as a temporary Consultant for heart-lung transplantation unit, after working at Kanazawa University Medical Center. He had been the Professor and Director of Showa University for 10 years; Director of Ageo Central General Hospital, Cardiovascular Center. He has published more than 45 papers in reputed journals and has been serving as a Reviewer for several journals.

Notes:

Tamara Feygin, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Prenatal MR imaging of congenital heart diseases and associated abnormalities

Tamara Feygin[1,2]
[1]Perelman Medical School – UPenn, USA
[2]Children's Hospital of Philadelphia, USA

A variety of congenital heart diseases (CHD) may be diagnosed prenatally. Traditionally, the fetal heart was primarily assessed by fetal echography. However, fetal MRI has been proven as a helpful imaging tool in detection of cardio-vascular anomalies in utero. Numerous conditions, including aorta coarctation, hypoplastic left heart syndrome, tetralogy of Fallout, cardiac aneurysms, pericardial/cardiac tumors may be successfully detected on MR imaging. In addition, presence of other coexisting anomalies outside of the cardio-vascular system may be revealed. Some cardio-vascular anomalies may be more than an isolated problem and could be a part of an underlying systemic/genetic condition. Even in the absence of genetic abnormalities, infants with CHD are at increased risk of brain lesions (15-45%) or neurodevelopmental delay. The demonstration of a full spectrum of fetal anomalies provides extremely valuable information to clinicians and parents-to be. Fetal MR may be a feasible addition for timely and precise diagnosis of cardiac disease and associated anomalies. Prenatal imaging therefore helps to predict pregnancy outcome and prepares couples for the birth of a child with an abnormality. The obtained information may also assist in thorough screening of fetal patients for eligibility for fetal treatment. It may help to prognosticate to some degree important issues of patient's developmental outcome and quality of life.

Biography

Tamara Feygin is currently an Associate Professor of Clinical Radiology at the University of Pennsylvania, Perelman School of Medicine, and a Pediatric Neuroradiologist at The Children's Hospital of Philadelphia (USA). Her primary interests are fetal and neonatal imaging. She led the development and implementation of magnetic resonance "fluoroscopy" in clinical practice for assessment of dynamic processes in fetuses. She is a dedicated educator and mentor for medical students, radiology residents and radiology and neuroradiology fellows. She is the Co-author of several books, chapters and scientific peer-reviewed papers. She has been invited to present her work nationally and internationally. She is a Member of the European Society of Neuroradiology, the Radiological Society of North America, the Society for Pediatric Radiology, and a Senior Member of the American Society of Neuroradiology.

Notes:

Jochen Senges, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Mass media campaign to improve poor diagnosis and poor medical adherence in atrial fibrillation

Jochen Senges
Stiftung Institut für Herzinfarktforschung Ludwigshafen, Germany

Atrial fibrillation (AF) is the most common cardiac rhythm disorder and affects mainly older people. Poor diagnosis of AF: Large registries (Gloria-AF) have clearly shown that about two-third of patients in Western Europe with newly diagnostic non-valvular AF are detected asymptomatic/minimally symptomatic. The rate of previous stroke in these patients is more than twice as high as in symptomatic patients, despite no difference in CHA2DS2-VASc-Score. This may be explained by a longer but subclinical and therefore undiagnosed AF history. Poor medical adherence: poor medication adherence is the second most important factor underlying strokes in patients with atrial fibrillation. Various major studies have demonstrated that less than half of AF-patients are treated with guideline antithrombotic medication. Mass media campaign: these results underline the importance for both: public programs to detect non-valvular AF in the older population but also public education programs that should focus on patients' poor understanding of the importance for sustained antithrombotic medication adherence to prevent stroke. The ARENA study includes a longstanding mass media campaign over one year to improve diagnosis and medical adherence in atrial fibrillation. Actually over 10.000 AF-patients are documented, and first results will be presented at this meeting.

Recent Publications:

1. Puls Miriam, Lubos Edith, Boekstegers Peter, Bardeleben Ralph Stephan von, Ouarrak Taoufik, Butter Christian, et al., (2016) One-year outcomes and predictors of mortality after MitraClip therapy in contemporary clinical practice: results from the German transcatheter mitral valve interventions registry. Eur Heart J 37(8):703–712.
2. Schmidt Martin, Dorwarth Uwe, Andresen Dietrich, Brachmann Johannes, et al., (2016) German ablation registry: cryoballoon vs. radiofrequency ablation in paroxysmal atrial fibrillation-one-year outcome data. Heart Rhythm 13(4):836–844.
3. Zylla Maura M, Brachmann Johannes, Lewalter Thorsten, Hoffmann Ellen, Kuck Karl-Heinz et al., (2016) Sex-related outcome of atrial fibrillation ablation - insights from the German ablation registry. Heart Rhythm 13(9):1837–1844.
4. Brachmann Johannes, Lewalter Thorsten, Kuck Karl-Heinz, et al., (2017) Long-term symptom improvement and patient satisfaction following catheter ablation of supraventricular tachycardia: insights from the German ablation registry. Eur Heart J 38(17):1317–1326.

Biography

Jochen Senges is the Director of the Institute of Herzinfarktforschung Ludwigshafen. He completed his Medical School at University of Heidelberg, Berlin and Frankfurt 1961-1966; Medical Diploma at University of Heidelberg in 1966; Board certification in Internal Medicine in 1974. He was a Senior Staff Physician in Department of Cardiology, University of Heidelberg. He completed his PhD in Medicine with a neurophysiologic dissertation at University of Heidelberg in 1967 and; was a Research Fellow at Stanford University, California, USA in 1969. His main research topic is Cardiac Arrhythmias. He was an Associate Professor of the Medical Faculty, University of Heidelberg in 1981.

Notes:

Ingrid E Dumitriu, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Deregulations in CD4+ T lymphocytes subsets promote inflammation in atrial fibrillation

Ingrid E Dumitriu
St George's University of London, UK

The precise role of inflammation in the development and perpetuation of atrial fibrillation (AF) is yet to be fully uncovered. T and B lymphocytes, the main cellular effectors of adaptive immunity, have pivotal roles in orchestrating inflammation. Different subsets of lymphocytes either promote or prevent inflammation. We are investigating a unique subset of lymphocytes, the $CD4^+CD28$(null) T cells that expand in patients with chronic inflammation. These cells secrete high levels of pro-inflammatory cytokines tumour necrosis factor-α (TNF-α) and interferon-γ (IFN-γ). The response of $CD4^+CD28$(null) T cells is normally maintained under control by regulatory T cells (Treg), a specialized subset of T lymphocytes with suppressive function that maintain immune homeostasis and prevent pathogenic immune responses. The role of $CD4^+CD28$(null) and Treg cells has not been investigated in AF. We found that $CD4^+CD28$(null) T lymphocytes were significantly increased in the circulation of AF patients compared to controls ($p<0.0001$). In addition, AF patients had a marked reduction ($p=0.0001$) in Treg cells. The ratio of $CD4^+CD28$(null) T lymphocytes to Tregs was significantly increased. In contrast, no alterations were identified in circulating B cell subsets. Levels of hsCRP, TNF-α and IFN-γ did not correlate with $CD4^+CD28$null T cell and Treg frequency. Instead, we demonstrate that the expansion of $CD4^+CD28$(null) T cells is caused by defects in apoptosis pathways and increased activation and proliferation in response to homeostatic cytokines. These novel results suggest an imbalance in the mechanisms that maintain homeostasis in the immune response, which may promote inflammation in patients with AF.

Biography

Ingrid E Dumitriu pursued her MD and a PhD Degree in Immunology from San Raffaele DIBIT Scientific Institute, Milan, Italy. She is a Reader (Associate Professor) in Cardiovascular Immunology at St George's, University of London, London UK. She leads the Cardiovascular Immunology Research Group. Her research focuses on the role of inflammation and immune cells in atherosclerosis and other cardiovascular diseases. She is a Nucleus Member of the European Society of Cardiology (ESC) Working Group on Atherosclerosis and Vascular Biology. She is also a Member of the ESC, European Atherosclerosis Society, British Society for Immunology, and ESC Working Group on Peripheral Circulation.

Notes:

Rainer G. H. Moosdorf, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Less invasive intraoperative laser-VT-ablation

Rainer G. H. Moosdorf
University Hospital of Giessen and Marburg GmbH, Germany

While ventricular fibrillation is often induced by acute ischemia or the immediate sequelae of it, ventricular tachycardia (VT) are mostly due to a pathological substrate such as even small scars or inflammatory infiltrates. As a consequence, sole revascularization does influence ischemia induced arrhythmias while most VTs remain unchanged. In case of necessary cardiac surgery, especially for myocardial revascularization, an intraoperative mapping and laser-ablation of the identified foci is recommended. If larger scars or even aneurysms are present, an endocardial and epicardial ablation is performed and has demonstrated its high efficacy with a success rate of more than 90%. In case of only small scars or infiltrates, we refrain from opening the ventricle and only perform an epicardial mapping and deep ablation, which is even curative in more than half of the cases without further need of an ICD implantation, as demonstrated in a study with >30 patients. As the whole procedure is performed on the beating heart, it does not add to ischemic time and does not increase the risk significantly. Laser-VT-ablation is an effective, less invasive, curative therapy for patients with an indication for open heart surgery, especially coronary revascularization and with documented VTs.

Biography

Rainer Moosdorf is working in field of Cardiovascular Surgery since more than 35 years. He started his career as Resident at University Hospital in Giessen in 1978. In 1990, he became a full Professor for Cardiovascular Surgery at University in Bonn and Vice Chairman of the respective department. In 1989 and 1990, he was a Researcher & Clinical Fellow at Carolinas Heart Institute in Charlotte/NC. Since 1994, he has been working at University Hospital in Marburg as a full Professor for Cardiovascular Surgery & Director of the Department. Between 2001 & 2011, he was Vice Medical Director and since 2006, Medical Director at University Hospital in Marburg. His main specialties within cardiovascular surgery are "Laser and arrhythmia surgery, endovascular procedures including TAVI´s and endovascular reconstructions of the aortic arch, reconstructive surgery of the coronaries and some types of the French correction". As Chairman of the board of Medical Network Hessen, he is an official representative of the State of Hessen in the field of Clinical Medicine & MedicalEducation.

Notes:

Abdulraouf Jijeh, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Percutaneous balloon dilatation for congenital aortic stenosis during infancy: A 15-years single-center experience

Abdulraouf Jijeh[1], **Muna Ismail**[1], **Aisha Al Bahanta**[1], **Mahmoud Elbarbary**[1,2], **Ahmed Alomrani**[1] and **Omar Tamimi**[1,2]
[1]King Abdulaziz Cardiac Center, King Abdulaziz Medical City, KSA
[2]King Saud bin Abdulaziz University for Health Sciences, KSA

Background: Congenital AS is a rare disease. Treatment options for newborns are challenging. Newborns may have higher reintervention rate and mortality.

Objectives: The objective of this study is to identify factors predictive of reintervention following balloon aortic valvuloplasty (BAV) for aortic stenosis (AS) during infancy.

Methodology: The work involved a retrospective study carried out between 2001 and 2016. Echocardiography (echo) and cardiac catheterization (cath) data for infants with AS were analyzed, including follow ups and reinterventions. Percent reduction was defined as the ratio between the drop of aortic valve (AV) peak gradient to the baseline peak gradient.

Results: Sixty infants were included, 48 were followed up. Sixteen patients (27%) were neonates. Peak-to-peak gradient at AV was 64±27 mmHg, which was reduced to 27±13 mmHg. Percent reduction was 53±24%. Forty nine patients (82%) had adequate results (residual AV gradient less than 35 mmHg). No significant aortic insufficiency (AI) before procedure, while 6 patients (10%) had increased AI immediately after BAV. 14/48 patients (29%) required an additional BAV. 8/48 patients (17%) required surgical interventions following BAV. Reintervention was associated more with small left ventricular outflow tract (LVOT), high residual AV and low percent reduction. Mortality was 8.3%.

Conclusions: BAV in infancy has a reasonable success rate (82%) with high rate of reintervention. PDA dependent neonates carried the highest risk of mortality. Small LVOT, high AV residual gradient and low percent reduction resulted in more reinterventions.

Biography

Abdulraouf Jijeh has completed his Pediatric Cardiology training (2009) at King Abdulaziz Cardiac Center, Riyadh, Kingdom of Saudi Arabia. Curently he is a Consultant in Pediatric Cardiac Intensive Care at the same center.

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Live Streaming Session

Day 2

Guido Lanzillo et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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Guido Lanzillo

Policlinico di Monza, Italy

Gheorghe Cerin

San Gaudenzio Clinic, Italy

Minimally Invasive Aortic Valve Replacement Using Sutureless Prostheses

Background: Minimally invasive aortic valve replacement (MINIAVR) has been reported with improved results compared to full sternotomy. The use of sutureless valves can decrease the invasiveness of surgery with better outcomes. Main features of sutureless prostheses are the speed of insertion and the excellent hemodynamics. We report our experience of minimally invasive aortic valve replacement with suture less bio prostheses.

Methods: From January 2015 to September 2018, 200 patients (67 % male, mean age 77,5y, Euro score II 2.7) with severe aortic stenosis received aortic valve replacement using a sutureless aortic valve (Perceval®, Sorin, Italy) with a minimally invasive approach through a "J" ministernotomy (MINIAVR). This group has been compared with homogeneous AVR patients with median sternotomy (SAVR). Outcome measures were the length extracorporeal circulation (ECC), aortic cross-clamping (AXC), postoperative ventilation, blood loss, intensive care unit (ICU) and hospital stay.

Results: Thirty-day mortality was 0.5% in both groups. ECC times were 42' (MINIAVR) and 48' (SAVR), p<0.01. AXC was 25' (MINIAVR) vs 36' (SAVR), p<0.01. Postoperative ventilation was 2.2 (MINIAVR) vs 7.2h (SAVR), p<0.001. 1st day blood loss was 161 ml vs 355 ml, p<0.05; ICU stay 22h (MINIAVR) vs 37h (SAVR), hospitalization 4d (MINIAVR) and 5d (SAVR), p:NS. No paravalvular regurgitation nor conversion to full sternotomy were recorded; pacemaker implantation was necessary in 6 (MINIAVR) vs 5 (SAVR) cases, p:NS.

Conclusions: MINIAVR with suture less prostheses reduce ECC and AXC times, early complications (prolonged ventilation, blood transfusion, paravalvular leakages and aortic regurgitation), reduce ICU and hospital stay and reduce costs. The use of sutureless valves can lead to a higher adoption rate of MINIAVR, with negligible learning curve. MINIAVR with sutureless prostheses offers an attractive option, with low rate of pacemaker implantation. We conclude that MINIAVR can be performed safely with results that are equivalent or better to those achieved through full sternotomy.

Biography

Dr. Guido Lanzillo, graduated from Catholic University. He was the member of the Italian Society of Cardiovascular Surgery (1984) and Member of the European Society for CardioThoracic Surgery (1997). In 1998 he was a Fellow of the European Board of Thoracic and Cardiovascular. He was the Winner, in 1992 and 1993, of the prize "De Gasperis-Donatelli", for the best Italian publication in cardiac surgery. He is currently working as a Senior cardiac surgeon, Head of the Cardiac Surgery Dept, Policlinico di Monza, Italy.

Notes:

Gian Luca Martinelli, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Gian Luca Martinelli

San Gaudenzio Clinic, Italy

Why Suture less in Aortic Valve Replacement?

Aortic valve replacement (AVR) via a median sternotomy approach, has been largely shown to be safe and long-term efficacious, and thus currently represents the "gold-standard" approach for aortic stenosis treatment. Over the past two decades the number of AVR interventions has dramatically increased with outcomes that have improved despite the increasing age of patients that carry a growing burden of comorbidities. Octogenarians and high-risk patients, who were contraindicated for surgery in the past, currently represent a considerable portion of daily surgical activity, with increased survival and functional benefits being reported afterwards. Nevertheless, until recent years there were reports of a significant rate of patients who were deemed inoperable and so turned down for AVR mostly based on age and subjective estimation of procedural risk. This observation has recently triggered the development of less invasive interventions such as percutaneous trans-catheter aortic valve implantation (TAVI) and minimally invasive aortic valve replacement, to reduce the traumatic impact of the surgical procedure, thus fulfilling lower risk patients' expectations on the one hand and extending the operability toward increasingly high-risk patients on the other. In this setting, minimally invasive AVR (Mini-AVR), by allowing reduced surgical dissection, may lead to lower blood loss, wound complications, postoperative pains, improved postoperative respiratory recovery, earlier mobilization and functional recovery. However, due to the technical challenges involved and the lack of robust data showing a substantial survival benefit and a reduced occurrence of major post-operative complications from MI-AVR over conventional management, this approach has not been universally adopted. Opponents of minimally invasive AVR claim that potential advantages (reduced surgical chest trauma and improved cosmetic) are counterbalanced by longer cross-clamp and cardiopulmonary bypass (CPB) duration, which are associated with poorer outcomes. However, the introduction of suture less bio-prosthesis and Rapid Deployment Valve (RDV), has transformed the Mini-AVR easier, more fast and reproducible. In our personal experience in the last five years, we treated all patients in Mini-AVR with those new surgical prostheses and we consider TAVI in high risk/inoperable patients and in octogenarian. We have compared clinical results of surgical treatment of isolated aortic stenosis (mini-AVR/standard AVR/TAVI) in our Center and we have observed that mortality rate has decreased (from 3% to 1 % in the last 5 years) and the Logistic Euroscore has increased (from 7% to 12% in the same period). Furthermore, our experience with more than 250 cases, RDV showed good outcomes at discharge and 24 months with an excellent haemodynamic profile exhibiting no severe prosthesis – patient – mismatch, even in patients with a small annulus. Para valvular leaks were non-existent or trivial in all cases. These preliminary results suggest potentially advantage of RDV in patients with small aortic annulus

Biography

Martinelli Gian Luca is currently working as Vascular Surgeon at San Gaudenzio Clinic - Gruppo Policlinico di Monza- Novara, Italy. From 2014-2015: Head of Cardiac Surgery Department Policlinico di Monza- Monza Brianza, Italy. September 2012 to May 2014 co-Director of Cardiac Surgery Service, Casa di Cura Santa Maria (private hospital accredited by Servizio Sanitario Nazionale - Italian National Health Service), Bari. From 2002-2012: Head of Cardiac Surgery service in the Cardiovascular Department of St. Anna Hospital, Catanzaro, referral Center accredited by Servizio Sanitario Nazionale (Italian National Health Service). Free-lance cardiac surgeon with Azienda Sanitaria Ospedaliera San Giovanni Battista–Molinette Hospital in Turin in 2001. In 2000: Consultant for the Jo Ann Medical Center of Tblisi, Republic of Georgia, where I initiated the first Center of Cardiosurgery for adults, with the support of local government. From January 2 1996 - August 2000: Full-time Staff Assistant at the Cardiovascular Surgery Department of the Hospital Villa Maria Pia in Turin. Responsibilities as primary surgeon. From January 26 1994-January 2 1996: Staff Assistant at the Organic Surgery Unit for Cardio and Vascular Surgery of the Silvestrini Hospital of Perugia (Head: Professor Ugo Mercati).

Gheorghe Cerin, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Gheorghe Cerin

San Gaudenzio Clinic, Italy

Transthoracic echo in aortic stenosis: From clinics to operating theater

Aortic stenosis (AS) has become the most common primary heart valve disease, being an important cause of cardiovascular morbidity and mortality. In Europe and North America AS is the most common primary valve disease needing surgery or catheter intervention. Due to the ageing of population the prevalence of moderate to severe degenerative AS increased, overcoming ≈4% in patients over 75 years of age. Around 12% of patients at this age, may have AS of various degree. Echocardiography is the key tool for the diagnosis and evaluation of AS and is the primary noninvasive imaging method for assessment. The guidelines provide clear recommendations for recording and measurement of AS severity using echo. Several echo criteria define a severe AS: an aortic valve area <1cm2, a mean G >40mmHg and a maximum jet velocity >4m/s. However, although accurate quantification of disease severity is an essential step in patient management, clinical decision-making depends on several other factors, most importantly, whether or not symptoms are present. Nevertheless, due to ageing of patients either the natural history of AS and the clinical presentation of patients, changed. Early clinical features may be often non-specific, with palpitations, dizziness, fatigue. Moreover, some people may be unaware of gradual decline in their exercise capacity. That way the role of other echocardiographic method is presented and discussed, from dobutamine stress echocardiography in case of low flow - low gradient AS (to differentiate a true severe AS against a pseudo-severe AS), till physical stress echocardiography, in asymptomatic patients with severe AS. Additionally, the role of other method of diagnosis as MSCT and CMR are presented.

Biography

Gheorgin Cerin, Fellow of European Society of Cardiology and Head of the Cardiology and Internal Medicine Grouping, Cardiac Surgery Dpt, San Gaudenzio Clinic, 'Policlinico di Monza' Hospital Group, Italy. Senior Consultant Cardiologist at the Cardiovascular Center, Monza Hospital, Bucharest, Romania. President of the Association of Romanian Doctors in Italy. He has an outstanding experience in clinical cardiology and internal medicine, daily connected in the last 25 years to perioperative management of the patients candidate to open heart surgery. He has Vast experience in the field of echocardiography as tool in perioperative assessment and management of patients candidates to cardiac surgery: more than 35 years of experience in echocardiography – the last 25 years as echocardiographer in cardiac surgery. Specific expertise in mitral valve diseases and generally in echocardiography for valves repair surgery. He is the Lecturer and chairman in various international meetings in cardiology, cardiac surgery and echocardiography. Since 1994 he has been working as a tutor and organizer of training programs in cardiology and cardiac surgery in Italy for the Italian, Romanian, Moldavian, Georgian and Polish doctors. Since 2010 he is the promotor of the live streaming sessions in cardiac surgery and echocardiography either in Italy or Romania, as tool and novel modality of tele-learning programs in cardiology and echocardiography (more than 40 live sessions from the operating room to the congress halls abroad in Europe as Austria, Spain, Romania, Moldavia, Turkey, Georgia, Poland). He has been granted by Diploma and gold medal the Romanian Scientists Academy (Oct 2007) for "outstanding contributions in the collaboration with Romania in the field of Cardiology, Cardiovascular Surgery and training young specialists".

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Scientific Tracks & Abstracts

Day 2

Day- 2

SESSIONS

Interventional Cardiology | cardiovascular Pharmacology | Heart Diseases | Cardiac Rhythm Abnormalities | Cardiomyopathies | Clinical Cardiology

Chair: Rainer G. H. Moosdorf, University Hospital of Giessen and Marburg GmbH, Germany

SESSION INTRODUCTION

Title: Differential Therapy of Myocarditis and Inflammatory Cardiomyopathy
Heinz-Peter Schultheiss, Institute of Cardiac and Diagnostic Therapy, Germany

Title: Subclinical atrial fibrillation: Diagnosis and therapeutic challenges
Peter Ott, Sarver Heart Center, USA

Title: Cardiovascular diseases: Focus on endoplasmic reticulum stress and Nrf2 signalling
Chiara Mozzini, University of Verona, Italy

Title: The Challenges of Establishing a Systemised STEMI program in Low to Middle Income Countries: The Philippine Experience
Ryan Del Rosario Buendia, St. Luke's Medical Center, Philippines

Title: Deletion of miR-147 in macrophages promotes atherosclerosis
Maliheh Nazari-Jahantigh, Institute for Cardiovascular Prevention - LMU, Germany

Title: Thoracic aortic aneurysm and age-related vascular remodeling: Study of epigenetic mechanisms
Vaiva Patamsyte, Lithuanian University of Health Sciences, Lithuania

Heinz Peter Schultheiss, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

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October 22-24, 2018 | Rome, Italy

Differential therapy of myocarditis and inflammatory cardiomyopathy

Heinz Peter Schultheiss
Institute of Cardiac and Diagnostic Therapy, Germany

Cardiomyocytes can be destroyed by direct virus damage, the antiviral immune response, or a truly autoimmune injury. Besides an optimal heart failure therapy, the mainstay of treatment for myocarditis and inflammatory cardiomyopathy (CMi) is the biopsy-proven specific immunomodulatory treatment regarding the underlying pathophysiological mechanisms. Chronic viral infections of the heart (mainly Parvovirus B19, Human-Herpes virus (HHV) 6, Coxsackie-adeno virus, Epstein-Barr virus, Cytomegaly virus, and Hepatitis virus) are considered one antecedent event leading to progressive dysfunction of the myocardium, often with an impaired prognosis due to a virus or immune-mediated myocardial injury. The effectiveness of anti-viral-therapy has been proven in recent studies, showing that enterovirus/adenovirus – positive patients benefit from anti-viral therapy with interferon beta-1b, whereas in patients suffering from parvovirus B19 infection no established therapy exists. However, the nucleoside analogues telbivudine seems to be a promising drug in patients with proof of active viral replication. Follow-up studies revealed an association with HHV6 and the clinical course of myocarditis and CMi. HHV-6 is able to integrate its genomes into telomeres of human chromosomes. We recently demonstrated that antiviral therapy with ganciclovir can diminish HHV-6 replication as well as cardiac symptoms of these patients. Myocardial inflammatory processes due to autoimmunity warrant immunosuppressive treatment in order to prevent immune-mediated myocardial injury. Immunosuppression (treatment with prednisone and azathioprine for 6 months) demands biopsy-based exclusion of virus since virus-positive patients do not improve or even deteriorate under anti-inflammatory treatment, while virus-negative patients with post-infectious, auto-immune inflammatory process respond well in clinical trials, and after termination long lasting LVEF improvement has been documented. In myocarditis and inflammatory cardiomyopathy, there is, apart from heart failure therapies, no alternative to an etiologically driven specific treatment. Endomyocardial biopsy is the only diagnostic tool for establishing the pathophysiological mechanisms (viral or immune-mediated). The exact analysis and quantification of intramyocardial infiltrates as well as the diagnosis of viral pathogens has high clinical value for initiating a specific, pathophysiological driven, personalized therapy.

Biography

Dr. Heinz-Peter Schultheiss, Professor of Internal Medicine and Cardiology is CEO of Institute for cardiac diagnostic and therapy (IKDT) Berlin, Germany since 2003. He was the chairman of the Working group “Inflammatory heart muscle diseases“ of the German Society of Cardiology, Chairman of the “Working Group on Myocardial and Pericardial Disease“ of the European Society of Cardiology, Member of the "Council on Cardiomyopathies“ of the International Society of Cardiology, Chairman of the Medical Society Berlin, Member of German Society for Internal Medicine, Member of European Society of Cardiology.

Peter Ott, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Subclinical atrial fibrillation: Diagnosis and therapeutic challenges

Peter Ott
Sarver Heart Center - Banner University Medical Center, USA

While clinical atrial fibrillation (AF), is a well-known risk factor for stroke, the therapeutic implications for device detected subclinical atrial fibrillation (SCAF) remain unknown. A review of 950 patients with the implanted loop recorder revealed an incidence of SCAF (> 6 minutes in duration) ranging from 22-34% at 18 months follows up. Most episodes were asymptomatic and brief (<30 minutes). Several studies in patients with implanted pacemaker or ICD showed an incidence of SCAF between 20-50% at 12-18 months follow up. Patients with SCAF had an increase in rates of thrombo-embolic (TE) complications (HR 2-2.5), resulting in an absolute TE risk of 1.0–2.5%/year. The stroke risk was highest in patients with increased CHADS stroke risk score. A recent large trial showed increased stroke rates only in patients with SCAF > 24 hrs duration. In this trial only 25% of SCAF episodes were > 24 hours in duration. Furthermore, in several trials, only 10-20% had SCAF within 30 days prior to the TE event. The remainder had either no SCAF, SCAF > 30 days prior to, or SCAF only after the TE event. In patients with clinical AF, anticoagulation therapy has been shown to reduce the risk of stroke; the benefit/risk ratio is not clear for patients with SCAF. Two studies are currently underway (ARTESIA NCT01938248 – NOAH NCT02618577) randomizing patients with device detected SCAF (> 6 min) to anticoagulation therapy versus placebo or aspirin. At the present time, in light of unproven benefit, yet real bleeding risk, the use of anticoagulation therapy may best be limited to patients with SCAF > 24 hrs episode duration and increased CHADS/CHADSVAS score. Close monitoring for the development of prolonged AF episodes is warranted.

Biography

Peter Ott obtained his medical degree from the University of Heidelberg, Germany. After Internal Medicine residency (Tucson, Arizona), he pursued specialty training in cardiology (Denver, Colorado) and cardiac electrophysiology (Salt Lake City, Utah). Since 1999 he is a leading member of the cardiac electrophysiology section at the Sarver Heart Center, University of Arizona. He has published in numerous reputed, peer-reviewed journals.

Notes:

Chiara Mozzini, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Cardiovascular diseases: Focus on endoplasmic reticulum stress and Nrf2 signalling

Chiara Mozzini
University of Verona, Italy

This presentation is intended primarily to summarize the understanding of the interrelated roles of endoplasmic reticulum (ER) stress, oxidative stress and inflammation in cardiovascular diseases. Insults interfering with ER function lead to the accumulation of unfolded and misfolded proteins in the ER. An excess of proteins folding in the ER is known as ER stress. This condition initiates the unfolded protein response (UPR). When the UPR fails to control the level of unfolded and misfolded proteins, ER-initiated apoptotic signalling is induced. Moreover, the role of the protective nuclear erythroid-related factor 2 (Nrf2)/antioxidant-related element (ARE) and the activation of the pro-inflammatory nuclear factor-kappa B (NF-kB) are analyzed. Oxidative stress, inflammation and ER stress are closely entwined phenomena. They are involved in the pathogenesis of different cardiovascular diseases. Current literature data are presented, focusing on three topics of related pathologies: atherosclerotic plaque, coronary artery disease and diabetes. This presentation provides a basic platform for study and application to several other conditions in which oxidative stress, ER stress and inflammation are key features. Future studies in this area may identify the most promising molecules to be investigated as common targets for cardiovascular disease.

Biography

Chiara Mozzini pursued her Medical Doctor Degree from the University of Brescia, Italy (2006). She is a Board Certified Specialist in Internal Medicine at the University of Verona, Italy (2012). Section of Internal Medicine University of Verona, Italy Medical Doctor Degree University of Brescia (Italy). She received her PhD certification in clinical and experimental medical sciences. She is an Adjunct Professor (Researcher of type A)- Section of Internal Medicine at the University of Verona, Italy. Her research field of interest includes: atherosclerosis, cardiovascular diseases, coronary artery disease, diabetes, oxidative stress, endoplasmic reticulum stress and ultrasound (cardiac-abdominal- vascular). Her H-index is 11.

Notes:

Ryan Del Rosario Buendia, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

The challenges of establishing a systemized STEMI program in low to middle income countries: The philippine experience

Ryan Del Rosario Buendia
St Luke's Medical Center, Philippines

Acute Coronary Syndromes, particularly ST segment elevation Myocardial Infarction is the highest cause of morbidity and mortality among cardiovascular diseases both in developed and developing countries. Primary angioplasty is the gold standard of therapeutic care in STEMI. ESC and AHA recommendations indicate that there is a significant decrease in morbidity and mortality with door-to-open artery time of less than minutes. The ASEAN population (Southeast Asia) has a trend towards increasing incidence of coronary artery disease. Singapore, Thailand, recently Vietnam have adequate government support/insurance to cover for primary angioplasty expenses. These countries have established STEMI systems in place so more citizens of their respective countries are able to avail of the primary angioplasty as treatment for STEMI. The Philippines, with a population of 102 million, the country being an archipelago, as a nation, has a very challenging geographical, economical demographics in terms of formulating a STEMI program both in metropolitan and rural areas. These factors, together with lack of government support and sufficient insurance coverage has created a big challenge to health care providers in terms of providing both efficient thrombolytic therapy and a systemized nationwide STEMI program. The author, and the national society of interventional cardiologists, are realizing these needs, spearheaded institutional programs within their hospitals to create STEMI programs and follow the 'hubs' and 'spokes' model. The author's own institution, St. Luke's Medical Center Global City in Metro Manila initiated the 1st STEMI program with 24/7 capability. The door to balloon time decreased from 156 mins to 86 minutes after a year. The national society of interventionists are creating a program to establish a systemized nationwide STEMI program. That is a big challenge.

Biography

Ryan Del Rosario Buendia has completed his medical school in De la Salle University in the Philippines. He finished his Adult Cardiology training and Interventional Cardiology training in St. Luke's Medical Center Global City. He further trained in Cardiovascular Institute, Tokyo, Japan and in Chang Gung Memorial Hospital, Kaohsiung, Taiwan for peripheral interventions. He also had training in Extracorporeal Membrane Oxygenator (ECMO) management in La Pitie'-Salpetriere University hospital in Paris, France. He is currently an assistent training officer in Interventional Cardiology n his institution. He is a member of the STEMI Committee of the Philippine Society of Cardiac Catheterizations and Interventions.

Notes:

Maliheh Nazari Jahantigh, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Deletion of miR-147 in macrophages promotes atherosclerosis

Maliheh Nazari Jahantigh
Institute for Cardiovascular Prevention - LMU, Germany

Atherosclerosis is the main cause of cardiovascular disease that are number one killer worldwide. Macrophage dysfunction contributes to the progression of atherosclerosis and microRNAs, negative regulators of gene expression, mediate macrophage function upon activation. miR-147 is upregulated in inflammatory macrophages as well as murine and human atherosclerotic plaques, while it is downregulated in peripheral monocytes from patients with coronary artery disease. However, the role of macrophage-miR-147 in atherosclerosis is yet unknown. To study that, we generated a mouse line with a deletion of the miR-147 gene in myeloid cell line, Apoe-/-LysMcreMir147flox/flox (M-Mir147-/-), and together with Apoe-/-LysMcreMir147+/+ (M-Mir147+/+) mice fed them a high cholesterol diet (HCD) for 12 wks. miR-147 deficiency in macrophages increased atherosclerosis in M-Mir147-/- versus M-Mir147+/+ mice. The increased lesion size was associated with enlarged necrotic core area, increased lesional macrophage content, increased cell death, and impaired clearance of apoptotic cells by macrophages. The effects of miR-147 deletion on proteome of inflammatory macrophages was studied by mass spectrometry in vitro and suggests that energy metabolism and Akt/mTOR signaling are the main targets of miR-147 in inflammatory macrophages. MiR-147 interactome was studied in inflammatory macrophages from M(tAgo2)-Mir147-/- and M(tAgo2)-Mir147+/+ mice, which expresses a tagged Ago2 gene following Cre recombinase activity, using an in vitro tAgo2 immunoprecipitation assay followed by RNA sequencing. Integrated analysis of interactome and proteome data suggested Tomm6, Pdk3, and Pim1 as potential targets of miR-147 in inflammatory macrophages. Our results indicate that macrophage-miR-147 plays a protective role against atherosclerosis probably by improving macrophage function under inflammatory condition.

Biography

Maliheh Nazari Jahantigh obtained her bachelor's in the field of cellular and molecular biology from Shahid Chamran University, Iran and master's Degrees in the field of cellular and molecular biology from Isfahan university, Isfahan, Iran and was selected as an outstanding student in the country during her master studies. She pursued her PhD in the field of Biology (2013) from RWTH Aachen University, and then started her Postdoctoral studies at Ludwig Maximillian University Munich (LMU), Germany respectively. Currently she is a Junior Group Leader at the Institute for Cardiovascular Disease (IPEK) of LMU. She has been studying the role of microRNAs during atherosclerosis since 2009 and has published several papers in reputed journals in this field.

Notes:

Vaiva Patamsyte et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Thoracic aortic aneurysm and age-related vascular remodeling: Study of epigenetic mechanisms

Vaiva Patamsyte[1], Dovydas Gecys[1], Giedrius Zukovas[1], Stase Gasiule[2], Vaidotas Stankevicius[2], Giedrius Vilkaitis[2], Rimantas Benetis[1] and **Vaiva Lesauskaite[1]**

[1]Lithuanian University of Health Sciences, Lithuania

[2]Institute of Biotechnology - Vilnius University, Lithuania

The key players in age-related vascular remodeling are vascular smooth muscle cells (VSMCs). Senescent VSMCs are phenotypically shifted from contractile into the secretory phenotype. Same phenomenon occurs during morphogenesis of dilatative pathology of ascending aorta. We tested if miR-21-5p, miR-143-3p, and miR-145-3p expression levels are similar during formation of thoracic aortic aneurysm (TAA) and in aging aorta. Expression of miRNAs was evaluated in aortic tissue specimens from TAA patients (N=8), donors and coronary artery bypass surgery (CABG) patients younger than 55 years (N=7), and CABG patients older than 70 years (N=8) using qRT-PCR. ΔCt values for each miRNA were calculated using miR-16-5p and miR423-5p as reference. A significant increase in miR-21-5p expression was found in TAA patients compared to younger individuals (p=0.04). Even a stronger difference was observed when young individuals were compared with older individuals (p=0.03). There was no significant difference in miR-21-5p expression between TAA patients and older individuals (p=0.05). These results show that similar miR-21-5p expression profiles can be identified in dilated and aging aortic tissue. A strong association was found between aortic diameters of TAA patients with bicuspid aortic valve (BAV) and miR-21-5p expression (r= 0.821, p=0.02). Same tendency was observed between age and miR-21-5p expression in individuals without TAA (r= 0.576, p=0.02). We did not find a significant difference in miR-143-3p and miR-145-3p expression among the three study groups (p>0.05). Our results show that epigenetic mechanisms involved in age related vascular remodeling are similar to the pathological processes which occur during formation of TAA.

Biography

Vaiva Patamsyte pursued her BSc in Genetics and MRes Biosciences from Cardiff University, UK and is currently a PhD student at the Lithuanian University of Health Sciences, Lithuania. She has been working in the Laboratory of Molecular Cardiology for the last four years. Her research focuses on genetic and epigenetic regulation of vascular remodeling.

Notes:

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Scientific Tracks & Abstracts

Day 3

Day- 3

SESSIONS

Hypertension | Coronary Heart Diseases | Case Reports on Cardiology | Pediatric Cardiology | Cardiac Regeneration | Clinical Cardiology

Chair: Marco Picichè, San Bortolo Hospital, Italy

SESSION INTRODUCTION

Title: Specialist directed remote heart management in the post-acute facility setting improves medication management and clinical outcomes
Kevin A. Courville, Prevail Heart Clinics, USA

Title: Crucial role of mitofilin and cyclophilin D interaction in post-ischemic GPER1-induced cardioprotection against ischemia-reperfusion injury
Jean C. Bopassa, University of Texas Health Science Center, USA

Title: Fontan in older age group; Results from pakistan
Muhammad Muneer Amanullah, Aga Khan University, Pakistan

Title: Systemic lupus erythermatous is a risk factor for cardiovascular disease: A nationawide, population-based study
Sang Yeob Yim, Korea University Hospital, South Korea

Title: Successful endovascular left iliac vein stent insertion treatment of acute DVT – May Thurner Syndrome
Kenan Abdurrahman Kara, Yeditepe University Hospital, Turkey

Kevin A Courville, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Specialist directed remote heart management in the post-acute facility setting improves medication management and clinical outcomes

Kevin A Courville
Prevail Heart Clinics, USA

Although much time and resources are devoted to improving re-admission strategies for congestive heart failure in the outpatient setting, there is a paucity of effort directed towards post-acute facilities such as nursing homes and assisted living facilities. The vast majority of management of chronic cardiovascular diseases in this setting is performed by primary care physicians, nurse practitioners and physician assistants with little or no specialty involvement. The result is variable medication management with a high admission and re-admission rate of patients with chronic cardiovascular disease. Given the looming shortage of cardiovascular specialists in the United States, alternatives strategies to specialty care in this setting are needed. We observed the use of Pulsario remote heart management system in this setting. This system enables real time specialty care to be delivered without the physical presence of the cardiovascular specialist. Within the first 30 days of system deployment, there was an improvement in guideline directed medical therapy specific to a patient's underlying medical condition by 92.3%, the management of hypertension to goal was improved by 77.8% and 13.6% of patients avoided hospitalization. These results reveal the rapid improvements in medical therapy, reduction in hospitalization and feasibility of specialty care delivery by Pulsario remote heart management system within the post-acute care facility.

Biography

Kevin A Courville, MD is a Fellow of the Heart Failure Society of America (FHFSA), Fellow of the American College of Cardiology (FACC) and Alpha Omega Alpha Honor Medical Society. He received his cardiology training at Ochsner Heart and Vascular Institute in New Orleans, Louisiana (USA). He has been recognized as one of the top cardiologists in America for several years and dedicates his clinical, research and development efforts into the outpatient management of heart failure and chronic cardiovascular diseases.

Jean C Bopassa, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Crucial role of mitofilin and cyclophilin D interaction in post-ischemic GPER1-induced cardioprotection against ischemia-reperfusion injury

Jean C Bopassa
University of Texas Health Science Center, USA

We have recently shown that GPER1 (G protein-coupled estrogen receptor 1) mediates acute pre-ischemic estrogen-induced protection of the myocardium from ischemia/reperfusion injury via a signalling cascade that includes PKC translocation, ERK1/2/GSK-3β phosphorylation and inhibition of the mitochondrial permeability transition pore (mPTP) opening. Here, we investigated the impact and mechanism involved in post-ischemic GPER1 activation in ischemia/reperfusion injury. We determined whether GPER1 activation at the onset of reperfusion confers cardioprotective effects by protecting against mitochondrial impairment. We found that post-ischemic E2 (17β-oestrogen) and G1 (both GPER1 agonists) administration to both male and female ovariectomized-rats reduced myocardial infarct size. Post-ischemic E2 administration preserved mitochondrial structural integrity and this was associated with a decrease in ROS production and increased mitochondrial membrane potential, as well as an increase in the mitochondrial Ca2+ load required to induce mPTP opening via activation of the MEK/ERK/GSK-3β axis, effects that were prevented by the GPER1 antagonist, G15. Interestingly, this post-ischemic GPER1 cardioprotection was associated with the decrease degradation of the in the inner mitochondrial membrane protein, referred to as mitofilin, during reperfusion, which protects the interaction between mitofilin-cyclophilin D in the inner mitochondrial membrane resulting in the delay of the initiation of the mitochondrial permeability transition (mPT) that is associated with the mPT pore opening. Additionally, we revealed that the mechanism of mitofilin degradation during reperfusion is associated with its ubiquitination and also with the increase in calpain10 activity.

Biography

Jean C Bopassa pursued his PhD (2007) from Claude Bernard University Lyon 1, France and Postdoctoral studies from Harvard University School of Medicine and the University of California Los Angeles (UCLA) School of Medicine respectively. He is currently the Director of a Cardiovascular Research Program in the Department of Cellular and Integrative Physiology at the University of Texas Health Science San Antonio (UTHealth SA) School of Medicine. He has published more than 25 papers in reputed journals, and has been serving as an Editorial Board Member of repute for several journals.

Notes:

Muneer Amanullah et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

Fontan in older age group; results from pakistan

Muneer Amanullah, Laraib Javed and **Rubab Mansoor**
The Aga Khan University, Pakistan

Introduction: Pakistan has a prevalence of 50,000 children born with CHD (coronary artery disease) per year. untreated single ventricle carries a poor prognosis. The Fontan procedure creates a direct connection between the vena cava and the pulmonary arteries. The median age surgery for the Fontan procedure in developed centers is 1.5–4 years.

Objectives: This study assesses the outcome of the Fontan operation at the Aga Khan University (AKU) and compares to the international literature.

Methodology: This is a retrospective case series of Fontan procedures performed at the AKU, between October 2014 and September 2018. The data is analyzed using SPSS version 20.

Results: Of the 24 patients 18 (75%) were males. Mean age at operation was 8.5 years (2.5-21 years). 8 underwent multistage palliation (stage I and II), 12 had prior Glenn shunt and 4 had primary single stage Fontan. RHC data; PVR of 1.2 woods unit, mean PA pressures 13 mmHg and an LVEDP 10 mmHg. All patients were in sinus rhythm. Mean bypass time was 147minutes, Aortic cross clamp time (7 patients) 30 minutes and the mean operation time was 5 hours. Fenestration was performed in 18 patients. There was prolonged drainage of pleural effusions in 75% of the patients. Mean pre-operative oxygen saturations increased from 73% to 83% post-operatively. Operative mortality was 0%.

Conclusions: The median age of our patients is significantly higher (7.5 years). Nearly 80% had graft fenestration and with a higher ventilation and ICU duration. Despite these differences our results show that the Fontan procedure is performed safely at the Aga Khan University Hospital.

Biography

Muneer Amanullah has done his FRCS in the field of General Surgery at Edinburgh (UK). He was a Fellow Researcher in the Department of Congenital and Pediatric Cardiac Surgery in UK London. Currently, he is an Interim Associate Dean and also an Associate Professor for Congenital and Pediatric Cardiothoracic Surgery at Aga Khan University, Pakistan.

Notes:

Sang Yeob Yim et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Systemic lupus erythermatous is a risk factor for cardiovascular disease: A nationawide population-based study

Sang Yeob Yim[1], Eun Hui Bae[2], Kyung Do Han[3], Jin Huyng Jeong[3], Hong Sang Choi[2], Ha Yeon Kim[2], Chnag Seong Kim[2], Seong Kwon Ma[2] and **Soo Wan Kim[2]**
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[2]Chonnam National University, Gwangju, Republic of South Korea
[3]The Catholic University of Korea, Republic of South Korea

Background: Cardiac involvement is present in more than half of the patients with systemic lupus erythematosus (SLE). However, large scale studies on the prevalence of atrial fibrillation (AF) in this disease do not exist.

Aim: We aimed to investigate the incidence and clinical significance of cardiovascular disease(CVD) in SLE patients.

Methodology: SLE patients (n=21,143; mean age, 14.8±13.13 years; female, 90.38%) without previous CVD were selected from the Korean National Health Insurance Service National Sample Cohort database between 2008 and 2014 respectively. Age- and sex-matched controls (n=105,715) were randomly sampled in a 5:1 ratio from non-SLE individuals. Both cohorts were followed up for incident CVD and death until 2015.

Results: During 8 years of follow-up, atrial fibrillation was newly detected in 481 (2.27%) SLE patients and 619 (0.59%) controls (incidence: 3.692 and 0.941 per 1000 person-years respectively). SLE patients were at higher risk for atrial fibrillation development compared to controls (hazard ratio, 3.926; 95% confidence interval, 3.484-4.422) after multivariate adjustment. On subgroup analysis, SLE increased the risk for atrial fibrillation, especially in younger (age younger than 40 years) female without comorbidities.

Conclusions: SLE was an independent risk factor for CVD development in patients without previous CVD, especially in younger female, stressing the importance of cardiac assessment in SLE patients.

Biography

Sang Yeob Yim pursued his MD from Chonnam University School of Medicine, Republic of South Korea. He works as Interventional Cardiologist at Korea University Ansan Hospital. He has published more than 30 papers in reputed journals.

Notes:

Kenan Abdurrahman Kara, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Successful endovascular left iliac vein stent insertion treatment of acute DVT: May Thurner Syndrome

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May Thurner Syndrome also known as "Iliac Vein Compression Syndrome" or Cockett's Syndrome. In this syndrome the left common iliac vein is compressed by the right common iliac artery and it causes development of deep vein thrombosis. Anticoagulant therapy is one of the most chosen protocol for this syndrome but alone is highly risky for the development of pulmonary embolism and early recurrence. We report a case of May-Thurner Syndrome with the treatment of Catheter-guided thrombolysis and angioplasty with stent implantation, we think this is a safe and effective method for May-Thurner Syndrome. We report a case of a 55-year old woman. A female patient presented to the emergency department with complaints of swelling, edema and pain which had started about 4 hours ago. In physical examination, she was normotansive and +2 edemas were present. Peripheral pulses were open. No difficulty in breathing or tachycardia. A diagnosis of deep vein thrombosis from iliac vein to popliteal vein was made. The patient was taken to the interventional catheterization unit. Puncture was made to popliteal vein and a sufficient recanalization was made from left common iliac vein to vena cava inferior using AngioJet™ Peripheral Thrombectomy System by Boston Scientific. Narrowness in left iliac vein and residue thrombosis were observed, and accordingly balloon dilatation was performed first and a stent was inserted into the iliac vein and a balloon dilatation was performed again in the stent. After the procedure, popliteal vein was completely opened, and a very slight amount of residual thrombus was seen in the left iliac vein. The procedure was finalized since the venous return flow was very good. The patient was discharged with coumadin treatment.

Biography

Kenan Abdurrahman Kara graduated in Cardiovascular Surgery from the Ege University Medicine School in 2006. He completed his cardivascular asistant training form Süleyman Demirel University Heart Center (2012). In 2009-2010 he worked for Professor Francesco Donatelli (Milan, Italy) as a Visiting Assistant. Presently he is working as an Asistant Professor at the Yeditepe University Hospital Cardiovascular Surgery Department. His interested areas are: minimally invasive cardiac surgery, multiple arterial graft usage in CABG and endovascular procedures.

Notes:

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Young Researchers Forum Day 3

Shaneel Shah, J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Comparison of the outcomes of CABG vs PCI procedures in patients with poor left ventricular function (ejection fraction <30%): A propensity-matched analysis

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Background: Existing evidence comparing the outcomes of coronary artery bypass graft surgery (CABG) vs. percutaneous coronary intervention (PCI) in patients with poor left ventricular function (LVF) is sparse and flawed. This is largely due to patients with poor LVF being underrepresented in major research trials and the out-dated nature of some studies which do not consider drug-eluting stent (DES) PCI.

Methodology: Following strict inclusion criteria 717 patients who underwent revascularisation by CABG or PCI between 2002 and 2015 were enrolled. 100% of the patients had poor LVF (defined by ejection fraction <30%). By employing a propensity score analysis, 186 suitable matches (93 CABG, 93 PCI) were identified. Several outcomes were evaluated, in the matched population, using data extracted from national registry databases.

Results: CABG patients required a longer length of hospital stay post-revascularisation compared to PCI, 8.91±1.38 and 4.96±1.38 days respectively ($p<0.0001$). Cox-regression proportional-hazards analysis found that PCI had a higher adjusted 5-year mortality rate (HR 1.752, 95% CI 0.998-3.078, $p=0.05$). This trend was consistent amongst urgent cases of revascularization, patients with 3 or more vessels with coronary artery disease, and cases where complete revascularization was achieved. Sub-analysis found the cumulative 5-year survival distribution for PCI with DES to be significantly higher than PCI without DES, but still lower than CABG (log-rank $p=0.037$; CABG 67.6±5.3%, PCI with DES 54.6±3.3%. PCI without DES 46.2±4.7%).

Conclusions: Despite a longer length of hospital stay, CABG patients experience a greater post-procedural survival benefit compared to PCI patients. We have demonstrated this at 30 days, 90 days, 1 year, 3 years and 5 years following revascularisation. At present, CABG remains a superior revascularization modality to PCI in patients with poor LVF.

Biography

Shaneel Shah is nearing completion of his undergraduate medical degree at the University of Bristol. During his short time in the medical profession he has demonstrated his passion for cardiothoracic surgery on multiple occasions - most notably seen in his current position as president of the University of Bristol Cardiothoracic Surgery Society. He has confidently and successfully presented at national conferences and looks forward to a career in cardiothoracic surgery.

Notes:

Harmanjit Dev et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Risk factors and consequences of new onset atrial fibrillation in hospitalized patients

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There is a significant burden on the healthcare system implemented by new-onset atrial fibrillation (NOAF) and the extension in hospital stay lengths. In critically ill patients, for example, the incidence of NOAF ranges between 5-46%. The scoring systems currently at place, such as $CHADS_2$, CHA_2DS_2-VASc and HATCH, have their limitations and aren't able to accurately predict NOAF among various patient groups. Additionally, many hospitals are now being penalized if patients have extended hospital stay from preventable causes. We conducted a literature review to determine the various factors which predispose patients to NOAF. There is limited literature available that has evaluated NOAF in diverse groups of patients. Current literature reveals that post-operative patients are one of the subset of patients with an increased risk of NOAF. Multiple logistic regression analysis has shown that increasing age, renal dysfunction, pulmonary disease and systemic inflammation have also been associated with NOAF. There are various predictors that are not included together in any of the above-mentioned scoring systems such as COPD, ESRF, sepsis, CRP levels and diabetes mellitus to name a few. A retrospective observational study is currently underway at Townsville Hospital to determine risk factors shared amongst patients who developed NOAF. The aim is to discern these factors and develop a NOAF risk assessment tool to identify at-risk patients so that appropriate prophylaxis may be initiated. This will help in significantly decreasing the burden of NOAF on the healthcare system by preventing onset and decreasing both risk of complications and length of hospital stay.

Biography

Harmanjit Dev graduated with an MBBS from James Cook University in Townsville, Australia. She is currently undertaking her internship at Townsville Hospital in Queensland. She is passionate about research and is currently involved in research pertaining to general surgery and cardiology. She has previously had poster and oral presentations at the Indian Association of Cardiothoracic Surgery Conference and World Congress of Surgery held in Switzerland in 2017. She will be commencing her Master's Degree course in Surgery in September this year and hopes to enter surgical training in the near future.

Notes:

Nikhil Sabharwal et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Ventricular ectopic burden as a predictor for survival in subjects less than 65 years old

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[2]The Townsville Hospital, Australia

Premature ventricular complexes (PVCs) are widely observed in the general population and are commonly asymptomatic. Several studies report a poor prognosis in conjunction with underlying structural heart disease (SHD), however, there is a lack of data implicating their clinical significance in the absence of SHD. A review of literature was conducted to determine the risk factors predisposing to PVCs. Variables explored in the studies included: age, presence or absence of SHD, PVC duration/morphology, morbidity and mortality. Data was collected according to the inclusion (age <65, 8 year follow-up, 24-hour ambulatory monitoring) and exclusion criteria (presence of SHD). Literature review revealed that the presence of PVCs indicate an increased risk of cardiovascular events (e.g. heart failure) in individuals aged >65 years, and is further amplified by factors such as PVC duration and morphology. A PVC burden of as low as 10% may significantly increase risk of PVC-induced cardiomyopathy. The limitations of current literature include: (1) analysis of a 2-minute rhythm strip; (2) short follow-up periods; and (3) failing to account for underlying SHD in <65 years old. The prognostic value of frequent PVCs in subjects <65 years old without underlying SHD is yet to be explored. A retrospective observational study is being conducted at Townsville Hospital to further investigate whether presence of PVCs, in health individuals <65 years old, should be treated as a modifiable risk factor. This will shed light upon whether more aggressive risk factor management is to be implemented and potential of interventions such as PVC ablation.

Biography

Nikhil Sabharwal is currently a 5th year Medical student from James Cook University in Townsville, Australia. He has previously had poster and oral presentations at the Indian Association of Cardiothoracic Surgery Conference and World Congress of Surgery held in Switzerland in 2017. He is actively involved in teaching and mentoring of medical students at his university. He is very enthusiastic about research and aspires to pursue a career in academic surgery. His ongoing research work is entitled: "Women in Cardiac Surgery: An Update" and "Clinical Cardiology and Research: A perspective from Dr Eugene Braunwald".

Notes:

Danielle Fernandes Vileigas et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Different proteomic approaches identifies molecular networks underlying cardiac remodelation in western diet-induced obese rats

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[2]Bioscience Institute - São Paulo State University, Brazil
[3]University of Liverpool, UK

Obesity is a complex disease state that is often associated with pathologic changes in the heart, impairing both diastolic and systolic function. Previous studies has investigated potential contributors to this dysfunction, however, the adverse effects of obesity on cardiac function remain incompletely understood. The aim of this study is to identify the myocardial proteins that are differentially expressed between obese rats with cardiac dysfunction and healthy controls, using two different proteomic approaches. Male Wistar rats were distributed into two groups: control (n=13; standard diet) and obese (n=13; Western diet) fed for 41 weeks. The obesity was determined by adipose index. Cardiac function was evaluated by echocardiogram and isolated papillary muscle analysis. The proteomics was based on two-dimensional gel electrophoresis (2DE) followed by mass spectrometry identification (LC-MS/MS) and nano-liquid chromatography with tandem mass spectrometry (nanoLC-MS/MS) followed by label-free quantification. The differentially expressed proteins were subjected to enrichment analysis using the DAVID bioinformatic tool. Obese rats showed increased adiposity index ($p<0.001$). Echocardiographic assessment revealed decreased ejection fraction ($p=0.029$) in obese group. Papillary muscle evaluation indicated both diastolic and systolic dysfunction in baseline condition and in post-rest potentiation maneuver in obese group. A total of 87 myocardial proteins were identified as differentially expressed between control and obese groups, being 46 up- and 41 down-regulated, respectively, in the obese group. Proteins with increased expression are involved in several important biological processes including mitochondrial and peroxisomal fatty acid beta-oxidation, lipid homeostasis (transport and catabolism), oxidative stress pathways and regulation of cardiac muscle contraction by calcium ion signaling. Proteins associated with the cytoskeleton were also elevated. The proteins of lower expression were predominantly from pathways involved in defense against oxidative stress, as well as in glycolysis and amino acid metabolism, tricarboxylic acid cycle, respiratory electron transport chain, ATP metabolic process and cardiac contraction. In conclusion, these two complementary proteomic approaches revealed several molecular alterations in the myocardium of obese rats, enabling a better understanding of the molecular mechanisms involved in cardiac dysfunction, which may suggest some potential novel therapeutic targets for treatment and/or prevention of heart complications in obesity.

Biography

Danielle F Vileigas obtained her BSc Degree in Nutrition (2010) and MSc Degree in Pathophysiology in Internal Medicine (2015) from the São Paulo State University, Brazil respectively. Currently, she is pursuing her PhD student at the same university and has gained an International Fellowship from São Paulo Research Foundation to pursue a research internship during her PhD for 4 months at the Centre for Proteome Research of the University of Liverpool, UK. Her current research involves proteomic approaches to understanding the molecular mechanisms underlying cardiac dysfunction in obesity. She worked on several projects in obesity and cardiology fields.

Notes:

Asra Wahid et al., J Clin Exp Cardiolog 2018, Volume 9
DOI: 10.4172/2155-9880-C10-116

27th European Cardiology Conference

October 22-24, 2018 | Rome, Italy

Direct true lumen versus conventional cannulation for type-A aortic dissection

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The Aga Khan University, Pakistan

Type A Acute aortic dissection is a surgical emergency with high morbidity and mortality. The cannulation strategy plays a vital role in determining operative outcomes Several cannulation techniques including femoral, axillary, ascending aortic into false or true lumen under echo guidance and direct aortic true lumen cannulation under vision have been proposed to establish cardiopulmonary bypass. True lumen cannulation has been reported as an attractive and reliable method with lesser mortality and neurological complications. Our objective is to compare the outcomes between direct true lumen and conventional cannulation techniques for arterial access in patients with Type A Acute aortic dissection. Demographics, intraoperative and postoperative outcomes were retrospectively reviewed of patients with Type A acute aortic dissection over 10 years. Twenty patients equally distributed between the two groups underwent surgery for Type A acute aortic dissection from January 2007 - December 2017. Perioperative variables, clinical characteristics and overall post morbidity rate were comparable. Mortality was 1 (10%) vs. 3 (30%) ($p = 0.582$). Frequency of morbidity (57.1% vs 44.4%) was higher in conventional cannulation group, though, not statistically significant. Direct aortic true lumen cannulation is a safe and reasonable option for arterial access to establishing cardiopulmonary bypass due to a reduced mortality and morbidity trend compared to the other cannulation techniques. This strategy may be given preference over other strategies where dissection is extending into femoral and innominate arteries.

Biography

Asra Wahid is a third-year medical student at the Aga Khan University Hospital in Karachi, Pakistan. She scored honors in three disciplines: Anatomy, Pharmacology and Microbiology. She has been actively involved in research both as an organizational capacity and clinical research. She is also an avid member of the finance department of Falah Organization, a welfare organization run by students.

Notes: