Global Summit on

Heart Diseases and Therapeutics

October 20-21, 2016 Chicago, USA

Special Session

(Day 1)

Arnon Blum, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Global Summit on

Heart Diseases and Therapeutics

October 20-21, 2016 Chicago, USA

Arnon Blum

Bar-Ilan University, Israel

Personalized medicine in cardiovascular medicine using advanced stem cell technologies and linear array vascular ultra sound

Endothelial Function Measurement: It is considered the most accurate non-invasive procedure to detect and follow vascular reactivity. Endothelial function measurement can detect early atherosclerosis and pre-clinical coronary vascular disease, cerebral and peripheral vascular disease. Dozens of studies have shown that the worse the endothelial dysfunction the worse the clinical prognosis of patients with cardiovascular risk factors.

Endothelial Progenitor Stem Cells: These are grown in culture from the peripheral blood are presented as endothelial progenitor cells-colony forming units (EPC-CFU). There is an inverse correlation between EPC-CFUs number and cardiovascular risk factors. The higher the Framingham score the worse the ability to build colonies of endothelial progenitor stem cells, and the worse the prognosis.

Combining the Endothelial Function Assay with the EPC-CFU Assay: A positive correlation was found between endothelial function and the ability to create EPC-CFUs. Combining these 2 modalities (the clinical assay and the stem cells assay) will enable to have a better sensitivity and specificity for diagnosing coronary artery disease in a pre-clinical stage. Our combined approach does not replace the traditional risk factors' assessment; still we suggest a more individualized, patient oriented approach that will add to the present risk assessment. We suggest a "personalized medicine approach" in cardiovascular medicine using advanced ultra sound and stem cells' techniques.

Biography

Arnon Blum is a Professor of Medicine in Bar-Ilan University and has completed his Medical studies from the Israeli Institute of Technology (Technion), Internal Medicine (Hadassah, Jerusalem), Cardiology (Beilinson, Tel Aviv), and Vascular Medicine and Stem Cell Transplantation from the University of Miami, USA. He is the Director of the Department of Medicine at Baruch Padeh Poriya Hospital and Head of the Department of Medicine in the Faculty of Medicine in Bar Ilan University. He has published more than 175 papers in peer reviewed journals and is serving as an Editorial Board Member of 20 medical journals in Medicine and Cardiology, and is the Editor-in-Chief of 3 journals.

navablum@hotmail.com

Notes:

conferenceseries.com 767th Conference

Global Summit on

Heart Diseases and Therapeutics

October 20-21, 2016 Chicago, USA

Workshop

(Day 1)

Lívia Stocco Sanches Valentin, J Clin Exp Cardiology 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Lívia Stocco Sanches Valentin
University of São Paulo School of Medicine, Brazil

Neuropsychological assessment through MentalPlus digital game. The importance of this evaluation in heart disease and cardiac preoperative and postoperative for a good prognosis and possible cognitive rehabilitation

Background and Goal of Study: Cognitive dysfunction is a frequent adverse event in many clinical situations1. The tests commonly used for the diagnosis of cognitive dysfunction are time consuming and have variable sensitivity and specificity. Digital Games are not only just fun, are being used as tools for stimulating and improving the skills of neuropsychological functions2. Development and validation of a neuropsychological test of easy application as digital games can contribute to a better understanding of cognition functions specially for professionals as a psychologists, nurses, physicians and other professionals whose care of mental and emotional human health, studying the brain and their functions. MentalPlus® was created based on standardized psychological tests to assess cognitive functions. This study aims to validate the digital game MentalPlus® as a neuropsychological tool to assess of cognitive functions in a fun and practical way.

Materials and Methods: One hundred sixty three healthy volunteers, over 10 years old (mean 17 years), both genders (77 female; 86 male) received an invitation to participate in the study signing the free and informed consent. Validated neuropsychological tests were used to compare with MentalPlus® results. The Kappa Index was used for statistical analysis of exploratory factor to internal consistency of MentalPlus® digital game (α Cronbach). The analysis of interference from intervening variables was through the trials of chi-square, Fisher, Student-t, Mann-Whitney, ANOVA, and Kruskal-Wallis tests with significance level of $p < 0.05$.

Results: The Kappa index was used for replicability analysis and reproducibility of MentalPlus® results followed by the McNemar test to ensure even normal distribution and to assess the degree of agreement in the total scores A and B versions of the digital game and the adjustment of the internal measures in game corresponding to the spending-time, number and size ideal of stimulus in each stage of the game enabling the creation of 12 more new games themes with the same gameplay with intention to use it for cognitive training (Tab.1). The results obtained in the versions A and B for cognitive functions correspond to narrow ranges of values showing similarity between versions (Table 2). The results of standardized tests were compared with the results of the game to the same cognitive functions during the playing into phases (Tab.3). MentalPlus® when compared with validations and standardized neuropsychology tests show strong results in same functions. Developed to evaluate and stimulate neuropsychological functions, patented and registered in National Library Foundation by Law No. 9,610 / 98, under copyright No. 663,707, deposited in Clinicaltrials.gov: NCT02551952.

Conclusion: It can be concluded that the MentalPlus Digital Game is a valid and reliable instrument to measure the cognitive functions to attention, memory and executive. MentalPlus® identifies neuropsychological deficits, can be used by health professional, spends 25 minutes from its inception at the end.

Biography

Livia Valentin has completed her PhD from University of São Paulo School of Medicine- FMUSP and postdoctoral from Harvard Medical School; David Geffen School of Medicine at UCLA; Cleveland Clinic Lerner College of Medicine of Case Werstern University; University of Copenhagen; Utrecht University; Max Planck Institute and Karolinska Institute as a multicenter study. She is the Principal Investigator of the RCT Evaluation of POCD through the MentalPlus® digital game. She has published papers in anesthesia and neuropsychology journals and has been serving as an editorial board member of a indexed journal and reviewer of journal about anesthesiology and neuroscience.

lssv@usp.br

conferenceseries.com 767th Conference

Global Summit on

Heart Diseases and Therapeutics

October 20-21, 2016 Chicago, USA

Scientific Tracks & Abstracts

(Day 1)

Heart Diseases 2016

Heart Disease | Ischemic Heart Disease | Clinical Trials in Cardiology

Session Chair
William Cromwell
Lipoprotein & Metabolic Disorders Institute, USA

Session Introduction

Title: Use of particle number versus cholesterol measures to optimize management of LDL-related ASCVD risk
William Cromwell, Lipoprotein & Metabolic Disorders Institute, USA

Title: Is it possible to predict future cardiovascular events in patients without coronary artery disease demonstrated?
Pautasso Enrique José, Argentina

Title: Effects of the transcranial direct current stimulation on prevention of postoperative cognitive dysfunction after cardiac surgery
Lívia Stocco Sanches Valentin, University of São Paulo, Brazil

Title: The role of CaMKII in regulation of cardiac function in heart failure
Yanggan Wang, Wuhan University, China

Title: *Nourexal*™: A novel anti-inflammatory/antiapoptotic therapy against reperfusion injury
Salwa Ahmed Elgebaly, Nour Heart Institute, USA

William Cromwell, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Use of particle number versus cholesterol, measures to optimize management of LDL-related ASCVD risk

William Cromwell
Lipoprotein and Metabolic Disorders Institute, USA

Managing low-density lipoprotein (LDL) is an integral part of clinical practice. Recent guidelines have shifted from attaining discrete LDL goals (based on an individual's cardiovascular disease risk), to use of specific therapies shown to reduce atherosclerotic cardiovascular disease (ASCVD) events in randomized controlled trials. Following institution of outcome proven therapy, on-treatment LDL levels are advocated to judge adherence, individual response, and aid consideration of adjustments of therapy. What remains controversial is whether LDL-guided adjustments in treatment can lead to further reduction in ASCVD events. Historically, the cholesterol content of LDL particles (LDL-C) has been used to express LDL quantity. However, due to variability in the cholesterol carried in LDL particles, frequent disagreement (discordance) occurs between LDL-C and particle number measures of LDL quantity, including apolipoprotein B-100 (apo B) or nuclear magnetic resonance (NMR) LDL particle number (LDL-P). Epidemiologic and clinical intervention trials consistently demonstrate that ASCVD risk tracks with LDL particle number (apo B or NMR LDL-P), rather than LDL-C, when these measures are discordant. Furthermore, managed care claims data demonstrate significant additional reduction of ASCVD events is noted among high-risk patients attaining low NMR LDL-P (mean 860 nmol/L) versus statin treated subjects with low LDL-C (mean 79 mg/dL). Accordingly, many expert society recommendations and guidelines now advocate the use of LDL particle number (NMR LDL-P or apo B) to adjudicate individual response and aid adjustment in therapy to optimize individual therapy.

Biography

William Cromwell has received his MD degree from Louisiana State University School of Medicine in New Orleans, LA and completed his Post-graduation in Lipid Disorders from the Washington University School of Medicine Lipid Research Center in St. Louis, MO. He is Chief of the Lipoprotein and Metabolic Disorders Institute, Discipline Director for Cardiovascular Disease at Laboratory Corporation of America (LabCorp), and Adjunct Associate Professor at Wake Forest University School of Medicine, USA. He has published over 25 book chapters and papers in journals including Lancet, *Journal of the American College of Cardiology, American Journal of Cardiology, and Journal of Clinical Lipidology.*

wcromwell@gmail.com

Notes:

Pautasso Enrique José, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Is it possible to predict future cardiovascular events in patients without coronary artery disease demonstrated?

Pautasso Enrique José
Hospital Institute of Cardiology National Medicine Academy (Retired), Argentina

A lot of studies have been published that have demonstrated that the patients with a normal myocardial perfusion test with single positron emission tomography (SPECT) belong to the group of low coronary risk , since the incidence of cardiovascular events is less than 10 % at ten years. Endothelial dysfunction is the first alteration known that intervenes in the development of coronary artery disease and it can be evaluated by a perfusion test with SPECT and the cold pressor test (CPT). In a population of low coronary risk we could identify those patients most likely to suffer from cardiovascular events with the cold presser test. For this reason more than 1000 consecutive patients that had a normal exercise perfusion test with SPECT were admitted in a nuclear medicine centre. The cold pressor test was performed between the third and fifth day after the study SPECT. The cold pressor test was considered positive if a decreased uptake of the radionuclide was observed in the perfusion images obtained during the CPT, which were normal in the respective post-exercise images and negative if no changes were observed in the radiotracer uptake in any of the myocardial perfusion images obtained after the exercise test and the CPT. The average follow-up was 51 ±16 months having located 85.4% of the population. The events analyzed were: cardiac mortality, non-fatal myocardial infarction and coronary revascularization. In this population of patients without demonstrated ischemic heart disease, the prevalence of a positive cold pressor test was 37,5%.Trough out 119 month follow up we have observed event free survival of 95% and 83% in the group of a negative and positive cold presser test respectively. In our 10 years of experience we have observed the great utility of the cold pressor test, in a low coronary risk population because with this test we could identify a subgroup of patients with a higher likelihood of suffering from cardiovascular events. On the other hand for patients with a normal SPECT but inadequate exercise test, we suggest to complete the study with the cold pressor test in order to identify patients with intermediate coronary risk. Trough the cold pressor test we have also detected the probability of future cardiovascular even in diabetes patients.

Biography

Pautasso Enrique José graduated as a Physician from the University of Buenos Aires, Argentina in 1974. In December 1982, he became a Cardiologist and got this degree at the Salvador University in Buenos Aires, Argentina. From 1990 to 2001, he was Chief of the Nuclear Cardiology Service at the Hospital Instituto de Cardiología National Medicine Academy, Argentina. In December 2000, he was named Cardiology Consulter by the Medicine School of the province of Buenos Aires. In 2005, he was President of the Argentine Cardiology Society in the northern suburbs of the city. Finally the University of Buenos Aires granted him Medical Doctor in the year 2009. He has carried out more than 100 scientific researches which were published in national and international magazines. In addition, he has been awarded various science prizes. The last one was in 2011 for the best work on Cardiology; awarded by the National Medicine Academy. During the last 15 years he has worked on cardiovascular disease prevention by means of the Cold Pressor Test.

epautasso@hotmail.com

Notes:

Lívia Stocco Sanches Valentin, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Effects of the transcranial direct current stimulation on prevention of postoperative cognitive dysfunction after cardiac surgery

Lívia Stocco Sanches Valentin
University of São Paulo, Brazil

Introduction: Postoperative cognitive dysfunction (POCD) is a contrary event observed between 20 to 83%, especially in elderly and after cardiac surgery. Prevention and rehabilitation on cases of POCD may improve the quality of life. The neuromodulator effect of the noninvasive cerebral stimulation has been used in the treatment of brain injuries, depression, and also in the cognitive rehabilitation. The hypothesis is that the use of the transcranial direct current stimulation (tDCS) technique can decrease the occurrence of POCD and cognitively rehabilitate patients submitted to cardiac surgeries.

Aim: The objective of this study is to evaluate the tDCS effect over the occurrence of POCD in patients on cardiac surgeries.

Methods & Results: After approval from the Institutional Ethics Committee, 138 adults were included in the study after a cardiac surgery. Patients were randomly allocated in two groups, tDCS Group: Submitted to 2 daily sessions of cerebral stimulation, starting from the first day after surgery during 4 consecutive days, with each session having 20 minutes. They were given a direct current stimulus of 2 mA in the right anode and in the left cathode on the prefrontal right region. SHAM Group: The same equipment used in tDCS as simulated stimulus similar to the active one. They were underwent neuropsychological tests to evaluate memory, attention, and executive functions as well as data relative of surgery, cognitive evolution and quality of life in postoperative period. The neuropsychological test provided the moments of application, with mean and standard deviation (SD) and compared to results of normative tables with Z-score (±1.96). The data were expressed in means, medians, confidence intervals (CI-95%) and SD and were analyzed by generalized estimating equation (GEE), to comparison of the results between the two groups and $P<0.05$ was considered significant.

Biography

Lívia Stocco Sanches Valentin has completed her PhD from University of São Paulo School of Medicine-FMUSP and Post-doctoral studies from Harvard Medical School; David Geffen School of Medicine at UCLA; Cleveland Clinic Lerner College of Medicine of Case Western University; University of Copenhagen; Utrecht University; Max Planck Institute and Karolinska Institute as a multicenter study. She is the Principal Investigator of the RCT Evaluation of POCD through the MentalPlus® digital game. She has published papers in Anesthesia and Neuropsychology journals and has been serving as an Editorial Board Member of many journals and Reviewer of journal about Anesthesiology and Neuroscience.

lssv@usp.br

Notes:

Yanggan Wang, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

The role of CaMKII in regulation of cardiac function in heart failure

Yanggan Wang
Wuhan University, China

Objective: The excessive activation of calmodulin-dependent protein kinase II (CaMKII) plays a key role in heart failure (HF) development. As a result, CaMKII becomes a novel therapeutic target. Here, we studied alterations of systolic and diastolic function; β-adrenergic regulation and exercise tolerance in pressure overload HF mice after acute and 1 week chronic CaMKII inhibition.

Methods & Results: Pressure overload HF was induced by severe thoracic aortic banding (sTAB), while cardiac function was monitored by M-mode echocardiography. CaMKII inhibitor KN93 was given intraperitoneally to HF mice for one time (acute inhibition) and once a day for continuous 7 days (chronic inhibition), respectively. Acute and chronic CaMKII inhibition improved systolic function but the diastolic function was reduced, especially for the chronic inhibition, manifested by the increase in E/Em ratio and site of left atrium. We have tested the effects of CaMKII inhibition on adrenergic stimulation in HF mice by isoproterenol (ISO) injection or 10 min swimming before and after acute and chronic CaMKII inhibition, we found that chronic CaMKII inhibition significantly enhanced the positive inotropic effect of ISO or swimming with a recovery of β1-AR expression illustrated by Western blots. An interesting finding was that after acute CaMKII inhibition, the HF mice started sinking in water in several seconds of swimming.

Conclusion: Chronic inhibition of CaMKII improved systolic function, adrenergic regulation and exercise tolerance in HF mice. The diastolic function is impaired, which is more prominent for acute CaMKII inhibition.

Biography

Yanggan Wang is a Professor and the Director of Department of Cardiology, Zhongnan Hospital of Wuhan University, China. He has completed his MD and PhD from Tongji Medical University, China and Post-doctoral training from Germany Heart Center of Technical University of Munich, Germany and Emory University, USA. He has published 40 peer-reviewed papers in highly impacted journals and has been serving as an Editorial Board Member of 3 prestigious medical journals. He has been awarded NIH R01 and R21 grants in USA; and the General Project Award and the Key Project Award from the National Natural Science Foundation in China.

wb000813@whu.edu.cn

Notes:

Salwa Ahmed Elgebaly, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Nourexal™: A Novel Anti-inflammatory / Antiapoptotic Therapy Against Reperfusion Injury

Salwa Ahmed Elgebaly
Nour Heart Institute, USA

Myocardial tissue has an extreme sensitivity to ischemia and hypoperfusion. The current available options to address this problem are all directed at restoring tissue perfusion in the myocardium. However, the main mechanism of myocardial ischemia that leads to reduction in cardiac function and irreversible injury is through the exhaustion of the high-energy adenosine triphosphate (ATP). Depletion of ATP during ischemia is one of the major factors that accelerate the apoptotic process of healthy myocardial tissue, leading to tissue progression to necrosis and heart failure.

Our research has demonstrated that reduction of ATP during ischemia also resulted in the rapid release (within 5 minutes) of the potent inflammatory mediator Nourin by ischemic myocardial tissue and coronary arteries. The release of Nourin was associated with early cardiac inflammation characterized by large influx of neutrophils. Our studies also indicated that Nourin purified from human ischemic hearts, is an 'early inflammatory signal' which stimulates leukocyte chemotaxis, adhesion and activation to release high levels of chemokines, cytokines, adhesion molecules and digestive enzymes. Specifically, Nourin stimulates human monocytes to release high levels of tumor necrosis factor-α (TNF-α), which is a major contributor of myocardial apoptosis.

For early reperfusion injury, the first few minutes of reperfusion after ischemic infarct constitute a critical phase that leads to impaired microcirculations and the 'no reflow' phenomenon. Inflammation is central to microcirculation obstruction (MVO) in early reperfusion and also in late reperfusion injury. Since both inflammation and ATP depletion play a key role in MVO and infarct size, we tested the cardioprotective benefits of our patented *Nourexal™ therapy* in a number of animal models (dogs, rats and rabbits) of ischemia/reperfusion, including: acute myocardial infarction (AMI), global warm cardiac arrest, cardiopulmonary bypass for coronary revascularization and heart transplantation models (prolonged heart preservation and nonheartbeating donor hearts).

We have demonstrated that administrating *Nourexal™* (Cyclocreatine Phosphate - CCrP) minutes before ischemia (a) preserved high levels of ATP in ischemic myocardium; (b) reduced myocardial cell injury, acidosis and edema; (c) reduced Nourin formation in the myocardium and its blood levels; (d) reduced post-ischemic cardiac inflammation and apoptosis; and (e) restored immediate strong cardiac contractibility during reperfusion without arrhythmia.

Clinical application is where myocardial ischemia is predictable and pretreatment of patients with *Nourexal™* would improve the patients' outcome and quality of life. These include patients undergoing cardiopulmonary bypass for coronary revascularization, heart transplantation and AMI patients undergoing angioplasty procedures / Percutaneous Coronary Intervention (PCI).

For AMI patients, administering *Nourexal™* during myocardial infarction and reperfusion will likely (a) protect cardiomyocytes from energy depletion and early inflammation; (b) protect the adequacy of microcirculations; (c) increase the amount of salvaged myocardium; and (d) reduce the progression of the ischemic myocardium to necrosis during the critical first 4 to 6 hours of reperfusion. Furthermore, targeting the early inflammatory mediator Nourin will likely produce the right balance between reducing the early harmful effect of inflammation without affecting its beneficial healing and scar formation.

In summary, we believe that this novel *Nourexal™ therapy* will provide heart protection against ischemic and reperfusion injury and it will be particularly critical for AMI patients with long transport times to the hospital and for patients who cannot get timely pharmacologic or mechanical revascularization. This early protection will likely reduce the incidence of chronic heart failure and improve the patients' outcome and quality of life.

Biography

Dr. Salwa Elgebaly graduated from the University of Alexandria Faculty of Pharmacy and holds a Master's Degree from the University of Wisconsin Faculty of Medicine in Madison, Wisconsin; and a PhD from the University of North Carolina, Faculty of Pharmacy at Chapel Hill, North Carolina. She is a former Associate Professor at the University of Connecticut School of Medicine and she is currently the Executive Director of Nour Heart Institute (subsidiary of Nour Heart, Inc.). Dr. Elgebaly is the Inventor of 9 Patents Issued by the U.S. Patent Office. Dr. Elgebaly identified and patented the potent inflammatory mediator, Nourin as a key 'initial signal' in early reperfusion injury. Her research targets the development of new therapy for patients with Ischemic Heart Diseases (IHD). She is currently developing a new combined therapy of the anti-inflammatory Nourexin™ (Nourin specific competitive antagonist) and the anti-apoptotic *Nourexal*™ (ATP preservation during ischemia) to protect AMI patients from reperfusion injury.

selgebaly@nourheart.com

conferenceseries.com 767th Conference

Global Summit on

Heart Diseases and Therapeutics

October 20-21, 2016 Chicago, USA

Special Session

(Day 2)

Justin Nabity, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Global Summit on

Heart Diseases and Therapeutics

October 20-21, 2016 Chicago, USA

Justin Nabity

Physician Advisors, LLC, USA

How to plan for the end in the beginning

Only 28% of physicians are very confident about their financial decisions. Additionally, over half of physicians are concerned about having enough money to retire. Financial preparedness is not just about investing in the right funds; it's about finding the right job and negotiating well. It's about tackling debt aggressively, including student loans, while not neglecting retirement planning. For residents and fellows, it's about creatively and purposefully putting a limited paycheck to work instead of waiting until finally finishing training. It's also about being prepared for job interviews and protecting a physician's potential with the right coverage. According to the 2015 MGMA compensation report, the median annual earning potential of a cardiologist is *$476,376 and an interventionist is *$566,370. These earning potentials illustrate the compelling reason why when planning for retirement; proper diversification goes far beyond having an investment allocation spread out among various asset classes. A truly diversified investment strategy also takes into consideration the impact of taxes both today and when retirement is reached. A diversified investment strategy provides physicians the ability to minimize tax liability in order to optimize the tax efficiency of their portfolio both today and in retirement years. Traditionally, individuals rely solely on their 401(k), IRAs or other tax-deferred vehicles for savings. However, this one-dimensional savings strategy provides little to no flexibility when an individual reaches retirement. Diversification involves spreading investments among tax-deferred, tax-favored and taxable accounts during a physician's working years so they can plan to optimize their tax situation in retirement. Whether discussing contract negotiation, interviewing, debt management or retirement planning, the remedy to this concerning statistic is to universally "plan for the end in the beginning."

Biography

Justin Nabity has been a Financial and Career Development Advisor to physicians since 2005. He is from two families of physicians and financial planners with over 200 years of collective medical practice and financial experience. As a result, Physician Advisors solely caters to the needs of physicians. He has been a guest speaker to nearly 200 institutions and associations. He is a Board Member of the Entrepreneurs Organization (EO), a Board Candidate of the National Association of Insurance and Financial Advisors (NAIFA), listed on 2014 Best Financial Advisers for Medical Economics and is a member of the Mayo Fellowship Association (MFA). He has authored dozens of lectures on contract review, financial planning, disability insurance, physician job search, debt management, retirement planning, and wealth planning.

justinnabity@physicianadvisorsllc.com

Notes:

conferenceseries.com 767th Conference

Global Summit on

Heart Diseases and Therapeutics

October 20-21, 2016 Chicago, USA

Scientific Tracks & Abstracts

(Day 2)

Clinical Trials in Cardiology | Heart Failure and Cardiomyopathies

Session Chair
Lívia Stocco Sanches Valentin
University of São Paulo, Brazil

Session Introduction

Title: **Patient-specific MRI-based active contraction and relaxation right ventricle models with different zero-load diastole and systole geometries for better stress and strain calculations**
Dalin Tang, Worcester Polytechnic Institute, USA

Title: **Cognitive dysfunction rehabilitation using MentalPlus® digital game- A possible future tool to cognitive rehabilitation in POCD**
Lívia Stocco Sanches Valentin, University of São Paulo, Brazil

Dalin Tang et al., J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Patient-specific MRI-based active contraction and relaxation right ventricle models with different zero-load diastole and systole geometries for better stress and strain calculations

Dalin Tang[1, 2], Pedro J del Nido[3], Chun Yang[4], Heng Zuo[2], Xueying Huang[2, 5], Rahul H Rathod[3], Alexander Tang[3], Zheyang Wu[2], Kristen L Billiar[2] and **Tal Geva[5]**
[1]Southeast University, China
[2]Worcester Polytechnic Institute, USA
[3]Harvard Medical School, USA
[4]China Information Tech. Designing and Consulting Institute Co., Ltd., China
[5]Xiamen University, China

Background: Accurate assessment of ventricular stress and strain is critical for cardiovascular investigations. From a mechanical point of view, zero-stress ventricular geometry information is required for correct stress/strain calculations. Sarcomere shortening in active contraction leads to change of ventricular zero-stress configurations during the cardiac cycle. A new model using different zero-load geometries (diastole and systole) was introduced to provide more accurate diastolic and systolic stress/strain calculations.

Methods & Results: Cardiac magnetic resonance (CMR) data were obtained from 16 patients with repaired tetralogy of fallot (TOF) prior to pulmonary valve replacement (8 male and mean age 34.5 years). CMR-based patient-specific computational right and left ventricular (RV and LV) model using one zero-load geometry (old model) and two zero-load geometries (no-load diastole and systole geometries, new model) were constructed and RV mechanical stress and strain were obtained for analysis. Based on the average values from the 16 patients, peak-systolic stress from the new model was 28% higher than that from the old model. Peak-systolic strain from the new model was 40% higher than that from the old model. The new model also provided end-systole and end-diastole stress and strain values that were not available from the old model.

Conclusion: The new 2-geometry model may be able to provide more accurate ventricular stress and strain calculations by using different zero-load geometries for the diastole and systole phases, respectively. The new model can be used in patient's studies to further examine its impact on risk stratification and planning surgical interventions.

Biography

Dalin Tang has received his PhD from UW-Madison in 1988. He is a Professor of Mathematics and Biomedical Engineering at WPI (since 1988). He was named as John E Sinclair Professor of Mathematics in 2003-2006. He received WPI Trustee's Research Award, the highest honor for faculty research at WPI. He was elected Fellow of AHA in 2011, Fellow of ASME in 2016. His research interest is Image-based Modeling for Ventricles and Vulnerable Plaques. He has received 29 grants including 3 NIH R01 grants and one NSF/NIGMS grant ($1.8M). He has served on various NSF, NIH, and AHA panels.

dtang@WPI.EDU

Notes:

Lívia Stocco Sanches Valentin, J Clin Exp Cardiolog 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.050

Cognitive dysfunction rehabilitation using MentalPlus® digital game: A possible future tool to cognitive rehabilitation in POCD

Lívia Stocco Sanches Valentin
University of São Paulo, Brazil

Background & Objective: POCD remains a common postoperative complication associated with higher morbidity and mortality, especially in elderly patients and cardiac surgery. Research on digital games may not relate directly to postoperative cognitive dysfunction, but it can illuminate the possibilities of games related cognitive improvement in people with cognitive dysfunction. MentalPlus® is a digital game developed first to evaluate the cognitive dysfunction, in special POCD. This study investigated the association between the use of MentalPlus® game series of sessions in cardiac surgery patients with cognitive dysfunction and their results after them. Based on these findings, the scientific community could have interest to develop a major project to evaluate the impact of its usefulness for POCD rehabilitation.

Materials & Methods: A total of 17 volunteer's cardiac surgery patients, mean age of 64 years, with diagnosed cognitive dysfunction based on usual neuropsychological test battery went through 10 MentalPlus® game sessions. The battery was composed of: telephone interview cognitive status (TICS), verbal learning test (VLT), color reading effect (STROOP) and trail making test (TMT A/B). MentalPlus® game sessions focused on attention, memory and executive functions. Patient's cognitive functions were evaluated in two moments: Before the first and after the last session use. Each session consisted of 25 minutes each play per day. The primary outcome was an evaluation of each battery test score before and after 10 MentalPlus® game sessions.

Results: Due to the small sample size, we present only descriptive data. The results disclosed improvement in diverse neuropsychological tests applied after ten MentalPlus® game sessions rehabilitation.

Conclusion: These positive pilot results in cognitive rehabilitation using MentalPlus® game can suggest a possibility for future use in POCD rehabilitation.

Biography

Lívia Stocco Sanches Valentin has completed her PhD from University of São Paulo School of Medicine-FMUSP and Post-doctoral studies from Harvard Medical School; David Geffen School of Medicine at UCLA; Cleveland Clinic Lerner College of Medicine of Case Western University; University of Copenhagen; Utrecht University; Max Planck Institute and Karolinska Institute as a multicenter study. She is the Principal Investigator of the RCT Evaluation of POCD through the MentalPlus® digital game. She has published papers in Anesthesia and Neuropsychology journals and has been serving as an Editorial Board Member of many journals and Reviewer of journal about Anesthesiology and Neuroscience.

lssv@usp.br

Notes:

Meet Inspiring Speakers and Experts at our 3000+ Global Events with 600+ Conferences, 1200+ Symposiums and 1200+ Workshops on Medical, Pharma, Engineering Science, Technology, Business and 700+ Open Access Journals

Conference Series LLC unique destination for

Conferences | Publishing | Global Networking | Research | Business

Exhibitions | Collaborations | Careers | International Memberships | Advertisements & Promotions

Conferences By Continent

USA & Americas

USA | Brazil | Canada | Mexico

Asia-Pacific

Australia | China | India | Japan | Malaysia | New Zealand | Philippines | Singapore | South Korea

Europe & Middle East

Austria | Denmark | Finland | France | Germany | Italy | Netherlands | Norway | Poland | South Africa | Spain | Switzerland | Turkey | UAE | UK | Ukraine

Medical & Clinical Journals and Conferences

- Alternative Healthcare
- Cardiology
- Dentistry
- Dermatology
- Diabetes & Endocrinology
- Gastroenterology
- Healthcare Management
- Hematology
- Infectious Diseases
- Medical Ethics
- Health Policies
- Neuroscience
- Nephrology
- Nursing
- Obesity
- Oncology & Cancer
- Ophthalmology
- Palliativecare
- Pathology
- Pediatrics
- Physical Therapy Rehabilitation
- Psychiatry
- Pulmonology
- Radiology
- Surgery
- Vaccines
- Reproductive Medicine &
- Women Healthcare

Journals and Conferences by Subject

- Agri, Food & Aqua
- Biochemistry
- Business & Management
- Chemical Engineering
- Chemistry
- EEE & Engineering
- Environmental Science
- Genetics & Molecular Biology
- Geology & Earth Science
- Immunology
- Materials Science
- Microbiology
- Nanotechnology
- Nutrition
- Petroleum
- Pharma Marketing & Industry
- Pharmaceutical Sciences
- Physics
- Veterinary

Bookmark your dates

2nd Global Summit on

Heart Diseases and Therapeutics

September 18-19, 2017 Toronto, Canada

e-mail: ischemicheartdisease@conferenceseries.net; heartdiseases2016@gmail.com

Website: heartdiseases.conferenceseries.com

Conference Series LLC
2360 Corporate Circle, Suite 400
Henderson, NV 89074-7722, USA
Ph: +1-888-843-8169
Fax: +1-650-618-1417
america@conferenceseries.com

Conference Series Ltd.
Traian Str., No.61, Constanta 900720,
Romania, Tel: 0805-080048
Heathrow Stockley Park Lakeside
House, 1 Furzeground Way, Heathrow,
UB11 1BD, United Kingdom
europe@conferenceseries.com

OMICS International
6th Floor, North Block, Divyasree
Building, Raidurg Hyderabad,
Telangana, INDIA-500032
Tel: +91-40-33432300
asiapacific@conferenceseries.com

Toll free
USA & Canada: +1-800-216-6499
Australia: +1-800-651-097
Europe: 0805-080048