

18-19

SEPT, 2023

VALENCIA
SPAIN

4th Edition of

CARDIOLOGY WORLD CONFERENCE

Venue:

Olympia Hotel, Events & Spa, Carrer Mestre Serrano,
5, 46120 Alboraiia, Valencia, Spain

18-19 **SEPT**

**BOOK OF
ABSTRACTS**

4TH EDITION OF
**CARDIOLOGY
WORLD CONFERENCE**

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*Thank You
All...*

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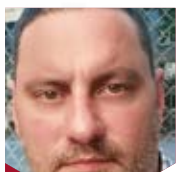


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Speakers



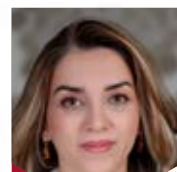
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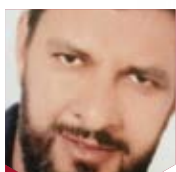
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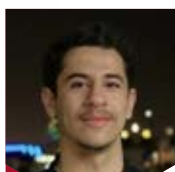
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Welcome Message

Dear Esteemed Participants of Cardio 2023,

I extend my warmest greetings to all attendees of the 4th Edition of the Cardiology World Conference. It is an honor to be part of this exceptional event and to have the opportunity to share insights and engage in discussions that shape the landscape of cardiology.

Through the diverse presentations, discussions, and interactions that Cardio 2023 promises, we have the opportunity to collectively shape the future of cardiology. Our shared commitment to pushing boundaries, challenging existing paradigms, and embracing the latest advancements is what makes this conference truly remarkable

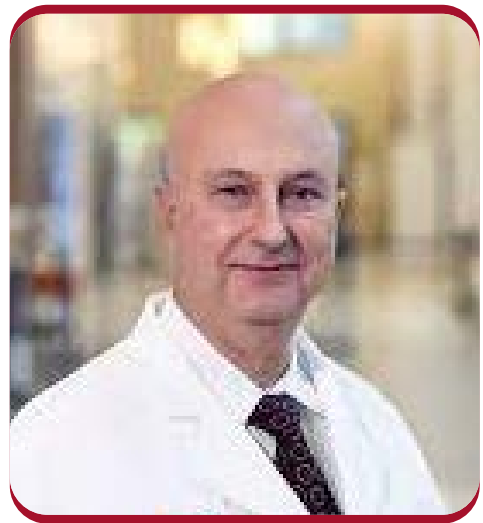
I look forward to sharing my insights with you and engaging in fruitful discussions that contribute to our collective understanding of best practices in cardiology. Together, we can explore innovative approaches and challenge established norms to enhance patient outcomes and drive advancements in our field.

Thank you for being an integral part of Cardio 2023. I am eager to embark on this enlightening journey with all of you.



Yochai Birnbaum

Baylor College of Medicine,
United States



Welcome Message

It is my honor to be invited to give one of the keynote addresses to the Cardio 2023 Cardiology World Conference in Valencia, Spain. This an exciting and diverse program. One of the advantages of this hybrid format is to allow the dissemination of a broad spectrum of cardiology information to practitioners throughout the world at a time and format that works for them. It also provides a stage for younger investigators, who might not have such an opportunity to discuss there work through traditional large convention-like scientific sessions. Not all topics will be relevant to all attendees, but I am confident there is enough interesting and new information that each attendee will find value in the sessions. I hope you will attend.



Timothy F Christian

Albert Einstein College of Medicine,
United States



Welcome Message

Dear participants of the 4th Edition of Cardiology World Conference.

Cardiovascular disease continues to lead the way in complications and deaths among adults around the world. As clinical trial data accumulate, international standards for patient management are periodically updated. Primary and secondary prevention continues to be a priority for improving the quality and duration of patients with cardiovascular disease. In the era of a pandemic, cardiovascular diseases have not lost their relevance. In recent years, high technologies and telemedicine in cardiology have been developing rapidly.

The World Conference on Cardiology is a good platform for specialists to exchange experience and gain new knowledge. I call on my colleagues to actively participate in the work of the World Conference on Cardiology 2023 and wish you success.



Mekhman N Mamedov

National Medical Research Center for Therapy and Preventive Medicine of the Ministry of Health of Russia, Russia





ABOUT MAGNUS GROUP

Magnus Group (MG) is initiated to meet a need and to pursue collective goals of the scientific community specifically focusing in the field of Sciences, Engineering and technology to endorse exchanging of the ideas & knowledge which facilitate the collaboration between the scientists, academicians and researchers of same field or interdisciplinary research. Magnus Group is proficient in organizing conferences, meetings, seminars and workshops with the ingenious and peerless speakers throughout the world providing you and your organization with broad range of networking opportunities to globalize your research and create your own identity. Our conferences and workshops can be well titled as 'ocean of knowledge' where you can sail your boat and pick the pearls, leading the way for innovative research and strategies empowering the strength by overwhelming the complications associated with in the respective fields.

Participation from 90 different countries and 1090 different Universities have contributed to the success of our conferences. Our first International Conference was organized on Oncology and Radiology (ICOR) in Dubai, UAE. Our conferences usually run for 2-3 days completely covering Keynote & Oral sessions along with workshops and poster presentations. Our organization runs promptly with dedicated and proficient employees' managing different conferences throughout the world, without compromising service and quality.



ABOUT CARDIO 2023

Magnus Group is ecstatic to invite one and all to its well-established event “4th Edition of Cardiology World Conference (Cardio 2023)” which is going to be held virtually during September 18-19, 2023. The congress will revolve around the theme “Revealing Innovations in Cardiology for a Healthier Heart.”

The two-day worldwide summit will elucidate the recent trends and advancements in the field of cardiology. We cordially invite eminent researchers, cardiologists, cardiac and cardiothoracic surgeons, healthcare professionals, students from medical schools, professors, nurses, scientists and business professionals to discuss Heart Diseases, Clinical Cardiology, Nuclear Cardiology, Diabetes and the Heart, Sports Cardiology, Cardiac Surgery, Cardiac Nursing, and other topics under a solitary rooftop for a brief but intense period of time. It will be an international meeting featuring a selection of high-quality plenary talks, intriguing keynote sessions, brainstorming panel discussions, informative oral and e-poster sessions as well as a forum for direct contact and knowledge exchange between delegates from academic institutions, hospitals, and industry.

18-19 **SEPT**

DAY 01

KEYNOTE FORUM

4TH EDITION OF
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Should we continue to prescribe aspirin for patients with coronary artery disease?

For years aspirin was considered an essential part of the treatment of patients with or at risk of coronary artery disease. However, more recent studies have shown that aspirin, even at low dose, does not improve outcomes when administered for primary prevention and is associated with increased risk of bleeding. Studies are now showing that the duration of dual anti-platelet inhibition with aspirin + P2Y12 inhibitors can be safely shortened after successful coronary stent implantation. Moreover, several studies suggested that a regimen of early dropping aspirin instead of the P2Y12 inhibitor is safer. Yet, aspirin is still considered essential for patients with acute coronary syndromes, especially ST elevation myocardial infarction. However, the data leading to such strong recommendation has never been strong. Moreover, it could be that high-dose chewable or injected aspirin could block the protective effects of medications and ischemic conditioning. Clinical trials should be conducted to compare outcomes of patients with ST elevation myocardial infarction with and without aspirin loading before primary percutaneous coronary interventions.

Audience Take Away Notes

- Learn the data that lead to the use of aspirin for various indications in coronary artery disease
- Encourage physicians not to use aspirin for primary prevention
- Encourage to use P2Y12 inhibitors instead of aspirin after coronary stent implantation
- Encourage clinical studies to question the role of aspirin in patients with acute coronary syndromes with the current background therapies



Yochai Birnbaum

The Section of Cardiology,
Department of Medicine, Baylor
College of Medicine, Houston,
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Biography

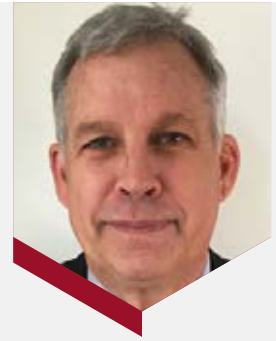
Yochai Birnbaum is currently working as a Professor of Medicine and the John S. Dunn Chair in Cardiology Research and Education at the Section of Cardiology at Baylor College of Medicine. He has completed his graduation from Hadassah Medical School at the Hebrew University, Jerusalem, Israel. He has completed his Residency in Internal Medicine at Kaplan Medical Center, Rehovot, Israel and his Cardiology Fellowship at Rabin Medical Center, Petah-Tiqva, Israel. He has also completed a Research Fellowship in Cardiology at Good Samaritan Hospital and the University of Southern California, Los Angeles, California and Research Fellowship in Echocardiography at Cedars- Sinai Medical Center, Los Angeles, California.

Conditional probability utilization for the analysis of noninvasive cardiac testing

The use of multiple noninvasive tests in a patient for a specific question in cardiology is becoming more common. While it is expected that each new piece of test information will align, the reality is that each test carries strengths and weaknesses that generate a profile of accuracy and associated false positive and false negative results. When two non-gold-standard tests produce non-concordant results, it can be difficult to chart a clinical course. Clinical guidelines for cardiac imaging rely heavily on conditional probability in the form of pre-test clinical risk assessment to maximize the incremental value of the test result. That risk classification is often the main determinant of appropriateness. Bayesian analysis of conditional probability allows the distillation of multiple pieces of information into a single probability of the presence or absence of disease. Probability becomes the common language linking the information. Three noninvasive tests that generate multiple data outcome points will be examined: coronary CT and CT fractional flow reserve, Exercise ECG and SPECT myocardial perfusion, and positron emission tomography with visual analysis and quantitation of absolute myocardial blood flow. Conditional probability will be used to incorporate all of the variables generated by each of these modalities that produce measurable results into a single probability of coronary artery disease. In this manner, all of the prior information on a single patient is accounted for in the final test interpretation.

Audience Take Away Notes

- Attendees will come to understand the principles of conditional probability
- Apply conditional probability principles to their clinical practice
- Understand how conditional probability can be used to provide synergism with heterogeneous test results
- Attendees should be able to better synthesize multiple pieces of clinical data for a single patient and establish a post-test probability of the disease in question in a methodical manner rather than guessing



Timothy F Christian

Div. of Cardiology, Jacobi
Medical Center, Albert Einstein
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United States of America

Biography

Dr. Christian received his MD degree from Albany Medical College and MPA from Harvard University. He completed his fellowship in cardiology at the Mayo Clinic and was a faculty member in the cardiology division for a number of years, achieving the rank of Professor of Medicine. His work has been centered on noninvasive cardiac imaging with expertise in cardiac MRI, cardiac CT, and nuclear cardiology. Research focuses have included acute imaging for chest pain, animal models of absolute myocardial blood flow by MRI and CT, and statistical methodologies for the application of imaging to clinical questions. He has over 100 peer-reviewed publications.

18-19 **SEPT**

DAY 01

SPEAKERS

4TH EDITION OF

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**D Yelamanchili¹, B K Gillard^{1,2}, A M Gotto^{1,2}, H J Pownall^{1,2},
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Normalizing effects of bacterial serum opacity factor on plasma lipids, tissues, and atherosclerosis

Although plasma HDL-C levels negatively correlate with Atherosclerotic Cardiovascular Disease (ACVD), attempts to reduce ACVD risk by raising plasma HDL have disappointed. Thus, hypotheses about salutary HDL effects have shifted from higher-is-better to function-is-more-important. The SRB1-/- mouse is an extreme model of HDL dysfunctionality; compared to WT mice, SRB1-/- mice have higher plasma HDL levels and an HDL surface that is Free Cholesterol (FC)-rich (60 vs. 15 mol%). Superposition of high plasma HDL levels and a high mol% FC in SRB1-/- mice is expected to increase HDL-FC bioavailability that contributes to whole-body FC-toxicity and the observed metabolic abnormalities —impaired red blood cells and platelets and increased atherosusceptibility, despite having high plasma HDL-C levels; moreover, female SRB1-/- mice are infertile. Dietary probucol, an HDL-lowering drug, partially reverses infertility in SRB1-/- mice. The mechanisms underlying ovaritoxicity are unknown and interventions that fully reverse this state have not been identified. We have previously shown that bacterial protein, Serum Opacity Factor (SOF), which acts on HDL and lowers cholesterol in WT mice by ~43% in 3 hours, normalized HDL and rescued infertility in SRB1-/- female mice. SOF catalyzes the disproportionation of HDL into three products: a Cholesteryl Ester-Rich Micro Emulsion (CERM) with abundant apo E, small neo-HDL, and lipid-free apo AI. Decrease in plasma cholesterol in SOF treated mice is attributed to diverting the CERM particle to hepatic LDL Receptor. We hypothesized that SOF treatment in SRB1-/- mice would also rescue the dysfunctional phenotype in erythrocytes and lead to atheroprevention in high-fat fed mice. AAVSOF was used to constitutively express SOF in mice for these studies. Erythrocytes from SRB1-/- mice treated with SOF had significantly fewer reticulocytes and abnormal cells compared to non-treated mice. There was no significant difference in the total average plaque area of the treated mice vs. controls. However, when grouped by gender, males had less plaque burden than female mice in the atheroprevention study.

Biography

Dr. Corina Rosales received her undergraduate degree at Michigan State University. She continued her graduate studies in Molecular Pathology at the University of Texas- Houston where she earned her PhD in 2007. She joined the lab of Henry J. Pownall at Baylor College of Medicine as a postdoctoral fellow. She advanced through her career stages under Dr. Pownall's mentorship and is now an Assistant Professor at the Houston Methodist Research Institute. Dr. Rosales' research focuses on metabolism of lipids and lipoproteins.

**Syeda Anum Zahra^{1,2*}, Georgios Karagiannis¹**

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Screening for causes of secondary hypertension on hospital admission

Introduction: Although majority of patients have essential hypertension, secondary hypertension can also cause significant cardiovascular events. Secondary hypertension is defined as hypertension due to an identifiable cause and has a prevalence of 5-10%. European Society of Cardiology (ESC) have clear guidelines on screening for causes of secondary hypertension.¹ However, many patients presenting with high blood pressure are not screened, based on the ESC screening criteria, for secondary causes of hypertension as part of their initial assessment on hospital admission.² There is limited evidence in the literature for the impact of screening for secondary causes of hypertension on patient outcomes during hospital admission. We aimed to investigate the effect of ESC guideline-based interventions on screening for secondary hypertension and the impact on outcomes for patients in hospital.

Methods: We looked at the hospital data of patients between January 2023- May 2023 with a presenting symptom of hypertension in a district general hospital in London. We identified that several patients who were eligible for screening based on the ESC screening guidelines were not being screened for secondary. We collected data in two cycles, after each intervention. The first intervention to improve screening on admission for secondary hypertension was to organise a teaching session for the Accident and Emergency department (A&E) and the Acute Medical Unit (AMU); this was delivered in early March, data was collected pre and post the intervention between March 2023 to mid- April 2023. In late April 2023, we introduced the second intervention which was a poster with ESC screening criteria as well as referral pathway for admitting clinicians to refer to when assessing patients (See Figure 1). The poster was presented and placed in the doctor's office in A&E and AMU, data was collected pre and post the intervention between late April 2023 to late-May 2023. Data collected was quantitative. Significance was detected by a paired t-test for each intervention, $p < 0.05$.

Results: We found that between 1st January to 28th February 2023, 18% patients presenting with hypertension were eligible for screening based on ESC guidelines, out of which, 15% were screened (Figure 2). Most patients had a screening indication of acute worsening hypertension with previously documented chronically stable normotension. Post the teaching session, there was an increase in patients being screened for secondary hypertension (18 % vs 19%, pre-teaching vs post-teaching, $p = 0.07$) (See figure 3). After our second intervention, we found a statistically significant improvement in the number of patients screened for secondary hypertension (19% vs 27%, pre-poster presentation vs post-poster presentation, $p = 0.008$) (figure 4). On follow up of the patients who were screened early in admission, we found that it led to initiation of early management, better control of their hypertension and medically improved outcomes.

Conclusion: Screening for secondary hypertension is vital for improving outcomes for patients in hospital as it allows early initiation of management. Raising awareness of the screening criteria by local hospital-based interventions is key to identifying patients with secondary hypertension, allowing early management and control of the underlying condition. long term benefits of screening could prove to be more cost effective as patient's will be less likely to present to hospital with adverse consequences of the causes of secondary hypertension such as end organ damage, stroke and sudden cardiac death.

Figure 1: Poster for A&E and AMU doctor's office

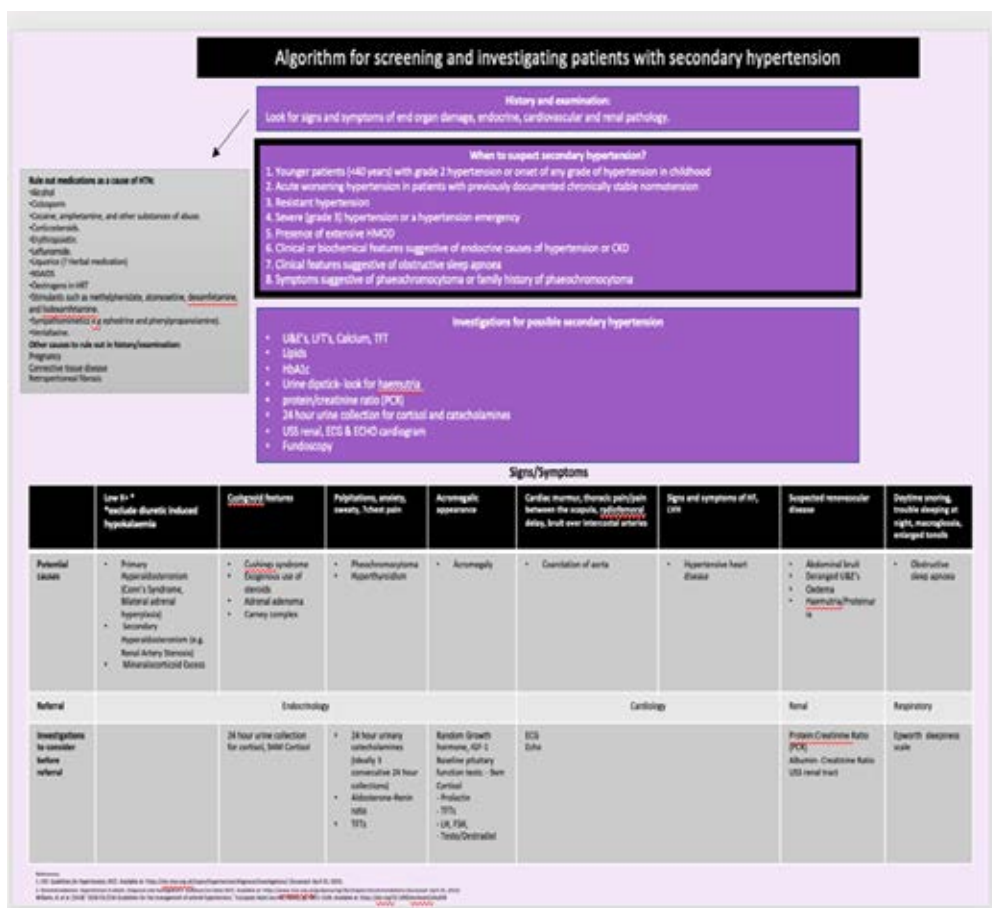


Figure 2: Shows proportion of patients eligible for screening and the proportion of patients screened.

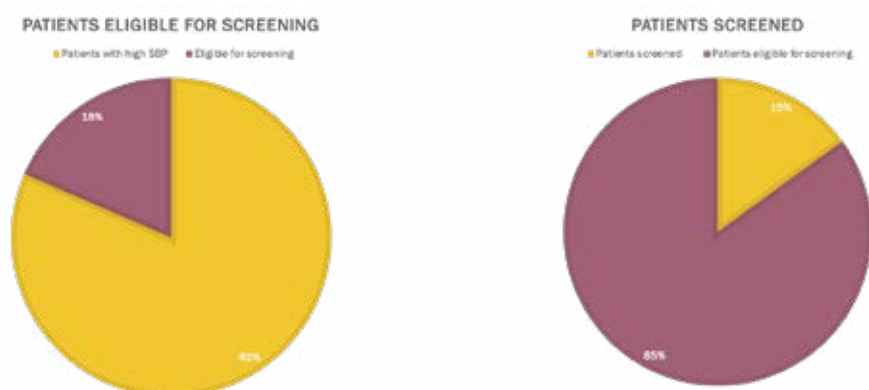


Figure 3: Proportion of patients screened post teaching session

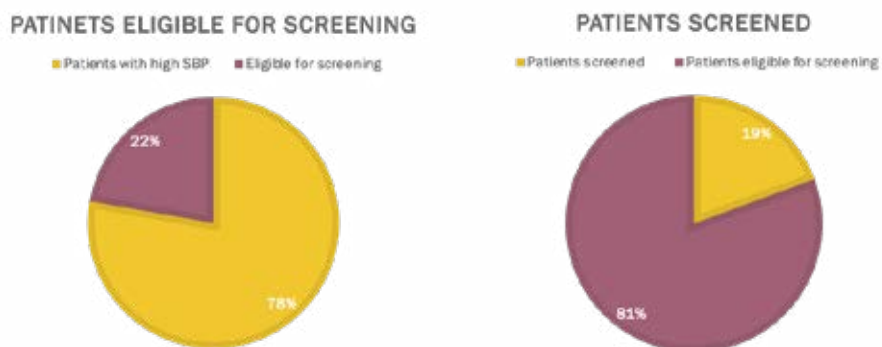
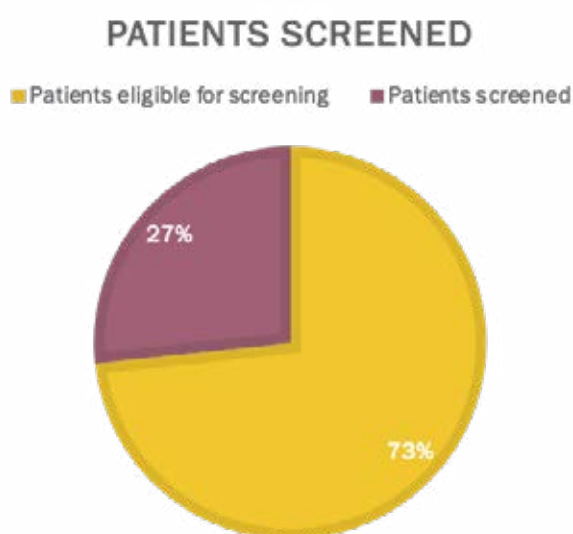


Figure 4: Proportion of patients screened post poster presentation



Audience Take Away Notes

- The audience will be able to learn the importance of screening for secondary hypertension on admission and their impact on patient care during their hospital stay
- The audience will be able to appreciate how simple local measures to increase awareness of screening criteria can improve patient outcomes
- Screening for hypertension will allow early management of the causes of hypertension, improving patient care and reduce the risk of patients being readmitted with end organ damage, strokes and myocardial infarction
- Screening for secondary causes of hypertension will allow clinicians to modify a patients cardiovascular
- Further research is required to assess the impact of hospital-based interventions to increase screening for secondary hypertension on admission and its long-term benefits and effects on patient morbidity and mortality

Biography

Dr. Zahra graduated with a distinction in MBBS from St Georges, University of London in 2022. She did her Bachelor of Science degree at Imperial College London for which she received a first-class honour. She has a keen interest in research and is currently an academic trainee at Imperial College London. She has over 10 publications in reputable journals and has presented at several international and national conferences. Her most recent work on “Comparison of Left Bundle Branch Area Pacing and Biventricular Pacing in Candidates for Resynchronization Therapy” was published in Journal of American College of Cardiology in July 2023.



Marianne Reimers Wessberg^{1,2*}, Ae Seiger¹, Johan Fastbom³, Anna Ugargh Morawski^{4,5}, Maria Eriksdotter^{1,6}

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Heart failure: Assessments and treatment prior to and during geriatric care

Background: Heart Failure (HF) is globally the most common cause for admission to hospital for patients 65 years and older in high income countries. Research on HF has however often focused on younger patients. The aim of these studies was to analyze extent of investigation and treatment among older patients prior to referral to inpatient geriatric care for worsening of HF and investigation and treatment changes during the geriatric care episode.

Data: Data were retrospectively collected from 134 individuals treated for heart HF as main diagnosis in wards specialized in geriatric medicine. Data were collected at admission to geriatric care and during the geriatric care episode. Referral content, Ejection Fraction (EF), Natriuretic peptide type B (NT-pro-BNP), Echocardiography (ECHO) and drug treatment, adherence to guidelines as well as length of care episode, additional investigations during the care episode, drug treatment changes and content in referrals to primary care were collected.

Results: The patients were high consumers of inpatient care with 3.8 care episodes during the year prior to admission and a high comorbidity burden with in average 3.7 according to Charlson's Comorbidity Index. Few patients (14%) had been examined by a cardiologist prior to referral. Patients investigated with ECHO were characterized as HFrEF (28%, HFpEF (53%) or HFmrEF (19%). The HFpEF group had had older assessments with ECHO (mean 517 days) than those with HFrEF (385 days). Only 22% of the 134 patients had had recent assessments (within 90 days) with ECHO and NT-pro-BNP, although they were repeatedly admitted to inpatient care.

Among the HFrEF patients 78% were treated with Angiotensin-Converting-Enzyme Inhibitors or Angiotensin Receptor Blockers (ACEI/ARB) and Beta Blockers (BB) according to guidelines from the European Society of Cardiology (ESC) but reaching only half of the target doses. Among patients with EF≤35% only 14% were treated according to guidelines, ie using also Mineral Receptor Antagonists (MRA).

During the geriatric care episode for HF, 20% were assessed with NT-pro-BNP and 1,5% with ECHO. No patients were assessed according to New York Heart Association. During the hospital stay, there was a significant increase in treatment with MRA and furosemide, but no significant changes in treatment with ACEI/ARB nor BB.

Compared with referral content to geriatric care, there was further a significant wash-out of information in the referrals from the geriatric to primary care. Information on etiology dropped from 31.4% to 5.8% ($p<0.001$) and information on EF dropped from 19.8% to 3.5% ($p<0.001$).

Conclusions: HF care in this population of older individuals showed deficiencies. There was little contact with cardiologists, lack of information of in referrals and low adherence to treatment guidelines. The contribution in the geriatric care of diagnostic assessments was low. Geriatric care did not change prescription of ACEI/ARB or BB, but increased treatment with furosemide and MRA. There was a distinct wash out of information on etiology and EF in the follow- up referrals from the geriatric clinic/hospital to the primary care. It is unlikely that improved diagnostic work- up and improved basis for treatment strategies can be managed through solely cardiologist's or geriatrician's intervention. More collaboration between cardiologists, geriatricians and primary care physicians is needed to improve the health situation among geriatric HF patients.

Audience Take Away Notes

- Although heart failure is the most common cause of inpatient care for patients over 65 years, assessments and treatment were not performed according to guidelines prior to geriatric care
- The geriatric care episode did not contribute to further assessments for HF
- Treatment with furosemide and MRA increased during the geriatric care episode, but there were no other significant drug changes
- There was a worrying lack of information on EF and HF etiology in the referrals to geriatricians but also from geriatricians to primary care specialists
- More collaboration between cardiologists, geriatricians and primary care physicians is needed to improve diagnostic work-up and treatment for geriatric HF patients

Biography

MD. Marianne Reimers Wessberg studied medicine at Karolinska Institute, Stockholm, and graduated in 2007. She finished her specialist education as a geriatrician in 2015 and started research on heart failure among geriatric patients in 2016 alongside work as chief physician at Stockholms Sjukhem. She has published two articles and is finishing two additionally. She is planning to graduate in February 2024 at Karolinska Institute, Stockholm.



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The value of mixed and group-based exercise in stroke rehabilitation and secondary prevention: Results from a randomized cross-over trial in low-income settings

Background: Post-stroke mobility deficits and physical inactivity are highly prevalent. Although physical activity has been shown to be effective for poststroke people, access to exercise training protocols is limited in community especially low-income settings. In addition, the impact of exercise in preventing recurrence is often overlooked.

Purpose: To investigate the efficacy of a “Circuit walking, Balance, Cycling and Strength training (CBCS) trial on global activity and mobility in stroke survivors.

Methods: Forty-six (46) community-dwelling post-stroke people, no longer in conventional rehabilitation were randomized into Immediate CBCS group (IG, n=23; initially receiving CBCS training for 12 weeks in phase 1), and a delayed CBCS group (DG, n=23) which participated in socio-cultural activities for 12 weeks. In phase 2, participants in the DG group were crossed over to receive CBCS and those of the IG were followed in socio-cultural activities. The interventions were applied three times a week for 12 weeks in either phase 1 or phase 2. Participants were assessed at baseline, after intervention (12 weeks), after cross-over (24 weeks) and at follow up (3 months). The primary outcome was ADL limitations (ACTIVLIM-Stroke scale). Secondary outcomes included mobility: 6-minute and 10-metre walk tests [6MWT and 10mWT] and stroke risk factors (Blood pressure and type-2 diabetes).

Results: The CBCS group improved significantly and clinically functional independence (ADL limitations; ACTIVLIM-stroke, +3,4 logits, $P < .001$, Effect Size [ES] 0.87), and mobility (+145 m for 6MWT and +0.37 m/s for 10mWT; $p < 0.001$; ES 0.7 and 0.5 respectively). Following CBCS, there was reduction in HbA1c ($8.6 \pm 1.0\%$ to $6.8 \pm 0.9\%$, $p < 0.05$, $n=26$) and blood pressure reduction (4 ± 6 mm Hg diastolic and 3 ± 4 mm Hg systolic, $n=16$). The benefits persisted for at least 3 months after intervention completion.

Conclusion: CBCS improved globally functional independence (ADL limitations and mobility) in chronic stage of stroke. CBCS attendance yields benefits in stroke recurrence prevention.

Implications: Developing and delivering cost-effective, equitable-access rehabilitation services to stroke people is still a challenge in Low-and Middle-Income Countries (LMICs). Limited geographical and financial access to medical and rehabilitation care is the main barrier. This study highlights the value of mixed, group and community-based training, a cost-effective intervention in low-income countries, where its ease of administration and local accessibility may be key to improving adherence and long-term outcomes. This group-based intervention could contribute to secondary stroke prevention.

Key terms: Stroke, Secondary prevention, Activities of daily living, Mobility, Group-based rehabilitation, Community rehabilitation, Low-and middle-income countries

Biography

Felix graduated Bachelor in Physiotherapy and rehabilitation in Benin and worked as humanitarian physiotherapist till 2016. He went back to school at catholic University, Belgium and graduated as Msc degree in 2019. He then joined the research group at the Institute of Neuroscience (Ions), motor learning division, Department of health research at the Catholic university of Louvain. He received his PhD degree in 2023 at the same institution. Felix is a certified Exercise Therapy and neurorehabilitation therapist. His interest focuses on physical activity, exercise and motor skills learning in neurological disorders. He has published 6 research articles in SCI(E) journals.



Sasa Kacar^{1*}, Mirjana Kacar²

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“Umbrella like” myocardial “no touch” surgical closure of the postinfarction posterior ventricular septal defect

Post-Infarction Ventricular Septal Defect Rupture (PIVSR) is rare but highly lethal complication of acute myocardial infarction. Even with well-established surgical treatment (David’s or Daggett’s technique), 30-days mortality is still high, more than 40%.

The most challenging for the surgeons is the extreme friability of infarcted septum, long Cardio-Pulmonary Bypass (CPB) and Aortic Cross-Clamping (ACC) time, and bleeding disorders caused by preoperatively given dual antiplatelet therapy.

The “novel” technique by Torre M. et al, from Salerno, Italy, offers new trans aortic – trans atrial approach without ventriculotomy and infarctectomy, that significantly decrease ACC and CPB time, and maybe, decreases postoperative mortality, allowing us to safely operate such patients urgently.

In this presentation we want to show our positive and negative experience in urgent surgical PIVSR management using this approach, indications for this type of closure, positive and negative aspects of that technique, and our suggestions to improve surgical results in the treatment of posterior PIVSR, and suggestions to improve construction of the “closure device”.

In conclusion, we may strongly advise the “novel” approach and surgical technique suggested by Torre M. et al, because it is efficient and easy reproducible, and in emergent and urgent surgical closure of postinfarction VSD we can avoid myocardial stitches. That approach can also be a part of the staged septal surgical reconstruction when percutaneous closure strategy is not possible, postponing the total repair after two or three weeks, when the septal myocardium is not so fragile. Also, it is an opportunity for manufacturers to construct new device that will be more suitable for repair.

Audience Take Away Notes

- They can use surgical technique, indications, some tips
- To make better decision about the time and type of the intervention
- Yes, this research that other faculty could use to expand their research or teaching
- Yes, this provide a practical solution to a problem that could simplify or make a designer’s job more efficient
- Yes, it improve the accuracy of a design, or provide new information to assist in a design problem

Biography

Sasa Kacar studied Medicine at Belgrade University, and graduated in 1989. He finished specialization in General Surgery in 1995. At Belgrade University. He had a training in Cardiac Surgery in “Ospedale Riuniti di Bergamo” (Bergamo, Italy) and Master Studies at University St. Anna in Pizze, Italy (1995-1996.). He had OPCAB training at Leuven University (Belgium) (Prof.P.Sergeant) 2005., finished sub-specialization in Cardiac Surgery at Novi Sad University 2012. and PhD – 2018 at Belgrade University, Serbia. His present position is a Head of the Operative Department in Clinic for Cardiac Surgery at University Clinical Center of Serbia in Belgrade, Serbia (from 2015).



Wilson Saputra Wijaya^{1*}, Ika Krisnawati²

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The faces of post-streptococcal cardiac involvement in paediatrics: A case series

Group A Streptococcus (GAS) is a global burden, including in Indonesia, with long-term morbidity and mortality complications. The different response to nephrogenic and rheumatogenic strain makes concurrent post-streptococcal glomerulonephritis with acute rheumatic fever a rarity. Pancarditis progression in acute rheumatic fever can deteriorate to dilated cardiomyopathy, leading to cardiogenic shock and death. While in another side, Rheumatic Fever (RF) can progress to Rheumatic Heart Disease (RHD) and increase the risk of future heart failure, arrhythmias, cardiovascular disease, and endocarditis.

We report three cases of post-streptococcal cardiac complications. Patient 1, an 8-year-old female with palpitations and a recurring cough, was diagnosed with RF. Patient 2, a 10-year-old female child with haemoptysis, lungs and extremities oedema due to acute rheumatic carditis and a history of suspected vegetation. Both had severe mitral regurgitation due to prolapse, tricuspid regurgitation and EF >60%. Both recovered well with heart failure management, antibiotic, and aspirin. And Patient 3, a 9-year-old male initially diagnosed with post-streptococcal glomerulonephritis, deteriorated to dilated cardiomyopathy with EF 32% and multiple organ dysfunction syndromes. Under intensive diuresis, heart failure and infection management, the patient recovered after nine-day and was dismissed without symptoms. Unfortunately, Patient 1 had not returned for further follow-up.

Clinicians should be aware of post-streptococcal cardiac involvement despite rare cases, especially cardiomyopathy in post-streptococcal glomerulonephritis. Unlike RF, the progression to dilated cardiomyopathy remains unclear in PSGN patients. Unfortunately, we cannot check for GAS strains or biopsies due to limited facilities. Although RF is more common in tropical and developing countries, GAS outbreaks and mutation have been found in high-income countries. Early recognition and aggressive management are recommended since severe valve lesions and heart failure contribute to poor predictors for death in children. The prevention and long-term effects of cardiac-related need to be addressed, not only in GAS but also in other infectious diseases affecting the heart. Learning from the pandemic, how COVID-19 can easily be transmitted and mutated due to the progress of globalisation and its cardiovascular complications, guidelines are needed to face the upcoming challenges against infectious diseases.

Audience Take Away Notes

- Understand the management of a spectrum of post-streptococcal cardiac involvements. Mitral prolapse is more profound in early rheumatic heart disease
- Due to different strains, cardiac involvement in post-streptococcal glomerulonephritis is rare but can be devastated. Continuous monitoring is essential and carditis must be suspected in worsening symptoms
- Aggressive treatment and prevention in paediatrics are substantial as their long-term management and complications increase the global burden

- The need to increase awareness and address group A streptococcus as one of the neglected diseases. Future research and guidelines are required to face the upcoming infectious disease in era of globalisation

Biography

Dr. Wilson Saputra Wijaya, a graduate from Trisakti University in 2019, worked in the emergency department at Tangerang City Hospital and Tora Belo Hospital as a medical doctor. He has a passion in electrocardiogram, heart failure and their risk factors since studying medicine and has published several papers. He also participates in social works, scientific and educational activities and volunteers at the cardiology department.



Dhulipalla Dharma Teja^{1*}, S V Patted²

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²Professor and Head, Department of Cardiology, JNMC, Belgavi, Karnataka, India

Assessment of strain imaging in the prediction of early Cancer Therapy-Related Cardiac Dysfunction (CTRCD) and its correlation with serum biomarker (TROPONIN-I)

Introduction: Cancer Therapy-Related Cardiac Dysfunction (CTRCD) is one of the side effects experienced by nearly one-tenth of cancer survivors. LVEF and GLS have been proposed as a marker to predict CTRCD. Recent studies also suggest assessment of cardiac biomarkers including troponin for an early detection of CTRCD, however, how early the strain imaging should be used to evaluate CTRCD post chemotherapy is still under investigation.

Methodology: In a prospective observational study during the period of March 2019 to April 2020, 100 cancer patients on anthracycline and non-anthracycline therapy for different cancers were selected. Echocardiographic parameters such as LV function, GLS, GCS, and Troponin I assessment in blood at prior to the initiation of the treatment and at one week after the initiation of the chemotherapeutic treatment was performed. In our study we have taken reference range below -18 for GLS and -22 for GCS as significantly decreased strain. Positive troponin was defined as above the upper reference limit during the sample testing.

Results: Out of 100 patients, 22 developed CTRCD. Post chemotherapeutic treatment, patients who developed CTRCD had reduced GLS, reduced LVEF and significantly higher troponin I versus patients who did not develop CTRCD. In CTRCD patients, GLS was strongly associated with EF($\rho^2=25.78$, $p<0.001$). In addition, elevated troponin had significant association with reduced GLS ($\rho^2=78.95$, $p<0.001$) and reduced EF($\rho^2=31.31$, $p<0.001$).

Conclusion: In a mixed cancer population, the increase in troponin I was associated with CTRCD. The study implies to perform early strain imaging within one week of chemotherapeutic treatment to predict CTRCD. Decline in strain (GLS) was significantly correlated with elevated Troponin I.

Keywords: Cancer, CTRCD, GLS, LVEF, Troponin.

Audience Take Away Notes

- The purpose of this study was to evaluate the effectiveness of echocardiography in the detection of CTRCD, its relationship with Troponin I
- To assess the predictive value of strain imaging in CTRCD within one week of the chemotherapy treatment
- In our study we found out early sub clinical cardiac dysfunction using Strain imaging and we correlated it with Troponin I
- All the guidelines tell us to do Echocardiography at time interval of 4 weeks after chemotherapy, but in our study we found out CTRCD using GLS as early as 1 week

- Early detection of CTRCD leads to diagnosis of subclinical cardiac dysfunction which leads to better risk stratification of patients for chemotherapy, and treatment leads to better quality of life
- However, larger prospective studies with one type of cancer population are needed to strengthen the finding of this study

Biography

Dr. Dhulipalla Dharma Teja studied MBBS at SDUAHER (Kolar) University and graduated in 2014. Joined Doctor of Medicine (MD) general medicine at NTRUHS in 2014 and graduated in year of 2017. Joined Doctorate of Medicine (DM) in Cardiology at KLE Academy Of Higher Education And Research (JNMC, Belgavi) in 2018 and graduated in 2021.

Awards and Prizes: Received Shri V.M. Patted gold medal on 3/8/2022 for securing highest marks in DM cardiology examination held in 2021 August. Received (Iamicon-Cadila Pharma) Gold Medal (2021) for exemplary performance in field of cardiology 3rd Prize in competitive E-poster in December 2020 for poster on “A rare case of MAPCAS with TOF in adult male.



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An unusual case of post-thrombolysis emergency Coronary Artery Bypass Graft surgery (CABG) with postoperative complication of hemothorax in a young patient

We present a case of a 43-year-old man, a known case of hypertension, who was diagnosed with acute myocardial infarction for which he was given streptokinase (Fibrinolytic drug). He presented to the hospital with exertional dyspnoea and chest pain. Angiogram showed triple-vessel disease, Ejection-fraction-45% and hypokinesis of the anterior wall on echocardiogram. He had a euroscore of 5 and was unsuitable for PCI. Therefore, a decision to perform an off-pump Coronary Bypass Graft Surgery (CABG) was made.

Emergency CABG is indicated for patients with left-main coronary stenosis, 3-vessel disease, a history of failed Percutaneous Coronary Intervention (PCI) or unsuitable for PCI. CABG is the proven treatment for coronary artery disease ideally done 4-6 weeks after thrombolysis for MI due to hemorrhagic risk. Little information currently exists describing the management of patients with an evolving Acute Myocardial Infarction (AMI) treated with infusion of Streptokinase (SK) followed by emergency CABG. Problems related to the surgical and anesthetic care of these high-risk patients involved: (1) Management of resuscitation of AMI patients, (2) SK-induced coagulopathy, ongoing thrombolysis, (3) Timely CABG to preserve myocardial salvage.

In post-operative period, left pleural effusion ensued the insertion of Intercostal chest drain. Chest X-ray showed a left sided white-out. Bronchoscopy showed obstruction of the expanding lung. An emergency left thoracotomy was then performed, wherein blood clots were evacuated. The patient successfully recovered and subsequent visits were normal.

Conclusion: Any emergency surgical procedure on a patient who is thrombolysed is a high risk for hemorrhage, reexploration and DIC. However, to save the patient's life, the risk is considered necessary.

Audience Take Away Notes

- Surgical Evacuation of the clot from left hemithorax was the most important step which was taken that saved the patient. The clot was consuming all the clotting factors leading the patient to DIC and therefore reopening was necessary
- Despite thrombolysis, the patient had accumulation of clots
- In limited cases like this where CABG is high risk due to thrombolysis and acute MI, surgery must be undertaken
- Young patient with MI is at high risk of death due to poor collateral circulation and therefore emphasis on primary angioplasty should be done
- After an age of 35, patient with diabetes and hypertension, high risk for coronary artery disease should undergo yearly medical checkups

Biography

Anuja S Waidande, 3rd year medical student at Bharati Vidyapeeth (Deemed to be University) Medical college and hospital, Sangli. A hardworking Research enthusiast.



Shivling Sanjay Swami^{1*}, Priya Patil²

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Assessment of risk factors, pattern and severity of CAD in semi-urban Indian women

Introduction: It is an alarming observation that one third of all women in their fourth decade will develop coronary artery disease (1). Moreover, young women who develop coronary artery disease have a higher morbidity and mortality as compared to men of same age. (1,2) Traditional risk factors play a role in women, but their impact on coronary artery disease differs due to interplay of sex related factors. Incidence of hypertension increases two to three times in women on oral contraceptives. Relative risk of coronary death from diabetes was 2.58 for women as compared to 1.85 for men (3), while dyslipidaemia common in women shows rise in premenopausal age (4) Hence data correlating risk factors in women with pattern & severity of “Coronary Artery Disease” (CAD) will help to understand the disease better.

Aim: To assess risk factors, pattern and severity of CAD in Semi-Urban Indian women undergoing Coronary Angiography.

Objectives: 1. To Observe the pattern and severity of CAD in women undergoing CAG.

2. To Correlate CAD with risk factors like DM, HTN and dyslipidaemia.

Methods: Retrospective observational study was done on 77 women undergoing coronary angiography. After ethical clearance and permissions, case files were studied for history, presentation and laboratory parameters. Angiography reports were reviewed for pattern of CAD, extent of obstruction and vessel involved.

Results: Data of 77 women was recorded, and statistical analysis was done & results noted as follows

1. Average age of women undergoing CAG was 61.8 years, BMI was 26.7. 88.3% women were postmenopausal.
2. Out of the total cases, 73.07% had DM, 69.2% had HTN and 44.1 had dyslipidaemia. Dyslipidaemia was higher in older age group and showed statistically significant difference (p value=0.007).
3. Single, Double, Triple vessel disease was seen in 37.6%, 42.9% & 20.8% patients respectively, Triple vessel disease being common in age group >55years. Commonly affected was left anterior descending (LAD)-77.9%, followed by left circumflex (LCX)-44.2% and right coronary artery (RCA)-59.7%.
4. We studied association between CAD and risk factors-Diabetes Mellitus with LCX (p value=0.011), and RCA (p value=0.009), Hypertension with LAD (p value=0.019) and Dyslipidemia with LCX and RCA involvement (p value=0.000) with High Significance.

Conclusions: Women with CAD showed high incidence of risk factors like DM, HTN and dyslipidemia. Triple vessel disease was common in older aged post-menopausal women. LAD was frequently involved in patients with HTN while LCX and RCA in Diabetes and dyslipidemia.

Audience Take Away Notes

- This study will help the cardiologists and physicians to correlate Coronary Artery Disease with risk factors like Hypertension, Diabetes, and dyslipidemia
- It will help the cardiologists and physicians to suspect a particular vessel involvement if a particular risk factor is present
- Faculty members from public health department and professors from medical schools can use the knowledge obtained from the research to emphasize the importance of having a healthy lifestyle and identification of various risk factors and their role in severity of the disease
- Literature depicts that women are less likely to have CAD than men, however studies have shown that women with ischemic symptoms are less likely than men to be referred for angiography and vascularization procedure. Moreover, women with CAD are associated with significantly high mortality rates than men. Also women are known to be less aware of CAD and tend to neglect early signs and symptoms of the disease
- This study will help clinicians for better understanding on CAD in women to prevent the higher mortality rates as well as will help to spread awareness about CAD in women

Biography

Shivling Swami currently a final year MBBS Student studying in Bharati Vidyapeeth (Deemed to Be University) Medical College and Hospital Sangli Maharashtra India, and will graduate in the year 2025 and will get his MBBS/MD degree, currently along with MBBS he's currently pursuing journey of USMLE and is 2025 match cycle applicant, interested in doing internal medicine.



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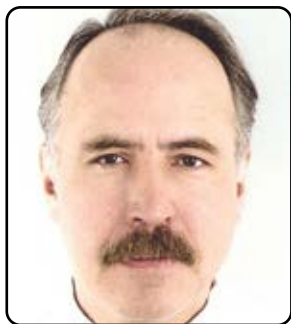
A conceptual paper on stakeholder collaboration aimed at addressing the psycho-social needs of women living with hypertension: Community development approach

Stakeholder collaboration is significant to the contribution and improvement of psycho-social functioning and resilience of women living with hypertension. The purpose of the study was to explore and describe perceptions of stakeholders in addressing psycho-social needs of women living with hypertension. A qualitative exploratory-descriptive study was conducted with twelve (12) stakeholders selected through purposive sampling. Semi-structured interviews were utilised to elicit their perceptions and views on possible intervention strategies to address the psycho-social needs of women living with hypertension. A community development theory was adopted in framing the study concerning health conditions that affects women living with hypertension. Data was analysed thematically. The findings revealed that to enhance psycho-social functioning of women living with hypertension, efficient, effective, and sustainable multi-stakeholder collaboration is essential. Data further pointed out that social workers could play an integral role of facilitating and establishing multi-stakeholder integration as would eventually boost women's resilience and quality of life.

Keywords: Collaboration, Community Development, Hypertension, Social Work, Stakeholders, Women.

Biography

Linda Shirindi is an Associate Professor in the Department of Social Work at the University of South Africa after having worked as a social worker in the public service. She has contributed to the department's research outputs by publishing academic papers in various peer reviewed accredited journals, as well as book chapters. Her research interests amongst others, include women and health, HIV and AIDS, Chronic Diseases of Lifestyle (CDL) and social work in health care.



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Surgical treatment of myxomas of the heart

Purpose: To determine the possibilities of surgical treatment of Myxomas of the Heart (MH).

Material and methods: In Institute for period from 1.01.1969 to 1.01.2020 957 Patients (PTS) with the verified primary tumors of heart were operated. The MH were exposed at 858 (89,6%) patients, from them in 757 (88,1%) cases–MH of the Left Atrium (LA). The myxomas of Right Atrium (RA) were determined in 74 (9,5%) supervisions, MH in LV and RV–for 8 (1,0%) cases accordingly. Multicentral growth of MH with a defeat two or three chambers of heart was discovered at 11 (1,3%) patients. Average age of pts with MH were $49,5 \pm 3$, 9 years (3-78). By III and to the IV functional classes of NYHA classification were taken-305 (31,8%) and 652 (68,2%) patients accordingly. At macroscopic research MH it was certain that tumors it was been: Villiferous–in 502 (58,4%) cases and compact new formations of ovoid or rounded form in 349 (42,3%) accordingly. Concomitant procedures were occurred on MVR (n=15), tricuspid valve's plasty (n=4), CABG (n=4). All operations were performed with CPB, moderate hypothermia (32–34 C), antegrade crystalloid cardioplegia.

Results: At surgical treatment of MH hospital mortality was 4,8% (39 cases). In the last 17 years 495 operations were executed without fatal outcomes. Reasons of fatal outcomes it was been: neurological complications–at 16 (46,2%) pts; material embolism–in 12 (30,8%) pts, infarct of myocardium–in 3 (7,7%) pts; septic complication–in 1 (2,6%) pts. In a follow-up period the results of surgical treatment of MH were studied for 698 patients (89,6% written) in terms from 6 months to 47 years (on the average $19,5 \pm 4,2$ years). Survivability in terms to 20 years was 79,7%. In a follow-up period in I NYHA class were 547 (78,4%) patients, in II I class–103 (14,8%). Relapses MH discovered for 16 (2,1%) patients in period from 2 to 12 years (on the average $3,5 \pm 0,4$ years) after operation. All were reoperated.

Conclusion: The adopted tactics ensure the effectiveness of surgical treatment of MH, confirmed by given good follow-up results.



**Popov Volodymyr V, Boukarim Valery*, Pukas Katrine,
Lazoryshynetz Vasily**

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Arch plasty of left atrium for moderate dilatation of left atrium during MV`S correction: Is it necessary?

Objective: To determined possibilities of Left Atrium (LA)'s reduction by original method of Arch Plasty of LA (APLA) during Mitral Valve Replacement (MVR) for isolated Mitral Valve Disease (MVD).

Methods: During 2005 – 2021 yy. 454 Adult Patients (PTS) with MVD and LA's moderate dilatation of LA (diameter of LA $50,0 < 60,0$ mm) average $57,1 \pm 0,8$ mm were operated at Institute. MVR were performed in 438 (96,5%) pts and MV plasty in 16 (3,5%). There were 194 (42,7%) males, 260 (57,3%) females. Average age was $57,4 \pm 6,9$ yy. There were 239 (52,7%) in IY NYHA class, 186 (41,0%) in III class and 29 (6,3%) in II class. The main reason of MVD was: rheumatism (59%). Atrial fibrillation was marked in 83,7% pts. All data divided at 2 groups: Group A – APLA + resection of LA's auriculum was 117 pts and group B – 337 pts only MVR without LA's plasty or ligation's auriculum were performed. All operations were used with CPB, moderate hypothermia with crystalloid cardioplegia. Cross-clamping time of aorta (minutes) were: group A – $71,1 \pm 14,2$ – and group B – $55,1 \pm 11,3$ ($p < 0,05$). Absence of using blood product during all hospital period was occurred in 44,5%.

Results: The hospital mortality were: in group A – 0,9% ($n=1/117$) and in group B – 2,1% ($n=7/337$) ($p < 0,05$). Reasons of deaths: group A – pneumonia (1pts), group B – brain damage (thrombemboli) (2 pts), heart failure (3 pts), MOF (3 pts). Sinus rhythm was restored, persisted at discharge: group A – 21,6%, remote period – 34,5% and group B – 5,2% remote period – 3,1% ($p < 0,05$). At the remote period (average was $7,3 \pm 3,2$ yy) 437 (93,2%) pts were followed-up. Data of echo for group A were: diameter of LA (mm) – Preoperative (PRE) – $57,9 \pm 0,9$, Postoperative (POST) – $48,3 \pm 0,8$, Remote Period (RP) – $49,5 \pm 0,6$; Ejection Fraction of LV (EFLV): PRE – $0,54 \pm 0,05$, POST – $0,57 \pm 0,03$, RP – $0,59 \pm 0,02$. At the remote period ($n = 110$) thromboembolic events were marked in 6,2% ($n=9/110$) and lethal events was occurred in 0,9% ($n=1/110$) pts. Data of echo for group B were: diameter of LA (mm): PRE- $57,4 \pm 0,6$, POST – $55,2 \pm 0,8$, RP – $63,2 \pm 1,1$; EFLV: PRE – $0,54 \pm 0,05$, POST – $0,55 \pm 0,05$, RP – $0,53 \pm 0,05$. At the remote period thromboembolic events were marked in 16,8% ($n=55/327$) and respectively lethal – 7,0% ($n=23/327$).

Conclusion: The original method of APLA with resection of left atrium's auriculum was allowing to improve better clinical results at group A than in B during all postoperative period ($p < 0,05$).



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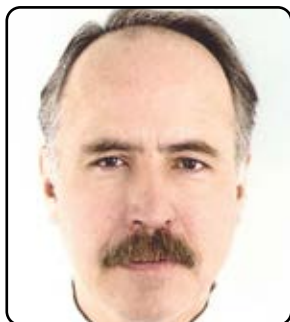
Mechanical valve for isolated mitral stenoses complicated massive thromboses of left atrium: Is it necessary?

Objective: To analyzed main problems in surgery of Mitral Valve Diseases (MVD) complicated by Left Atrium's Massive Thromboses (LAMT) (thromboses more than 1/3 of left atrium's volume).

Materials and Methods: 336 adult patients (pts) with MVD complicated LAMT were consecutive operated from 01.01.1984 till 01.01.2020 yy in Institute. Predominant genesis of MVD was rheumatism. Mitral stenoses was marked in all pts and all of them were in IV NYHA class. There were male 147 (43,7%) and females 189 (56,3%). The average age was $59,2 \pm 5,2$ yy. Preoperative thromboembolic episodes were in 59 (17,6%) pts. Calcification of MV was in 197 (58,6%) pts. Previous closed mitral commissurotomy was occurred in 35(10,3%) pts. The following procedures were performed: MVR (n=294) including plastic procedure on TV by De Vega (n=35); open mitral commissurotomy (OMC) (n=42) including plastic procedure on TV (n=7). Only mechanical valves were used. All operations were performed with CPB, moderate hypothermia, ante-retrograde crystalloid cardioplegia (Custadiol). All pts was divided on 2 groups; group A (n=162) maternal thrombotic basement was removal together with all thrombotic masses out of LA, group B (n=174) maternal thrombotic basement wasn't removal. There were used bileaflet prosthesis (Saint Jude Medical, Carbomedics, On-X, ATS) (n=140); monodisc (n=98), Star-Edwards (ball) (n=38), Amosov's model (hemiball) (n=18). Absence of applying donor blood product during all postoperative period was 19,5%.

Results: The Hospital Mortality (HM) at the period (1994-2014 yy) was 4,5% (n=9/198) for MVR and 0% (n=0/29) for OMC. The reasons of deaths were: heart failure (n=4), brain damage (thrombemboli)(only group B) (n=3), MOF (n=1), bleeding (n=1 group A). Traumatic rupture of LA's wall during radical removing of maternal thrombotic basement as specific complication was marked in 2,5% (n=4/162) pts. At all period of experience thromboembolic events were marked: group A-1,8% (n=3/162) (lethal=0), remote period-3,6% (n=5/140) (lethal-1,4%), group B-5,8% (n=10/174) (lethal-3,4%), remote period-13,3% (n=19/142) (lethal-9,2%) ($p < 0,05$). At all period of experience thromboembolic events were marked: MVR in 4,1 % (n=12/294), (lethal-1,0%), remote period-8,9% (n=22/245) (lethal- 5,7%) and during OMC 2,4% (n=1/42), (lethal- 0), remote period-5,4% (n=2/37) (lethal- 2,7%) ($p < 0,05$). 282 (95,5% alive) pts was followed-up at the remote period (average $16,2 \pm 3,1$ yy). At all period of experience thromboembolic events were marked for bileaflet prosthesis: Saint Jude- 1,5% (lethal=0,7%), remote period- 3,6% (lethal- 0,9%), Carbomedics - 4,3% (lethal- 2,7%), remote period- 6,5% (lethal- 2,2%), On-X- 2,4% (lethal=2,3%), remote period - 4,2% (lethal- 0), group ATS (n=32 pts) - 6,2% (lethal=3,1%), remote period - 9,3% (lethal- 6,3%) ($p < 0,05$).

Conclusion: Thromboembolic events at postoperative period is specific complicated factor for LAMT. Maternal thrombotic basement must be removed with all thrombotic masses in all pts. Mechanical valve is independent risk-factor at postoperative period except model Saint Jude.



Popov Volodymyr V*, Boukarym Valery, Bolshak Olex, Pukas Katerina, Rudenko Anatoly

National Amosov's Institute of Cardiovascular Surgery, Kyiv, Ukraine

Plasty of left atrium for atriomegaly during mitral valve correction

OBJECTIVE: To determined possibilities of Left Atrium (LA)'s reduction by original method of Triangular Plasty of LA (TPLA) during valve`correction replacement.

METHODS: During 2005 – 2021 yy. 725 Adult Patients (pts) with MVD and LA's atriomegaly (diameter of LA > 60 mm) average $69,7 \pm 1,8$ mm were operated at Institute. Mitral valve correction (mainly MVR) were performed in 687 pts, MV's plasty in 38 pts. There were 330 (45,5%) males, 395 (54,5%) females. Average age was $53,4 \pm 7,4$ yy. There were 428 (59,0%) in IY NYHA class and 297 (41,0%) in III class. All data divided at 2 groups: group A (main) - TPLA + resection of LA's auriculum was 148 pts and group B (control) – 577 pts only correction of valve pathology without LA's plasty or resection's auriculum. All operations were performed with CPB, moderate hypothermia with crystalloid cardioplegia. Cross-clamping time of aorta (min) were: group A - $95,4 \pm 13,2$ and group B - $73,2 \pm 9,2$ ($p < 0,05$).

RESULTS: The hospital mortality were: in group A - 2,0% ($n=3/148$) and in group B - 2,6% ($n=15/577$) ($p < 0,05$). At the remote period (average was $12,2 \pm 2,7$ yy) 671 (93,5%) pts were followed-up. Data of echo for group A ($n=139$) : diameter of LA (mm) - Preoperative (PRE) - $70,4 \pm 1,8$, Postoperative (POST) - $52,6 \pm 1,2$, Remote Period (RP) - $53,5 \pm 1,3$; ejection fraction of LV (EFLV): PRE - $0,53 \pm 0,05$, POST - $0,55 \pm 0,04$, RP - $0,57 \pm 0,04$. Data of echo for group B were ($n=532$) : diameter of LA (mm): PRE- $69,8 \pm 2,5$, POST - $67,4 \pm 1,8$, RP - $78,1 \pm 1,9$; EFLV: PRE - $0,52 \pm 0,04$, POST - $0,54 \pm 0,05$, RP - $0,53 \pm 0,04$. At remote period thrombembolic events and lethal events were marked respectively: in group A -5,9% and 1,1% and in group B -17,8% and 9,3% ($p < 0,05$).

CONCLUSION: The original method of TPLA was allowing to improve better clinical results at group A than in B ($p < 0,05$).



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Myocardial protection for isolated mitral valve replacement: Is retrograde applying of cardioplegia is better ?

OBJECTIVE: To present analysis of retrograde crystalloid cardioplegia during isolated Mitral Valve Replacement (MVR).

MATERIALS AND METHODS: During 2009-2020 y 529 patients (pts) with isolated pathology of Mitral Valve Disease (MVD) were operated by MVR in department of surgery of acquired valve diseases. There were 243 (45,9%) males, 286 (54,1%) females. Average age was 60,4±8,2 yy. NYHA class in all group were followings: II class-28 (5,4%), III class-229 (43,3%), IV class-272 (51,3%) pts. Concomitant procedures: TV's plasty (n=55), LA's plasty (n=47), Maze (n=12). The following applying of cardioplegia (Custadiol) were performed by: antegrade 84 (15,8%) pts (group A), ante-retrograde 66 (12,5%) pts (group B), retrograde-379 (71,7%) pts (group C) ways. Systemic hypothermia 32-34 C, cardiopulmonary bypass, retrograde cardioplegic solution (Custadiol) (in dose 20 ml/kg) + external cooling of myocardium were occurred in all pts. Average time of improvement of cardioplegia solution (min) were for: group A-9,8±0, 9, group B-12,8±1, 5, group C-20, 2±2, 7 (p<0, 05). Average cross-clamping time (min) were for: group A-69, 8±7, 9, group B-64,8±7, 5, group C-52,7±6,4 (p<0, 05) and reperfusion time (min) was for group A-19,8±3, 3, group B-18,6±3, 1, group C-16, 1±2, 5(p >0, 05).

RESULTS: Hospital mortality was for group A 3,5% (n=3/84), group B-3, 0% (n=2/66), group C-1,1% (n=4/379) (p<0,05). Average doses of dobutamin (1,0-3,0 mcrg/min/kg) were marked for: group A-54, 8±7, 2 hours, group B- 49, 1±5, 7 hours, group C-41, 5±5, 4 hours (p <0,05). Average level of MB KFK (U/L) at 2-td postoperative day were occurred for: group A-87, 3±9, 1, group B-79,4±8,6, group C-69, 1±7, 4 (p <0,05). Duration of stay on artificial lung ventilation (hours) were: group A-8,7±0,9, group B-8, 1±0, 7, group C-7, 5±0, 5 (p>0,05). Average time of staying in intensive care unit (hours) were: group A-59, 2±7, 5, group B-53, 3±6, 4, group C-45, 7±5, 3 (p <0,05). Absence of applying donor blood product during all postoperative period for group A-65, 5%, group B-68, 3%, group C-72, 6% (p<0,05).

CONCLUSION: Improved myocardial protection in cases with isolated MVD by using retrograde crystalloid cardioplegic solution (Custadiol) (group C) lead to better results than in group A and B (p<0,05).

18-19 **SEPT**

DAY 01
POSTERS

4TH EDITION OF
CARDIOLOGY
WORLD CONFERENCE



Chan Young Na

Dontan Hospital, Korea, Republic of

Surgical outcome of post-infarction left ventricular free wall rupture

Background and objectives: Left ventricular free rupture is rare and one of the fatal complications after acute myocardial infarction. Early recognition and aggressive treatment is recommended.

Methods: Between August 1999 and February 2023, eleven patients with ages between 64 and 79 years had development of left ventricular free wall rupture after acute myocardial infarction (mean interval 3.5 days). There was active bleeding (blow-out type) in 3 patients, and the other 8 patients were oozing or sealed state. Left ventricular free wall rupture repair techniques were 9 sutureless technique with Teflon felt and glue, and 2 primary suture closure technique and 1 primary suture and sutureless technique with Teflon felt and glue.

Results: Cardiovascular stability, as well as hemostasis, was achieved in the other 12 patients. There are 3 early death (all 3 cases area bleeding, one primary suture and 2 sutureless and glue). Three patients received percutaneous coronary intervention before discharge. All 8 remaining patients survived and were discharged. Three patients were lost in flow-up. The follow-up was from 2 to 97 months, with 4 exhibiting New York Heart Association (NYHA) class I symptoms and 1 exhibiting NYHA class II symptoms.

Conclusion: Optimal surgical treatment for post-infarction left ventricular free wall rupture remains controversial. The sutureless technique can be a promising strategy for treatment of post-infarction left ventricular free wall rupture.



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Rheumatic valve disease in pregnant women- An interesting case managed in two continents

Rheumatic fever is the most common cause of mitral stenosis and carries a high degree of morbidity in pregnant females. Adverse foetal outcomes are associated with mitral stenosis in pregnancy. Pathophysiology, symptoms and diagnosis of rheumatic valve stenosis during pregnancy and management during pregnancy will be discussed. Diagnostic workup will be discussed with demonstration of TOE images and typical findings on imaging will be discussed. Workup for surgery will be discussed and surgical options will be discussed.

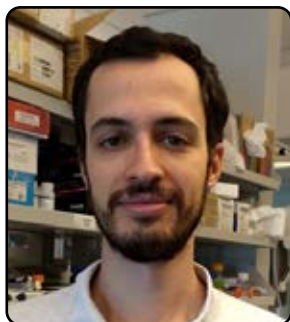
Overall the pathophysiology, presentation, management during pregnancy and after pregnancy, diagnostic workup, and treatment options will be discussed. Diagnostic images will be included. The importance of diagnosis of rheumatic valve disease will be discussed especially in countries where rheumatic fever is not endemic but cases can present due to extensive travelling and migration in the recent era.

Audience Take Away Notes

- A case presentation of a young lady who recently moved to UK and had symptoms during her visit to home country during pregnancy and was managed initially in the home country and later in the UK
- Audience will learn the pathophysiology of mitral stenosis and diagnostic workup and treatment options. With the expansion in travel and migration across the globe, the diagnosis of mitral valve stenosis in pregnant patients is more important and early identification and treatment can reduce maternal and foetal adverse outcomes, especially in countries where rheumatic valve disease is not common
- Patients remains asymptomatic and present during pregnancy. Shortness of breath can be due to multiple factors in pregnancy but a consideration to rule out mitral valve disease and thorough history can be helpful diagnosis can have a significant impact on pregnancy and needs extensive planning and pre-conceptual counselling for next pregnancy
- Valvular heart disease in the younger population is a topic of interest to cardiologists, obstetricians and cardiac surgeons and is a learning opportunity for multiple specialities as it is not a common presentation, there is a lot of room to learn from real-life experiences
- There will be TOE images in the presentation and a diagnostic workup plan for the audience to learn from the case presentation
- Learning from this case presentation will help in reminding clinicians to include Mitral valve stenosis, especially in patients with travel history or migration from endemic areas

Biography

Dr. Qazi Naeem ur Rehman studied at Ayub Medical College in Pakistan and moved to UK for training in medicine and worked at Salford Royal Hospital completed foundation competencies and entered Internal medicine training during which he worked at Leighton Hospital, Clatterbridge Cancer Hospital and Wirral University Hospital and completed MRCP. He is currently working at Wirral University Hospital and is involved in simulation teaching for medical students and foundation doctors and works as a cardiology fellow in the department of cardiology.



Al James A Manua¹, Mariel Lizbeth Joy S Agsaoay¹, Javier Lozano-Gerona^{1*}, Irina Conboy², Conrad Allan C Chong¹, Ranelle Janine L Asi¹, Ahmad Reza F Mazahery¹

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Plasmapheresis as a potential novel therapy to prevent cardiac fibrosis

When a Myocardial Infarction (MI) takes place, a process of cardiac remodelling follows. This is necessary to resolve the reduced or blocked flow of blood into the stressed or dying cardiac tissue. This includes the formation of scar tissue and deposition of extracellular matrix in the area, aka cardiac fibrosis. The functional cardiomyocytes are replaced by collagen, resulting in less contractile tissue and chronically reduced cardiac output for the patient. Despite this, if the fibrotic process does not proceed to a sufficient extent, there is a risk of rupture and death. Consequently, this process is naturally tuned to take place in excess. Attempts at chemically blocking it have produced mixed results, as a limited amount is still necessary to occur. Consequently, current protocols for therapy after myocardial infarction are typically lacking in tackling the fibrotic process that follows the initial damage.

In a collaborative effort, we are trying to apply a plasmapheresis approach to this situation. Plasmapheresis is a technique that draws blood from the patient, extracts the plasma and returns the cellular component mixed with saline. This therapy is already approved and used for some blood-based diseases but is yet to be explored in the field of cardiovascular diseases. We have observed that the disappearance of the plasma proteins has an important reduction in several pathological processes dependent on body-wide inflammation, such as ageing. We believe that cardiac fibrosis, also dependent in various inflammatory signals, may also benefit from this approach.

Because we are removing the excessive inflammatory compounds that reach plasma and not add a blocker, the necessary component of cardiac fibrosis is still allowed to occur. However, the same removal reduces the overall inflammation so that the excess may be avoided. As such, in this poster we present the premise of our ongoing collaborative project between the University of the Philippines Diliman and the University of California Berkeley on the amelioration of cardiac fibrosis after MI in a mouse model of MI. This approach has just become possible with the technology of plasmapheresis in small rodents developed by Dr. Conboy's group.

Audience Take Away Notes

- The new paradigm of how general inflammatory processes plays an important role in many pathological processes, including cardiac remodeling
- The potential of plasmapheresis as a clinical tool
- The problem and importance of addressing cardiac fibrosis after myocardial infarction

Biography

When a Myocardial Infarction (MI) takes place, a process of cardiac remodelling follows. This is necessary to resolve the reduced or blocked flow of blood into the stressed or dying cardiac tissue. This includes the formation of scar tissue and deposition of extracellular matrix in the area, aka cardiac fibrosis. The functional cardiomyocytes are replaced by collagen, resulting in less contractile tissue and chronically reduced cardiac output for the patient. Despite this, if the fibrotic process does not proceed to a sufficient extent, there is a risk of rupture and death. Consequently, this process is naturally tuned to take place in excess. Attempts at chemically blocking it have produced mixed results, as a limited amount is still necessary to occur. Consequently, current protocols for therapy after myocardial infarction are typically lacking in tackling the fibrotic process that follows the initial damage.



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Metastudy of potential key genes associated with cardiac fibrosis after acute myocardial infarction from published microarray data in a mouse model

In this study, we investigated the shared key genes, pathway networks, and Transcription Factors (TFs) associated with cardiac fibrosis following Acute Myocardial Infarction (AMI) in mouse models. Gene expression profiles of AMI and the sham-control group were obtained from the series GSE775 and GSE4648 downloaded from the NCBI GEO database. Commonly Differentially Expressed Genes (DEGs) between the AMI groups and the sham-control groups were identified at various time points post-AMI. The DEGs' biological functions, hub genes, and Transcription Factors (TFs) were explored through integrated bioinformatics tools. After the analysis, at 1 hour, no DEGs were found. At 4h, only 6 upregulated DEGs were identified, with no down-regulated DEGs. At 24h, a total of 260 DEGs were found, including 247 upregulated genes and 13 downregulated genes. At 48h, a total of 302 DEGs were identified, 278 upregulated and 24 downregulated. Functional enrichment analysis revealed that at 4h, the DEGs were primarily involved in "skeletal muscle cell differentiation," "transcription factor binding," and "MAPK signaling pathway." At 24h, the DEGs were primarily associated with "inflammatory response," "external side of the plasma membrane," "cell adhesion molecule binding," and "IL-17 signaling pathway." At 48h, the DEGs were found to be related to "inflammatory response," "membrane raft," "actin binding," and "IL-17 signaling pathway." Based on the PPI network, only six hub genes were identified at 4h, while ten hub genes were identified at 24h and 48h. We then further identified common hub genes at 24h and 48h related to cardiac fibrosis (IL1b, Itgam, Mmp9, Ccl2, IL6, and Ptgs2) which we believe may prove particularly critical in the cardiac fibrosis process. TRRUST predicted several TFs that regulate the hub genes at different time points, including transformation-related protein 53 (Trp53) at 4 hours, Nfkb1 at 24h, and Jun proto-oncogene (Jun) at 48h. These findings from our study offer new perspectives on the molecular mechanisms and potential biomarker targets for treatments against cardiac fibrosis. The findings may also contribute to the future development of optimal "time-to-treatment" strategies for patients with AMI. However, further molecular biological experiments are necessary to validate and confirm these findings.

Audience Take Away Notes

- Explore new insights into the molecular mechanisms underlying Cardiac Fibrosis following Acute Myocardial Infarction
- Discover and identify promising new biomarkers that could serve as targets for treating Cardiac Fibrosis
- Highlight potential bioinformatic tools to reveal innovative therapeutic targets for combating Cardiac Fibrosis

Biography

Mr. Manua completed his Biology studies at Mindanao State University- Main Campus, earning a Bachelor's degree in Biology in 2017. He then earned a Master's degree in Biology in 2021 at Mindanao State University- Iligan Institute of Technology. He actively participated in the Developmental Biology research group under the supervision of Dr. Mylah Villacorte- Tabelin at MSU-IIT, where he served as a Research Assistant and worked as a Project Development Officer on a project supported by DOST-PCHRD. Currently, Mr. Manua holds the position of Research Fellow at the Mamalian Cell Culture Laboratory at the Institute of Biology, University of the Philippines - Diliman.



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Simplified method for the simultaneous isolation of viable cardiomyocytes and nonmyocytes from the adult mouse heart

Cardiovascular Diseases (CVDs) have remained the leading cause of global mortality. Of these, one of the main events leading to death is Myocardial Infarction (MI), followed by cardiac fibrosis. To better understand the disease and its development, various techniques have been developed to create models for studying cardiovascular conditions. Most of the models developed focus on the role of recruited immune cells, with less models available to study the role of cardiomyocytes. One such approach for the isolation of cardiomyocytes and nonmyocytes from the heart of adult mice for in vitro studies is the Langendorff isolation. This current technique relies on retrograde aortic intubation of the heart using a specialized Langendorff apparatus. The high cost and extensive training requirement associated with this device poses an obstacle to researchers, particularly in newly established laboratories. Hence, this study aims to provide an alternative Langendorff-free method for cardiomyocyte and nonmyocyte cardiac cell isolation through enzymatic digestion and manual operation.

Briefly: Immediately after sacrifice, the inferior vena cava and descending aorta was cut off and the mouse heart is perfused by EDTA buffer injected into the right ventricle. The aorta was then clamped using a hemostatic clamp followed by the extraction of the heart and placed while still clamped on cold PBS. Afterwards, the heart is further perfused with EDTA buffer slowly injected directly into the left ventricle. The approach is repeated with PBS and then with a collagenase IV/dispase solution to isolate the cells followed by a stop buffer, an FBS solution. The heart is then gently teased apart into smaller pieces followed by filtration through a cell strainer. Cardiomyocytes and nonmyocyte from the cell suspension were separated and collected through gravity settling. Isolated cells can then be cultured in their respective media and calcium reintroduction steps can take place with the cardiomyocytes. The isolated cardiomyocytes were observed to have retained their rod-shaped morphology and contractile function. On the other hand, the fibroblasts isolated were able to proliferate up to four passages. The presented findings indicate that the simplified method proposed in this study is effective in isolating viable cardiomyocytes and nonmyocytes from the adult mouse heart but further analysis is necessary to characterize the isolated cells.

Audience Take Away Notes

- Grasp the difficulties associated in cardiac cell isolation
- Learn a new simplified method for cardiac cell isolation
- Identify potential applications of cardiac cell isolation

Biography

Ms. Agsaoay completed her Bachelor's degree in Biology at the University of the Philippines. She is presently in the process of earning her Master's degree in Microbiology in the same university. Prior to her current role as a Research Fellow at the Mammalian Cell Culture Laboratory in the Institute of Biology, UP Diliman, she worked as a disease surveillance officer at the Department of Health. Her primary focus at present is the execution of the IHITM 2018-033 project focusing on Acute Myocardial Infarction, which is supported by funding from the Commission on Higher Education.

18-19 **SEPT**

DAY 02

KEYNOTE FORUM

4TH EDITION OF

CARDIOLOGY WORLD CONFERENCE

Targets for the prevention of comorbidity of cardiovascular and oncological diseases

In the first decades of the 21st century, Chronic Noncommunicable Diseases (CNCDs) remain the leading cause of disability and death among adults in the developed world. Their total share in mortality is about 77%. Malignant oncological diseases, along with Cardiovascular Diseases (CVD) associated with atherosclerosis, are among the top three causes of death in the adult population. According to the forecast of WHO experts, in the next 5-10 years, CVD will account for 26.5% in the structure of mortality, and 8.5% for oncological diseases of various localization.

Traditional cardiovascular risk factors (smoking, harmful alcohol consumption, malnutrition, sedentary lifestyle, obesity, high blood pressure, high blood glucose and high blood cholesterol) play an important role in the development of oncological diseases of various localization. According to the US National Registry, patients (n=1582) with breast, prostate, uterine, and colorectal cancers had multiple RFs, such as smoking, overweight, sedentary lifestyle, hypercholesterolemia, arterial hypertension, and diabetes mellitus.

The comorbidity of somatic diseases among cancer patients is an urgent problem, as it worsens the prognosis of survival and significantly affects the quality of life. At the time of diagnosis of cancer, patients have at least two or three additional chronic diseases. In our cross-sectional cohort study among patients with lung cancer and colon cancer, the most common disease was essential hypertension (AH). Among patients with cancer of both localizations, its frequency was comparable, 76% and 75.9%, respectively. Among patients with bowel cancer, CHD was detected in 32% of cases, and in the group with lung cancer in 34.5% of cases. The comorbidity of somatic diseases is also associated with the localization of the malignant tumor. Type 2 diabetes in the group of people with lung cancer was diagnosed in 13.8% of cases, while in the group of people with bowel cancer it occurred twice as often, in 26% of cases. In the group of people with lung cancer, stomach diseases were detected in almost every second patient (44.8%), among people with bowel cancer this figure reached 70% of cases ($p=0.034$). Concomitant COPD in patients with lung cancer was diagnosed in 62% of cases, and in the group of patients with bowel cancer it was 3.5 times less and amounted to 18% ($p<0.001$).

Thus, it is important to carry out primary prevention, in particular lifestyle changes, which can significantly reduce both the incidence and the risk of developing complications of comorbid conditions. Secondary prevention should not be limited to the fight against cardiotoxicity, a wide range of measures requires the development of international recommendations, taking into account the severity of diseases, age and prognosis of complications.



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Biography

Professor Mehman Mamedov graduated from the Moscow Medical Academy named after I.M. Sechenov in 1993. He continued his medical residency at the Central Clinical Hospital of the Presidential Administration of the Russian Federation. Some 20 years ago, Mekhman N Mamedov made his first trip out of Russia. He had just received his PhD degree and was looking to develop his scientific interests, contacts and networking, by travelling abroad for oral and poster presentations.

Today, he is Professor of Cardiology, Head of the Laboratory for Assessment of and Correction of Cardiovascular Risk in the National Research Center for Preventive Medicine in Moscow and Vice President of the Cardioprogress Foundation. He is also a leading expert of the Russian League of Nation's Health.

In his current role, his scientific and research interests cover epidemiology of CVDs and risk factors, lipid metabolism disorders, prediabetes, diabetes and CVDs, men's health in cardiology, early markers of atherosclerosis, and telemedicine.

Professor Mehman Mamedov graduated from the Moscow Medical Academy named after I.M. Sechenov in 1993. He continued his medical residency at the Central Clinical Hospital of the Presidential Administration of the Russian Federation. In 1997 Dr. Mamedov received his PhD degree in the National Research Center for Preventive Medicine of the Ministry of Healthcare of the Russian Federation for research titled "Metabolic syndrome components in patients with arterial hypertension". In 2001 he wrote his doctoral thesis on "Clinical and biochemical features of metabolic syndrome and its pharmacological management". He has been working in the National Medical Research Center for Therapy and Preventive Medicine for 26 years, beginning as a researcher and eventually becoming the head of the scientific laboratory. He has letters of appreciation from the head of the Republic of Ingushetia, ministers of health of the Russian Federation, Uzbekistan, Tajikistan, Belarus, the Chechen Republic and the presidents of the Turkish Society of Cardiology, the Association of Internists of Kazakhstan and the National Health League. In 2019, he was awarded with V.D. Shervinsky medal by the President of the Russian Scientific Medical Society of Internal Medicine for his contribution to the development of medical science.

Optimizing nutrition for infants with congenital heart disease

Congenital heart disease is one of the more common congenital anomalies with an incidence of approximately 4 per 1000 live births. Although many of these infants are born at term with birthweights well within the normal range, they often can develop growth failure due to inadequate nutrition. Providing optimal nutrition for these infants is imperative for improving both short and long term outcomes. However, clinicians have been reluctant to provide enteral feedings to these infants due to potential risks including necrotizing enterocolitis. Although the literature is sparse, some recent publications have suggested that several important management strategies can help to promote optimal growth in these infants both pre and postoperatively including a standardized feeding protocol and feeding these infants an Exclusive Human Milk (EHM) diet. A recent RCT compared a postoperative feeding regimen of EHM versus feeds consisting of formula in infants who had recently undergone surgical palliation. The results suggested that infants fed an EHM diet had improved growth velocity and no increased risk for NEC. Determining how best to feed these infants is an important factor in their overall management and long term outcomes.

Audience Take Away Notes

- Be able to describe the challenges to providing enteral nutrition for infants with congenital heart disease
- Review the current literature on this topic
- Understand how optimizing nutrition can improve short and long term outcomes for these infants
- Be able to give examples of feeding strategies in this population



Kate A Tauber

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Biography

Kate Tauber MD, MA FAAP is an Associate Professor at The Bernard and Millie Duker Children's Hospital at Albany Medical Center in Albany NY. She is the Director of the Mother's Own Milk program in the NICU as well as the Neuro NICU. She is certified by the American Board of Pediatrics and its Sub-board of Neonatal-Perinatal Medicine. Dr. Tauber is actively involved in the clinical care of neonates, teaching and mentoring of medical students, residents, and fellows, and regularly conducts clinical research with a focus on nutrition and breastmilk. She has presented her work at regional, national, and international meetings.

Precision medicine for a personalized care in dyslipidaemia

Dyslipidaemia comprises of abnormal lipid components and refers mainly to increased levels of LDL, non HDL particles and triglycerides while decreased levels of HDL. Dyslipidaemia is a common and independent modifiable risk factor for cardiovascular disease. Besides quantitative measurement, qualitative assessment of these components is also essential and therefore particles like Lipoprotein (a) and Apo-B should be taken into account.

Unlike in the past where dyslipidaemia was treated mainly based on their quantitative levels, there is a paradigm shift in providing a more personalized care to patients. This is based on assessment of cardiovascular risk of individual patient which allows choosing the right strategy of therapy for them. This would include using the right intensity statin therapy in the correct dose for a category or level of cardiovascular risk. In addition, there is now more emphasis on making use of other lipid lowering drugs like Ezetimibe, PCSK-9 Inhibitor, Fibrates and Omega 3 Fatty Acid. Adoption of these strategies are based on evidence derived from several well designed randomized control trials that have shown to lead to better cardiovascular outcome. It is therefore vital that clinicians are aware of this concept of precision Medicine so that prescription for managing dyslipidaemia is more cost effective and lifesaving.



Syed Raza

Consultant Cardiologist and
Physician Awali Hospital, Bahrain

Biography

Dr Syed Raza graduated from Aligarh University in India in 1993. After completing his postgraduate degree in Medicine from the same university, he moved to the UK for higher specialist studies. He successfully completed MRCP and CCT and later

also awarded Fellow of the Royal College of Physicians of Edinburgh (FRCP). He was awarded professor John Goodwin prize for outstanding performance in Diploma Cardiology exam at Hammersmith Hospital, University of London in 2001.

Dr Raza is Fellow of American College of Cardiology and American College of Chest Physicians. He is also Fellow of European Society of Cardiology and Fellow of European Society of Cardiovascular Imaging. He is also on the committee of Acute Cardiovascular Care, Heart Failure and Cardiovascular Imaging (European Society of Cardiology). He is currently working as Consultant Cardiologist and Head of the department of Medicine at Awali Hospital, Bahrain. Dr Raza is a board member of the Hospital Executive Committee. He also chairs the Resuscitation committee and Privileging and Credentialing Committee. Prior to this he worked as consultant in Cardiology at Mid Cheshire Hospitals, NHS trust, United Kingdom. He is the regional educational coordinator for RCP Edinburgh and examiner for MRCP exam for the Royal College of Physicians of UK. He has participated in some well-known trials and research. He has to his credit numerous publications and he has presented his scientific work in different parts of the world. He is peer review author for some well-respected International journals. He is permanent Review author for abstracts for European Society of Cardiology Annual Congress. He is on the editorial board of International Journal of Endovascular Treatment and Innovative Techniques. Dr Raza is a teaching faculty member for Healthcare Management and Leadership at Westford University, Dubai campus. He is certified American Board in Medical Quality. Dr Raza frequently organizes a number of seminars, webinars, symposia and workshop on various healthcare, quality and safety topics. Dr Raza has led the first awareness campaign in Heart Failure in the Middle East in 2017. He is chairman of BAPCO's health promotion unit. His special interests are Cardiovascular Imaging, Heart Failure and Acute Cardiovascular Care. He is founder and chairman of Raza Foundations which works for educating and increasing awareness on various health related topics amongst the general public as well as provide free healthcare services to poor as one of the charity initiatives.

18-19 **SEPT**

DAY 02

SPEAKERS

4TH EDITION OF

CARDIOLOGY WORLD CONFERENCE



Barbara Pala^{1*}, Priscilla Tifi¹, Laura Pennazzi², Giuliano Tocci¹

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Effects of the ketogenic diet and intermittent fasting on systolic blood pressure and vascular reactivity in a cohort of women with obesity and blood hypertension (Diet-to-Htn): Baseline characteristics

Cardiovascular disease is the leading cause of mortality for women and is responsible for 35% of total deaths in women, since there is a growing interest (as the Lancet Commission alert) on reducing the global burden of cardiovascular disease. It is estimated that obesity contributes significantly to women cardiovascular disease prevalence and mortality and should be considered a target for health interventions. Obesity is prevalent and increasing globally; moreover, together with insufficient physical activity, is closely associated with hypertension, and is more prevalent in women than in men. Analyses of US National Health and Nutrition Examination Survey data have identified obesity as the most important modifiable risk factor for hypertension. Women appear to have a higher risk of acute myocardial infarction associated with the occurrence of hypertension than men have, as reported from the interheart study. Central obesity, which is a key feature of metabolic syndrome, affects women after menopause, when hormonal changes cause profound metabolic changes and increase the probability of the onset of cardiovascular disease.

Materials and Methods: We assessed a single-centre, prospective clinical study aimed to evaluate the effects of different dietary regimens (ketogenic diet, intermittent fasting, free diet) on the reduction of clinical systolic Blood Pressure (BP) reduction in a cohort of women in menopause (aged between 50 and 65 years old) suffering from systemic arterial hypertension on stable drug treatment, and Body Mass Index (BMI) ≥ 25 kg/m². The effects of the three diet regimens on diastolic blood pressure, metabolic parameters (lipid and glucose levels), renal function, diastolic function of the left ventricle and vascular function parameters will also be evaluated.

Results: In the pilot phase of the study, 50 women were included (mean age 60 years, mean BMI 32 Kg/m²; mean clinical BP 129/78 mmHg), distributed 20 in the ketogenic diet group, 10 in intermittent fasting group and 20 in the free diet one.

Conclusions: The evaluation of the biological and clinical modifications gained with dietary strategies will allow to identify the additional role of such interventions in the prevention of cardiovascular diseases in obese women after menopause. Moreover, with our work we would like to increase the awareness and encourage lifestyle behaviors in order to decrease the women burden of cardiovascular disease burden.



Yanqin Cui*, Hang Yang

CICU, Heart Center, Guangzhou Women and Children's Medical Center,
Guangzhou, China

Explainable machine learning model for early predicting mortality in children after congenital heart surgery

Background: Congenital Heart Disease (CHD) remains one of the leading causes of infant and postneonatal mortality. Early recognition and successful management of critically ill CHD patients is a difficult challenge considering the complexity of the anatomy and physiopathology of congenital heart diseases. This study aimed to construct and validate an early mortality prediction model in CHD patients who underwent congenital heart surgery to guide management strategies.

Methods: In a single-center retrospective study, pediatric CHD patients who underwent congenital heart surgery were eligible. The primary outcome was operative mortality, that is, any death during hospitalization within 30 days of surgery. Competing risk models with independent sample t-test, Mann-Whitney U test, Chi-square test, and Recursive Feature Elimination with cross-validation were used to identify and quantify clinical characteristics acquired within the first 24 hours of admittance in CICU associated with early predicting mortality. Afterward, Shapley Additive exPlanations (SHAP) method to intuitively interpret how each variable is attributed to the current precision model. Early mortality prediction models were implemented using chosen characteristics by seven machine learning algorithms and tuned with 5-fold cross-validations. The final model was chosen by Delong's test by comparing its performance with other competing risk models. Finally, its performance was validated in an independent external cohort and explained by SHAP methods to show how this model works in a specific patient.

Results: Overall, 5756 pediatric CHD patients met eligibility criteria and were used as a development cohort. Risk predictors included arterial systolic pressure, blood platelet count, lactic acid, creatinine, alveolar-arterial gradient, and total intake per hour, of which the alveolar-arterial gradient is the most crucial variable. Seven early mortality prediction models were developed, and all of them adequately discriminated between patients with risks of mortality with the Area Under the Curve (AUC) 0.888, 0.881, 0.897, 0.953, 0.924, 0.947, and 0.946, respectively. The model using the Random Forest (RF) method showed the best performance and demonstrated good agreement between the development and validation cohorts (AUC 0.953 and 0.95, respectively).

Conclusion: This study provides an explainable and validated early mortality prediction model with >80% prediction accuracy and incorporates risk factors that are meaningful to predict poor prognosis. An individualized early mortality prediction model has the potential to improve the alertness of physicians and assist with management improvement.

Audience Take Away Notes

- The audience will understand what they learned
- It will be helpful for the audience in their job
- Yes, this research that other faculty could use to expand their research or teaching
- Yes, this provides a practical solution to a problem that could simplify or make a designer's job more efficient

- Yes, it will improve the accuracy of a design, or provide new information to assist in a design problem
- List all other benefits:
 - o The observation in pediatric patients with congenital heart disease should not be based on notable symptoms, but should incorporate all age-appropriate, evidence-based risk factors to thorough evaluation
 - o Machine learning methods could provide more subjective and better prediction mortality performance than the conventional statistical approach. Meanwhile, the use of Shapley Additive Explanations can easily rationalize the prediction performance of each variable in complex machine learning models and make models more interpretable by the user
 - o The early mortality prediction model can be implemented in a specific patient as an evaluation tool to help guide physicians in decision-making with different management strategies

Biography

Dr. Cui studied Pediatrics at the Guangzhou Medical University, China and graduated as MD in 2001. She then joined in Guangzhou Women and Children's Medical Center (GWCMC) as a pediatrician. She received her PhD degree in 2020 at Jinan University. She obtained the position of an chief physician and the department head of cardiac ICU in GWCMC. She has published more than 20 research articles in SCI(E) journals.

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Bibliometric and visual analysis of the studies on the relationship between hyperuricemia and insulin resistance in 2002-2022

Objective: With the help of CiteSpace software platform, a visual analysis was carried out around the literature on the relationship between "hyperuricemia" and "insulin resistance", to explore the relationship between the two, and to summarize and predict their potential relationship and research trends in the future through bibliometric methods.

Methods: First, the literatures related to the relationship between "hyperuricemia and insulin resistance" from January 2002 to September 2022 were retrieved from CNKI, Wanfang Data Platform, China Science and Technology Journal Database and the core collection database of Web of Science respectively. After summarizing, screening, de duplication and other operations, the year, author relationship, organization Keywords for visual analysis.

Results: After the screening and de reprocessing of the literature years and keywords, 1268 Chinese and 692 English literatures were included, and the overall number of papers was on the rise. Zhou Zefang was the author with the highest number of papers in China, and Johnson RJ was the author with the highest number of papers abroad, but there was a lack of cooperation between authors and institutions. The research focuses on the clinical observation, mechanism research, drug research and evaluation of related factors of hyperuricemia and insulin resistance.

Conclusion: The analysis of the research on hyperuricemia and insulin resistance at home and abroad in recent years is helpful to explore the relationship between them, compare the development process at home and abroad, communicate and discuss, learn from each other, and provide ideas and directions for the follow-up research in this field.

Keywords: Hyperuricemia, Gout, Insulin Resistance, Visual Analysis, CiteSpace.

Audience Take Away Notes

- Analyzed the correlation of studies related to hyperuricemia and insulin resistance, research hotspots and developmental changes in the past 20 years
- To summarize the development of research related to hyperuricemia and insulin resistance as ranging from clinical research to mechanism research, drug research, and ultimately back to the clinic, involving its mechanisms as well as its influencing factors
- According to the change of research hotspots in this field tends to predict its future research trends, providing directions and ideas for subsequent related research

Biography

Xue Wang, graduated from North China University of Science and Technology with a Bachelor's degree, is currently a Master's degree student in Clinical Chinese Pharmacy, studying at Beijing University of Chinese Medicine, with a research interest in Chinese medicine to prevent and treat metabolic diseases.



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Improving driving advice provided to patients with acute coronary syndrome on discharge: A quality improvement project

Background: Following an Acute Coronary Syndrome (ACS), a patient's ability to drive might be impaired and the Driver and Vehicle Licensing Agency (DVLA) provides guidance on driving restrictions post-ACS. The medical team is responsible for informing patients of driving restrictions that apply to them. During our day-to-day job we noticed that this was poorly done.

Aim: To improve the number of patients given clear driving instructions post-ACS to >90% in four months. To improve staff knowledge of driving advice post-ACS.

Methods: Fifteen clinical notes were audited to look for documented driving instructions post-ACS. Surveys were distributed to staff to evaluate their knowledge of driving restrictions post-ACS and to assess their current practice. The first implementation was a poster with driving advice post-ACS which was displayed on the cardiology wards. The second implementation was an acronym expansion with driving instructions pre-written to facilitate documentation. After each implementation, fifteen clinical notes were re-audited to measure their impact. This project was carried out between December 2021 and April 2022.

Results: Pre-intervention, 11% of patients audited had driving advice documented in their notes. This number increased to 26% and 38% following our first and second interventions respectively. At the end of the third cycle the number of staff who reported being aware of driving instructions post-ACS and imparting driving instructions to patients upon discharge increased from 72% to 90% and 41% to 80% respectively

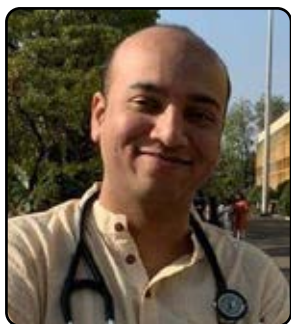
Conclusion: Simple measures such as introducing a poster and an acronym expansion with driving advice post-ACS have improved the quality of current instructions given to patients upon discharge as well as staff knowledge regarding the subject. To make this improvement sustainable, we hope to add a section on discharge letters dedicated to driving advice post-ACS.

Audience Take Away Notes

- Driving advice following acute coronary syndrome is something that is often poorly done but has serious patient as well as public safety implications. Our project was done at a local scale and improved the quality of instructions given to patients upon discharge as well as staff knowledge regarding the subject
- By presenting the project during the 2023 cardiology world conference, we hope to reach a large target audience who can be inspired by our project to implement changes in their local department and therefore helping to improve patient and public safety at a larger scale
- List of Benefits:
 - o Topic involves the safe discharge of cardiology patients. It is a public / patient safety topic
 - o Interventions used during this project can inspire audience to make change in their hospitals
 - o Measures used during the project are simple to implement by other cardiology departments worldwide

Biography

Dr. Sheefah Dhuny studied at University College Cork in the Republic of Ireland and graduated in 2019. She is currently an internal medicine trainee at Salford Royal Hospital in Manchester, United-Kingdom. After completing internal medicine training, she plans on pursuing a career in cardiology.



Neelesh Kumar S Shah*, Suresh V Patted, Sameer Ambar

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MicroRNA 24 as predictor of CAD severity in patients with acute coronary syndrome with and without diabetes mellitus

Objective: To compare the levels of microRNA (miRNA) 24 levels in diabetic patients with Acute Coronary Syndrome (ACS) with non-diabetics suffering from ACS.

Methodology: A prospective case-control study was carried out among 40 patients with ACS residing in Belagavi, Karnataka, South India. Patient characteristics based on demographics, ACS related information and treatment, biochemical parameters, and miRNA-24 levels were compared between diabetics and non-diabetics. Finally, miRNA-24 was evaluated for effectiveness as a clinical biomarker for CAD severity in ACS patients in both the groups.

Results: The majority of patients were males between the age group of 18 and 77 years living in urban areas with physical activities restricted to NHYA class 2. A significant level of differences was found between the cases and controls in patient characteristics such as duration of diabetes diagnosis, treatment of diabetes, family history of diabetes, comorbidities, random blood sugar and HbA1c. Within the levels of miR-24 also, significant variation was observed between the diabetics and non-diabetics. The ROC analysis for evaluating the efficiency of miR-24 as a clinical biomarker for diabetic patients with ACS was established.

Conclusions: The control (non-diabetic) group showed significant CT values of miRNA-24 compared to diabetics, suggesting an up-regulation of mi-RNA and thereby may play a protective role of miRNA-24 in these patients. Moreover, the ROC analysis for fold change in miRNA-24 level in diabetic patients with ACS was found to be significant, suggestive of a possible link between expression of miRNA-24 and glucose levels. Therefore, the current study supports the use of miRNA-24 as a prognostic marker in ACS outcome.

Keywords: Acute Coronary Syndrome, Diabetes Mellitus, Ischemic Heart Diseases, MicroRNA24

Audience Take Away Notes

- The purpose of this study is to assess the coronary artery disease severity in ACS situations among type 2 diabetes mellitus patients
- Prognostification of CAD helps in better clinical management of the patients and to predict future MACE events
- The present study can be planned in larger population and better glycemic control achieved, we can reduce MACE events

Biography

Dr. Neelesh Kumar S Shah, aged 32 years, studied MBBS at Sri Siddhartha Medical College, Sri Siddhartha University, Tumkur and graduated in the year 2014 as the Best outgoing student of the batch from the university with 18 Gold medals. Completed MD (Internal medicine) from VIMS, Ballari (RGUHS, Bangalore), was among the university toppers in 2018. Completed DM (Cardiology) from JNMC, Belagavi (KAHER) in 2021. Have worked as Assistant Professor of Cardiology at Sri Jayadeva institute of Cardiovascular Sciences, Bangalore for 1 year.

**Swetha Kannan**

Gulf Medical University, United Arab Emirates

Relationship between sleep and hypertension: A narrative review

The risk of cardiovascular disease increases at an alarming rate with the increase in an individual's blood pressure. Rise in systemic arterial blood pressure can be caused by factors such as unhealthy diet (excessive intake of salts, trans-fats and saturated fats), alcohol intake, inadequate sleep, smoking and decreased levels of physical activity. This narrative review aims at providing an overview of the existing studies on the relationship between duration of sleep as well as its quality and hypertension. The studies reported in this review were collected from the databases that include PubMed, Sciencedirect, Hindawi, ResearchGate and AHA journals in the period of 2006-2022. The keywords used for searching in the databases included sleep, insomnia, hypertension and cardiovascular diseases. The two sociodemographic variables considered was age and gender. Literature review showed that individuals reporting shorter durations of sleep, disrupted sleep patterns and insomnia were shown to be suffering from hypertension as compared to individuals receiving adequate and quality sleep at night. Data from this review article can prove beneficial to the common population in the understanding of sleep being a modifiable risk factor of hypertension and encourage healthcare workers and patients to make the necessary changes in their sleeping patterns to prevent hypertension and associated cardiovascular events.

Keywords: Cardiovascular Diseases, Hypertension, Insomnia, Sleep.

Biography

Swetha Kannan is a third year medical student studying in Dubai, UAE. She have two published articles, one in the field of cardiology and the other in medical humanities. More papers are under the review process. She have presented her researches in several local and international conferences. She authored a fiction book at the age of 18. She aspire to become a cardiologist one day.



Aditi Parulkar

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The role of epicardial adipose tissue in clinical cardiology

Epicardial adipose tissue is an area of multidisciplinary interest and tremendous potential for upcoming research. It is composed of adipocytes as well as inflammatory cells, nervous cells, vascular cells and immune cells. It has multiple protective functions and has functional interactions with the cardiac tissue due to shared circulation and lack of anatomical barrier. EAT contributes to disease progression by a variety of mechanisms from immune response, inflammation, oxidative response, endothelial damage, lipid accumulation. In cardiovascular diseases like CAD, Atrial fibrillation, Heart failure and Diabetes mellitus EAT promotes atherogenesis, arrhythmias, cellular fibrosis and apoptosis. EAT can be assessed by 2D Echocardiography, Cardiac MRI and contrast or non-contrast enhanced CT. Localisation of regionally distributed EAT in left atrial and pericoronary has immense scope in predicting the associated cardiovascular risk. A higher EAT volume is associated with a Coronary artery calcium score greater than 10 which can predict atherosclerosis risk. EAT volume and thickness is also higher in chronic Atrial fibrillation patients compared to patients with paroxysmal Atrial fibrillation. In addition, EAT is a novel target for cardiometabolic drugs with effects on GLP1R and SGLT2 receptors. EAT expresses Angiotensin Converting Enzyme 2 (ACE2) that serves as an entry receptor for SARS-CoV-2 and functions as a reservoir for the virus.

To conclude, EAT presents tremendous promise in risk prediction and clinical application. The possibility of cardiometabolic modulation provides an avenue for modification of cardiovascular risk. The research on this topic is still in its beginning stages and its potential is yet to be demonstrated in clinical decision making.

Audience Take Away Notes

- This presentation discusses the role of Epicardial Adipose tissue with the physiologic and pathological properties of EAT and its implication in cardiovascular disease and application in risk stratification
- We discuss imaging techniques to measure it clinically and assess cardiovascular risk while also understanding the significance of regional distribution of EAT and how Coronary and Left atrial EAT affect cardiovascular diseases
- We discuss how it can be a potential therapeutic target for cardiometabolic medications modulating adipose tissue
- We also shine light on the correlation between Type 2 Diabetes mellitus and high levels of epicardial adipose tissue and its role in COVID-19 related cardiac syndrome

Biography

Dr. Aditi Parulkar obtained her MBBS degree from People's College of Medical Sciences and Research Centre, India in 2020. She is currently working as a research associate at Maimonides Medical Centre, Brooklyn, New York. During the formative years of her medical education, Dr. Parulkar had the opportunity to complete her Summer Undergraduate Visitor Program at Stanford University in 2016. Dr. Parulkar has been actively practicing medicine both in India and the United States, gaining invaluable clinical experience while continuously expanding their skill set in clinical research. With first hand exposure to diverse healthcare systems, Dr. Parulkar aims to contribute to the ongoing evolution of healthcare and enhance patient outcomes



Shreenithi J

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HIV infection and heart disease

HIV infection is associated with high rates of Cardiovascular disease complications, including acute myocardial infarction, sudden cardiac death, and heart failure. It has been found that patients with HIV have a 2-fold risk of Cardiovascular disease and 50 percent increased risk of Acute Myocardial Infarction as compared to the general population.

Antiretroviral therapy has dramatically improved the prognosis and survival rates for patients with HIV since it is highly successful at containing HIV infection. However, as HIV infected patients treated with ART have a significantly increased lifespan, the risk of chronic diseases has emerged. Cardiovascular complications are now an increased cause of morbidity and mortality in the HIV infected population, especially in developed countries.

Treatment of HIV infection is associated with altered myocardial structure and function, higher rates of edema, fibrosis and pericardial effusion. This may be explained by the fact that there is chronic systemic inflammation in HIV, which affects the myocardium and pericardium. Antiretroviral therapy has also been associated with decrease risk of valvular heart disease but an increase in peripheral and coronary arterial diseases.

Prevention of cardiovascular diseases should take precedence in management of HIV-infected individuals. Some of the measures taken currently include selection of ART regimens with the least adverse effects, and taking steps to prevent traditional Cardiovascular risk factors wherever possible. The implementation of cardiovascular risk-prediction models specially tailored for HIV and the administration of drugs in addition to ART that could further reduce proatherogenic HIV-specific immune activation could be potential approaches to prevent CHD in HIV-infected persons.

Audience Take Away Notes

- Commonly found changes in cardiac structure and function, biochemical parameters in patients with HIV infection
- Prevalence and the clinical significance of the findings
- Possible methods of prevention and therapy
- This review will update the audience about ongoing clinical research and progress made so far in this regard, and the questions that need to be answered in the future

Biography

Shreenithi is a highly driven and analytical minded third year medical student adept at carrying out patient testing and care across multi- disciplinary healthcare environments. She is a versatile professional with diverse experience across various disciplines like Surgery, Internal medicine, ENT, Gynaecology, and Obstetrics among others. She experienced in providing clinical support in fast paced current environments as well as working with longer term patients on their care and well being. Calm and focused under pressure, capable of handling tough medical situations with utmost care. Highly empathetic and supportive with patients and has good rapport with fellow students, doctors and other members of the healthcare team. She also an active member and leader in several student organisations and actively involved in research. A passionate medical student with a dream of becoming a cardiologist in the near future, I've had the immense honour of delivering an oral presentation at the International Heart Congress 2023 held at Tokyo.



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Sleep apnea and atrial fibrillation: Exploring clinical characteristics and diagnostic screening options

Objectives: To investigate the prevalence of Obstructive Sleep Apnea (OSA), anthropometric and clinical characteristics of patients with Atrial Fibrillation (AF), and assess the possibilities of screening diagnosis for OSA.

Materials and Methods: The study involved AF patients (n=153) aged 34-81 years. The median age was 64 years, with 59 (38.5%) females and 94 (61.5%) males. Standard examinations were conducted, including respiratory sleep monitoring, and questionnaires such as SB, Berlin questionnaire, and ESS were administered.

Results: OSA was diagnosed in 114 (74.5%) patients. No predominance of a specific severity level was observed: mild (n=35; 30.7%), moderate (n=39; 34.3%), severe (n=40; 35%). When comparing patients with and without OSA, a statistically significant difference was found in body mass index (BMI) ($p<0.02$) and neck circumference ($p=0.006$). Patients with OSA had a 4.4 times higher risk of developing heart failure ($p=0.03$) and a 3.5 times higher risk of developing diabetes mellitus ($p=0.02$) compared to those without OSA. The ESS had the lowest number of confirmed OSA cases. Statistically significant differences were found when comparing apnea frequency based on the SB and Berlin questionnaires. Patients with a score of 3 or higher on the SB scale had an 11-fold increased odds of having OSA (95% CI: 3.3-38.2).

Conclusion: Over 70% of AF patients had OSA, with higher BMI and neck circumference. Those with both OSA and rhythm disorders had a higher prevalence of heart failure and diabetes, emphasizing their role in comorbidity. The Berlin and SB questionnaires are useful for assessing OSA risk in AF patients.

Audience Take Away Notes

- The audience can benefit from this text in the following ways:
- **Understanding the prevalence of Obstructive Sleep Apnea (OSA) among patients with Atrial Fibrillation (AF):** The text provides valuable information on the high prevalence of OSA in AF patients, with approximately 74.5% of the studied patients being diagnosed with OSA. This knowledge raises awareness among the audience about the potential co-occurrence of these conditions
- **Recognizing the clinical characteristics associated with OSA in AF patients:** The text highlights the statistically significant differences in Body Mass Index (BMI) and neck circumference between AF patients with and without OSA. This information helps the audience identify potential risk factors and clinical indicators that can prompt further evaluation for OSA in AF patients
- **Understanding the comorbidity risks associated with OSA and AF:** The text reveals that AF patients with OSA have a higher risk of developing heart failure and diabetes mellitus compared to those without OSA. This finding underscores the importance of managing OSA in AF patients to mitigate the associated comorbidity risks

- **Evaluating screening diagnostic options for OSA in AF patients:** The text discusses the use of respiratory sleep monitoring and various questionnaires, such as the SB and Berlin questionnaires, for screening OSA in AF patients. The audience can consider incorporating these screening tools into their clinical practice to identify OSA cases among AF patients more effectively
- **Clinical decision-making:** The information presented in the text regarding the prevalence of Obstructive Sleep Apnea (OSA) among patients with Atrial Fibrillation (AF) and the associated clinical characteristics can assist healthcare professionals in making more informed decisions. They can consider OSA as a potential comorbidity when evaluating and managing AF patients, leading to more accurate diagnoses and tailored treatment plans
- **Screening and diagnosis:** The text discusses various screening diagnostic options for OSA in AF patients, including respiratory sleep monitoring and questionnaires like the SB and Berlin questionnaires. Healthcare professionals can utilize this information to enhance their screening protocols and select appropriate diagnostic tools to identify OSA in AF patients more effectively. This can improve the accuracy and efficiency of their diagnostic processes
- **Risk assessment and management:** The text highlights the comorbidity risks associated with OSA and AF, such as a higher prevalence of heart failure and diabetes mellitus. This knowledge can help healthcare professionals in assessing the overall risk profile of AF patients and implementing appropriate preventive measures or treatment strategies. They can prioritize OSA management in AF patients to mitigate the associated comorbidity risks and optimize patient outcomes
- **Research and academic pursuits:** Researchers in the field of cardiology or sleep medicine can utilize the findings presented in the text to enhance their understanding of the relationship between OSA and AF. The information can guide them in designing further studies, exploring new avenues of research, and contributing to the scientific knowledge in this area. It can also serve as a reference or citation source for academic purposes
- Yes, this research can be valuable for other faculty members looking to expand their research or teaching in the fields of cardiology, sleep medicine, or related disciplines

Here's how this research can benefit them:

- **Research expansion:** Faculty members conducting research in the field of cardiology or sleep medicine can build upon the findings presented in this research. They can use it as a foundation to explore further aspects or investigate related research questions. For example, they could delve deeper into the mechanisms linking sleep apnea and atrial fibrillation, conduct longitudinal studies to assess the impact of OSA treatment on AF outcomes, or explore novel screening and diagnostic approaches
- **Teaching material:** The research findings, methodology, and conclusions can serve as valuable teaching material for faculty members delivering courses or lectures on cardiology, sleep medicine, or related topics. They can incorporate the research into their curriculum to educate students about the relationship between sleep apnea and atrial fibrillation, the prevalence of OSA among AF patients, the associated clinical characteristics, and the importance of screening and managing OSA in this population

Biography

Baymukanov Azamat graduated from Pirogov Russian National Research Medical University (Pirogov Medical University) in 2012. In 2014, he completed his residency in the specialty of "Cardiology." His PhD thesis focused on the impact of sinus rhythm restoration and retention on diastolic cardiac function after interventional treatment of patients with atrial fibrillation. He has served as a Representative of Russia in the "Heart Failure Specialists of Tomorrow" community and held the position of Chairman of the Youth Council at V.M. Buyanov Municipal Clinical Hospital. Additionally, he has published over 20 research articles.



Mohamed Waheeb

Curative organization, Egypt

Flail chest external fixation

Introduction: Rib fractures are a frequently identified injury in the trauma population. Nonoperative treatment is based on pain control and aggressive supportive pulmonary care primarily aimed at avoiding the need for intubation, which is associated with increased rates of pneumonia and death. For patients who continue to have acute pain or inherent chest wall instability (eg, flail chest), either of which hinders pulmonary function, in spite of maximal medical therapy, or those with rib fractures that do not heal and are causing persistent pain and functional impairment, surgical rib stabilization may be needed.

Methods and Objectives: Male patient, 32 years old, exposed to road traffic accident.

Trauma assessment: At time of ER. presentation patient was conscious, pain score 10, pain control had addressed by trauma team, patient exposure, wide caliber peripheral lines introduced, splinting for apparent limb disabilities (Rt. Forearm, Rt. Leg open fracture care and splinting and Lt. leg). As patient develop chest tightness with visible paradoxical chest segment at upper Lt. side of chest wall, Lt. side chest tube had introduced by cardiothoracic surgeon and intubation had done, mechanical ventilation on full respiratory support parameters, patient transferred to ICU and radiological assessment had done which revealed that:

- Bilateral both bone leg fractures Rt. Side was open fracture grade IIIa,
- Multiple ribs fracture and hemothorax Rt. Side.
- Multiple ribs fractures and hemothorax Lt. side.
- Fracture both bones Rt. Forearm.
- Non surgical abdomen.

Rt. Side chest tube had introduced by cardiothoracic surgeon which sealed about 1500cc blood, hemoglobin concentration 7 g/dl at time of presentation which lowering down on sequential laboratory assessment and had replaced. Paradoxical segment located at upper Lt. side opposing 2nd, 3rd and 4th ribs had revealed on examination and documented by paradoxical wave on respiratory curve at the monitor. Patient get desaturated as Rt. Lung had severely contused and Lt. lung had paradoxical respiration and patient was not fit for ribs internal fixation so we had proceeded to do ribs external fixation and closed stabilization of paradoxical segment utilizing ilizarov accessories under complete sterile condition as a bedside procedure.

Results: Paradoxical wave dramatically disappeared on respiratory curve at the monitor which can be used as a guidance sign for accurate fixation, pulmonary support parameters got decreased by 30% on ventilator instead of 100%, Lt lung start to be re-inflated at the beginning of the 2nd week.

Conclusion: Ribs external fixation in polytraumatized patients is life saving minimal invasive procedure and has to be validated.



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Doctor-patient communication about personal cardiovascular risk: A key step towards cardiovascular prevention?

Widespread knowledge and awareness of Modifiable Cardiovascular Risk Factors (MCRF) may be essential to reduce the burden of Cardiovascular Diseases (CVD). However, the lack of Doctor-Patient Communication (DPC) about personal Cardiovascular Risk (pCVR) could have negative impact on cardiovascular prevention achievement. The patients' knowledge and awareness of MCRF and the frequency of DPC about pCVR may vary due to various factors. Thus, it is very important to investigate these factors, since some of them may be the potential targets for preventive strategy improvement. This would be especially important in countries with high and very high cardiovascular risk where cardiovascular prevention should be brought to the highest level as soon as possible. It is also important to point out that the patients' knowledge and awareness of MCRF may not correlate with the frequency of DPC about pCVR. The pilot study results may direct further research and interventions focused on these issues. The results to be presented have been derived from the pilot study conducted with the convenience sample in Serbia in 2022. The data were collected by voluntary filling of survey with multiple choice questions. The study analyzed potential differences in DPC about pCVR depending on various respondents' characteristics, such as demographic characteristics (gender, education, place of residence etc) and clinical characteristics (the presence of MCRF i.e. hypertension, hyperlipidemia, diabetes mellitus, obesity and smoking). The main result suggests a notable lack of DPC about pCVR in general. Therefore, doctors should make efforts to discuss pCVR with patients, as this may be the crucial part of the preventive strategy.

Audience Take Away Notes

- The presentation will give insight into the importance of DPC about pCVR
- Potential target groups for cardiovascular prevention improvement through DPC about pCVR will be discussed
- The presented data may influence daily clinical practice by improving DPC about pCVR leading to better cardiovascular prevention

Biography

Dr. Jelena Petrovic graduated from the University of Belgrade, Faculty of Medicine in 2012. She works as an internal medicine specialist at the University Clinical Center of Serbia, Clinic for Cardiology, and continues her education with subspecialist and doctoral studies. Her recent scientific interests are particularly related to epidemiological aspects of preventive cardiology.



Saad Bin Zafar Mahmood*, Aysha Almas

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Premature atherosclerotic cardiovascular disease in Pakistan

Premature Atherosclerotic Cardiovascular Disease (ASCVD) represents a growing challenge that needs more attention to be addressed in early adulthood. It correlates highly with dyslipidaemia, male sex, smoking, inflammatory disease, hypertension, and family history of premature ASCVD. It is prudent to identify such adults at an earlier age and devise preventive strategies. We aimed to determine the frequency of premature ASCVD and their modifiable risk factors from primary care clinics in Karachi, Pakistan. A cross-sectional study was conducted from 1st September 2022 to 15th February 2023. The study was conducted at four primary care clinics from different districts. Participants were randomly included if they were aged between 18 to 50 for males or 18 to 60 for females and had at least one of the known risk factors of ASCVD. Pregnant patients were excluded. Data was collected using the WHO ASCVD questionnaire, Patient Health Questionnaire-9, and Short International Physical Activity Questionnaire. All patients who had no records of fasting lipid profile and fasting plasma glucose in the past 6 months underwent testing for the said tests as part of the study. A total of 614 participants were recruited with majority being female 373 (60.7%). Mean age was 41.9 ± 9.2 . Majority 513 (83.6%) were classified as obese, with 324 (52.8%) females having a waist circumference of >89 cm. Hypertension was the most prevalent comorbidity 213 (34.7%) followed by dyslipidaemia 210 (34.2%) and diabetes 105 (17.1%). 151 (24.6%) participants were either smokers or had used some form of tobacco. Moderate-Severe depression was seen in 112 (18.2%) while only 47 (7.7%) people were doing moderate-vigorous physical activity. The family history of ASCVD was seen in 136 (22.1%) participants. Premature ASCVD was found in 24 (3.9%) participants with 11 (45.8%) cases of cerebrovascular attack, 10 (41.6%) cases of myocardial infarction and 3 (12.5%) cases of angina. The findings from the study show that premature ASCVD and its risk factors are prevalent in the population and urgent action needs to be taken to control this rising epidemic.

Audience Take Away Notes

- Depending on the audiences which attend the conference, physicians can use the findings from the research to identify patients who are at risk for premature atherosclerotic cardiovascular diseases (ASCVD) and provide them with preventive care. This could include counseling on healthy lifestyle changes, such as eating a healthy diet, exercising regularly, and not smoking. They can use the findings to diagnose and treat patients with ASCVD, and can also use the findings to educate patients about the risk factors for ASCVD and how to reduce their risk. Meanwhile administrative staff can use the findings to develop policies and procedures to reduce the risk of ASCVD in the community. For example, they may use the findings to develop programs to promote healthy eating and physical activity in schools and workplaces
- This research can be used by other faculty members to expand into their own setup and determine the local prevalence of different risk factors and the incidence of premature ASCVD itself
- List all other benefits
 - o It can help to raise awareness of the issue of premature ASCVD in lower-middle-income countries
 - o It can help to promote research on the prevention and treatment of premature ASCVD in these countries

- o It can help to build relationships between researchers and clinicians working in this area
- o It can provide an opportunity to learn about the latest advances in the prevention and treatment of premature ASCVD
- o It can help to identify areas where further research is needed
- o It can help to raise funds for research on premature ASCVD
- o Presentation could raise awareness of the fact that premature ASCVD is a major problem in lower-middle-income countries. This could lead to more funding for research and prevention programs
- o Presentation could highlight the importance of lifestyle changes in preventing premature ASCVD. This could encourage people to make healthier choices about their diet, exercise, and smoking
- o Presentation could provide new insights into the causes and risk factors for premature ASCVD. This could lead to the development of new treatments and prevention strategies
- o Presentation could help to build relationships between researchers and clinicians working in this area. This could lead to collaborative research projects and the sharing of resources

Biography

Dr. Mahmood studied Medicine from Ziauddin University, Pakistan and graduated in 2013. He then joined Aga Khan University, completed his postgraduate training in Internal Medicine in 2019 and currently works as a Senior Instructor and Consultant Physician. He is an early career researcher with focus on multimorbidity and non-communicable diseases especially cardiovascular diseases. His interest in this comes from his time during residency. His interest in cardiovascular diseases led him to work on a local grant which focuses on “Atherosclerotic Cardiovascular Diseases in young and very young adult at primary healthcare centers across Karachi.” He has also been involved in developing training courses for general practitioners focusing on hypertension and diabetes. He has published around 20 research articles in peer-reviewed journals.



Yeganeh Mobasser*, Farveh Vakilian

Cardiology Department, Mashhad University of Medical Sciences, Mashhad, Iran

Assessment of treatment with spironolactone on right ventricular function in patients with type 1 pulmonary hypertension

Despite evidence showing the effect of vasoactive hormones including aldosterone in Pulmonary Arterial Hypertension (PAH) pathophysiology, few clinical reports are available concerning the effect of PAH treatment with aldosterone antagonists. Therefore, in this study, we evaluate the effect of PAH treatment with aldosterone receptor antagonist drug (Spironolactone) in case of right ventricular systolic and diastolic function and clinical findings.

Materials & Methods: This study was accomplished as a double-blinded randomized clinical trial with control group. All patients with PAH referring to Imam Reza Hospital, Mashhad since July 23, 2016, to July 23, 2017 were included to this study. Patients randomly received standard treatment (Tadalafil 10–20 mg once daily plus Bosentan 125 mg once or twice daily) or standard treatment in addition to spironolactone (25 mg once daily) for 3 months. Before and 3 months after the study, patients were assessed in terms of clinical (6-minute walking distance, right ventricular diameter [6MWD] and New York Heart Association [NYHA] function class) and echocardiographic (mid-right ventricle diameter, Pulmonary Arterial Pressure [PAP], and right ventricle function based on TAPSE) variables. After data collection, data were analysed using SPSS version 16 and $p < 0.05$ was considered as significant level.

Results: Overall, 45 patients (23 patients in “intervention group” and 22 patients in “control group” [35.1 ± 7.57 and 34.6 ± 9.54 years, respectively; $p = 0.83$]) completed treatment and follow-up period. Only 3 patients were men (2 patients in intervention and 1 patient in control groups). After completing 3-month period of study, no significant difference was observed in 6MWD, mid-right ventricle diameter, PAP and NYHA function class ($p = 0.834$, $p = 0.133$, $p = 0.938$, $p = 0.084$, and $p = 0.284$). However, TAPSE in intervention group was measured significantly more than control group ($p = 0.041$). On the other hand, no significant difference was seen in any of evaluated variables, between before and after study periods in control and intervention groups ($p > 0.05$). Additionally, in comparison of amount of difference after and before intervention, no significant difference was observed in none of two groups ($p > 0.05$).

Conclusion: Altogether, no significant difference was observed between any of studied clinical and echocardiographic variables, before and after study, in none.

Audience Take Away Notes

- They find that the administration of spironolactone in a patient with pulmonary hypertension does not have a therapeutic role
- It is effective in the correct treatment of patients with pulmonary hypertension
- Treatment of patients with pulmonary hypertension is always a medical challenge

Biography

Dr. Mobasser is an accomplished Cardiologist with dedicated career in internal and cardiology and focus providing quality healthcare for patients in preventive and treatment medical practice. National cardiology board-certified with 4 years of experience in healthcare environments. Member of American College of Cardiology. Some of certificate ACC CME. Certificate of attendance in ACC Middle East 2022 in Dubai. Teaching to nurses in CME programs.



Nahid Mobasser

Cardiologist, Zanzan University of Medical Sciences, Iran

Exercise training improves diastolic function in IHD patients

Purpose: The purpose of this study was to investigate the effect of exercise training on exercise tolerance and left ventricular diastolic function and structure in patients with chronic cardiac ischemia.

Methods: Eighty-eight patients with cardiac ischemia and diastolic dysfunction who were receiving appropriate treatment according to the guidelines were randomly divided into exercise training along with usual care (n=60) or usual care alone (n=28) in a random ratio of 2:1. Left ventricular diastolic function and exercise tolerance were evaluated before and after each intervention.

Results: Exercise tolerance and diastolic function improved with exercise training in, while they remained unchanged after usual care alone. In patients with grade 3 diastolic dysfunction, exercise training decreased the E/A ratio and increased DT, both of which were unchanged after usual care alone. In the remaining patients (diastolic dysfunction grade 1,2), exercise training also improved mitral inflow patterns.

Conclusion: These results show that exercise training can improve the pattern of cardiac diastolic function independently of the level of baseline left ventricular diastolic dysfunction.

Biography

Nahid Mobasser is a cardiologist with international board certification and was born into a scientific family. Her sister is also a cardiologist. She has been encouraged by her teachers throughout her studies. Among her colleagues, she is famous for her high skill in clinical diagnosis and interpretation of ECG. Many general practitioners ask for her opinion to interpret the ECG of their patients correctly. She is an active member of the American Heart Association and has attended many of its training courses. She is doing research in the research center of Zanzan University. She is able to perform angiography through radial and femoral artery. She has succeeded in obtaining a globally recognized certificate for laser skin therapy and varicose vein treatment. In the field of addiction treatment and methadone treatment, she has experience and a globally recognized certificate. She has conducted continuing medical education courses for general practitioners in the field of new drugs for the treatment of diabetes.



Jake Kieserman^{1*}, Ayan Ali¹, Joyce Wald²

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Infection or severe inflammatory response? Myopericarditis after the 2nd covid booster in a patient with Acute Myeloid Leukemia (AML) and neutropenia

Background: Myopericarditis is a rare complication of the mRNA Covid-19 vaccines, and often affects young males. We present a case of myopericarditis in a 68-year old male with AML after receiving the 2nd booster (4th dose) of mRNA-1273 (Moderna booster).

Case: A 68-year-old male with AML on chemotherapy presented to the emergency room with fevers, malaise and chest pain 2 days after his 2nd booster of mRNA-1273. On arrival, he was febrile but hemodynamically stable. Lab-work was notable for a WBC of 0.3 THO/uL (ANC <500 THO/uL). Troponins were elevated to 0.403 ng/ml but down-trended to 0.316 ng/ml. An electrocardiogram showed diffuse ST segment elevations and PR segment depressions. An echocardiogram showed a trace pericardial effusion. He quickly decompensated requiring transfer to the intensive care unit for hypotension refractory to fluids. Colchicine was initially held due to concern for sepsis. Broad spectrum antibiotics were started and discontinued after 48 hours given an unremarkable infectious workup. Steroids and colchicine were then initiated with rapid improvement in clinical status.

Decision Making: Although his clinical picture was consistent with myopericarditis, his fevers and hypotension in the setting of neutropenia were concerning for sepsis. Therefore, an infectious workup was pursued, and broad-spectrum antibiotics were started and the initiation of colchicine and steroids were delayed. Current literature describing myopericarditis secondary to Covid-19 vaccination shows that young men aged 18-25 are at highest risk, usually after the 2nd dose. A systemic inflammatory response is atypical. To our knowledge, there are no reports of myopericarditis existing in patients after the 2nd booster (4th dose), nor in patients with profound neutropenia and hematological malignancy.

Conclusion: There is a paucity of literature regarding myopericarditis due to mRNA Covid-19 vaccines in patients with neutropenia and malignancy. Typically, patients without an infectious etiology triggering the myopericarditis do not present with systemic signs of infection. However, those who present with myopericarditis with this level of immunosuppression may present similarly to patients with sepsis, and the threshold to begin steroids and colchicine should be low. Further data is needed to elucidate the frequency of a systemic inflammatory response in patients with this degree of immunosuppression.

Audience Take Away Notes

- Understand the management of an atypical and complex case of myopericarditis
- Deescalating antibiotics may be difficult when the myopericarditis is accompanied by fever and hypotension, but the threshold to initiate colchicine and steroids should be low
- Prompt recognition of myopericarditis and rapid initiation of therapy may prevent adverse outcomes

Biography

Jake Kieserman, MD is a second-year resident at the Hospital of the University of Pennsylvania. He received his MD from Temple University and his undergraduate degree from the University of Pittsburgh. Dr. Kieserman is an aspiring cardiologist, with interests in both cardiac critical care and interventional cardiology. When not taking care of patients, he can often be seen cheering on the Philadelphia Eagles and 76ers, as well as trying all the restaurants Philadelphia has to offer.



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Not your average heartbreak: A unique case of fulminant myocarditis due to coxsackie b virus in an immunocompetent male

Background: The clinical presentation of viral myocarditis is variable and is an important cause of cardiomyopathy worldwide. In some cases, symptoms are minimal consisting of mild fatigue and chest discomfort, where other cases result in fulminant heart failure, arrhythmia and sudden cardiac death. Here, we present a case of fulminant myocarditis in an immunocompetent 19-year-old man secondary to coxsackie B virus.

Case: A 19-year-old male with no past medical history presented with malaise and pleuritic chest pain associated with new fevers and chills. He denied any respiratory symptoms. On arrival, he was febrile and tachycardic. Computed tomography was negative for acute pulmonary embolism, and a Transthoracic Echocardiogram (TTE) revealed a structurally normal heart with an Ejection Fraction (EF) of 68%. An infectious workup was started, and he was empirically treated with broad spectrum antibiotics and fluid resuscitation. The following day, he became hypotensive that was not responsive to fluid resuscitation and developed a new oxygen requirement and bibasilar crackles. A chest x-ray revealed an enlarged cardiac silhouette. This prompted a repeat TTE to be performed, showing a new decline in EF to 32% as well as moderate to severe tricuspid regurgitation. ECG was unremarkable. He was empirically started on colchicine and ibuprofen and was then transferred to our tertiary care center to be managed in the Cardiac Intensive Care Unit (CICU). On arrival to the CICU, he was still tachycardic in the 140s and febrile and hypotensive. High sensitivity troponin was elevated to the 700s and a TTE showed a further reduced EF to 20%, with cold extremities and evidence of end-organ dysfunction with poor mentation and new acute kidney injury. Given concern for acute cardiogenic shock, he was started on empiric milrinone therapy.

He underwent a right heart catheterization revealing a cardiac output of 3.7 and cardiac index of 1.8. A CMRI was performed which showed acute myocarditis. He underwent an endomyocardial biopsy revealing minimal cardiac myocyte hypertrophy with minimal interstitial fibrosis and rare perivascular lymphocytes, notably negative for lymphocytic and giant cell myocarditis. A few days into his course, he developed ulcerated lesions on his right hand and hard palate, concerning for Hand, Foot and Mouth disease secondary to coxsackie virus. Positive titers to coxsackie B virus confirmed the diagnosis.

Over the week, he was able to be weaned off milrinone and his cardiogenic shock had resolved. He was initiated on guideline-directed medical therapy, with repeat TTE showing improved EF to 54% without evidence of tricuspid regurgitation. He was shortly discharged after his clinical improvement and set up with outpatient advanced heart failure follow up.

Conclusion: Fulminant myocarditis is a very rare and potentially fatal complication of coxsackie virus infection. Elucidating the etiology of myocarditis is challenging and is often critical when there is possibility for lymphocytic or giant cell myocarditis. Although the management is generally supportive when a viral etiology is identified, the prompt recognition of acute heart failure and initiation of advanced therapies may be necessary, even in immunocompetent patients. These patients should be started on GDMT for cardiac recovery and prevention of cardiomyopathy even when EF has recovered.

Audience Take Away Notes

- Prompt recognition of fulminant myocarditis in immunocompetent patients and the use of ionodilator therapy in the support of acute heart failure
- Understand that viral prodromes may be absent prior to the presentation of fulminant myocarditis when a viral etiology is suspected or identified
- Importance of guideline directed medical therapy after fulminant myocarditis
- Review the role of advanced cardiac imaging and endomyocardial biopsy in the diagnosis and treatment of myocarditis

Biography

Dr. Ayan Ali studied Biomedical Sciences at York University in Toronto, Canada, graduating with a BSc and completed a Certificate of Bilingual Studies in French. She went on to achieve her MD from Tulane University School of Medicine, where her outreach work in New Orleans stemmed her research interests in racial and ethnic disparities in cardiovascular disease outcomes. She is currently a resident at the Hospital of the University of Pennsylvania and planning to pursue fellowship in cardiovascular diseases after her chief residency, with interests in advanced heart failure and transplant cardiology. When not working on her clinical interests, she is practicing yoga and exploring her new home of Philadelphia.



Asma Syed

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Sudden cardiac death, risk stratification & prevention management

Sudden Cardiac Death (SCD) is one of the leading causes of death world wide. It is caused by ventricular arrhythmias and usually occurs suddenly without much notice. SCD can occur in patients with structural abnormal hearts specifically the patient with left sided systolic heart failure. The ejection fraction associated with risk of SCD is less than or equal to 35%. It can also occur in patients with structurally normal hearts but with pre-existing channelopathies or other arrhythmia substrates. The treatment is aimed at reducing the chances of having a ventricular event by treating the underlying substrate, reversing any conditions if possible, Guideline Directed Medical Therapy (GDMT) along with defibrillator implant. Implantable Cardiac Defibrillators (ICD) prevent SCD in the right patient population.

Clinical trials have demonstrated benefit of GDMT along with ICD implant in prevention of SCD. The correct patient and timing needs to be identified for ICD implant. Also genetic testing for family members is vital for patient with inherited disease to be able to risk stratify their relatives. Patients with end stage conditions need to be identified as those patients will not benefit from an invasive procedure of the ICD implant and should be treated conservatively medically. Reversible causes of increased risk of SCD need to be identified early and treated appropriately to decrease the risk of SCD and those conditions will not require ICD implant.

In this presentation, we will go over the risk factors associated with SCD and what steps need to be taken to decrease the risk and prevent SCD. We will also go over the guidelines (USA) regarding ICD implant along with conditions when an ICD should not be implanted. We will go over some of the reversible causes which can be successfully reversed and hence reduce the risk and avoid a device implant.

Biography

Dr. Syed obtained her bachelors degree in Biochemistry from Stony Brook University in 1994 followed by MD degree from Ross University in 1999. She completed her Internal medicine residency in 2002 from Brookdale Hospital Medical Center in Brooklyn, New York followed by Cardiology and Electrophysiology Fellowships at SUNY Downstate Medical Center in Brooklyn, New York. She is presently the Director of the Electrophysiology Laboratory at Brookdale Hospital Medical Center and is an Clinical Associate Professor of Medicine at SUNY Downstate Medical Center.



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ChatGPT – An artificial intelligence based educational resource for patients in cardiology

Background: There are a multitude of barriers that can lead to poor cardiac outcomes in the United States, especially those faced by underrepresented and minority populations. The development of new advancements in the field of Artificial Intelligence has become a primary tool in the latest efforts to expand medical education to a larger audience than could have ever been done before. ChatGPT, a novel Large Language Model (LLM) developed by OpenAI, has recently emerged as a promising tool given its ability to answer questions, give personalized responses, and solve complex problems, all while simulating human conversation. In this paper, we examine the role that ChatGPT can have as an educational resource for patients receiving cardiovascular care.

Methods: To investigate the potential applications of ChatGPT, we conducted a literature review to examine the current state of knowledge regarding the program's capabilities and clinical uses. We then posed common cardiac patient questions to ChatGPT and documented the answers provided by the program. All queries were inputted into GPT-3.5, the latest free-to-use version of ChatGPT.

Results: ChatGPT has many benefits that have the potential to improve education delivery to cardiology patients. This modality is free-to-use and is available in over ten languages, making it easily accessible to all patients. The software can also help answer questions related to recent diagnoses, medication uses, and post-operative instructions. ChatGPT can also guide patients on prevention and lifestyle modifications, showing its usefulness in the preventative realm of cardiovascular medicine as well. Despite these benefits, ChatGPT, like any technology, carries certain risks and limitations that must be addressed. In addition to security and privacy concerns, the software carries a risk of spreading misinformation, a problem exacerbated by system-falsified citations. The lack of input boundaries also makes it difficult to standardize responses.

Conclusions: The aim of this paper was to detail the use of ChatGPT as an educational tool for patients receiving cardiovascular care. Despite the software's limitations, ChatGPT shows promise to advance patient education forward. Future efforts must be focused on addressing these inconsistencies, and we believe that healthcare professionals should be involved in future software developments to ensure the quality of information given to patients.

Audience Take Away Notes

- With this presentation, the authors aim to inform the medical community about a novel chatbot which has the potential to impact patient education
- Our goal is to describe the benefits of the software, as well as spread awareness of its current limitations
- Because of the novelty and lack of literature on ChatGPT, this presentation can get physicians and other healthcare providers well acquainted with the software to best educate their patients going forward

Biography

Faris Halaseh is a medical student at the University of California, Irvine (UCI) School of Medicine.



Joao Rafael Rocha da Silva^{1*}, Mariana²

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Pain as a potential impact factor in cardiac rehabilitation: Literature review

Introduction: Cardiovascular Diseases are responsible for substantial damage to the health system, being the main cause of mortality in the world, just as pain is the main cause of disability in the world. It is common for individuals diagnosed with both pathologies as well as other comorbidities, to be associated with a high risk of mortality. The study of pain in this specific population can bring us greater clarity on the impact it has on cardiac rehabilitation.

Objective: To identify studies that researched the impact of pain in patients with cardiovascular disease, and to analyze the impact of pain on the rehabilitation of these individuals.

Methods: We performed an integrative literature review in the PUBMED database based on clinical practice, selecting studies that evaluated pain, functional capacity, quality of life, and treatment adherence, the studies were analyzed according to criteria of practice based on scientific evidence.

Results: A total of 380 studies using the search strategy, where 55 studies were selected after reading the title and abstract, and after analysis 23 studies were included according to the inclusion criteria. Despite the high relevance of the subject in the literature, there are still few studies with a high level of scientific evidence, which address the impact of pain in individuals with cardiovascular disease, but primary studies have shown a direct correlation between the two pathologies, being associated with clinical worsening of these individuals, highlighting the importance of a better approach to pain.

Conclusion: Pain is a common pathology among individuals with cardiovascular disease, decreasing functional capacity, and treatment adherence, and triggering changes in the autonomic nervous system, which can negatively impact cardiac rehabilitation.

Keywords: Pain, Chronic Pain, Cardiovascular Disease, Cardiac Rehabilitation.

Audience Take Away Notes

- After the presentation, the audience will have a better understanding of the importance of effective pain management in these patients
- I will show important details when approaching these patients giving a better direction for cardiac rehabilitation
- Certainly this research that other faculty could use to expand their research or teaching
- Yes, pain is a frequent complaint in individuals with cardiac dysfunction
- Yes, it will open the possibility of a new direction for future research

Biography

Physical Therapist Joao Rafael Rocha da Silva, Postgraduate Degree in Sports Rehabilitation Orthopedics and Sports Traumatology CETE Federal University of Sao Paulo, Improvement in Interdisciplinary Pain Assessment and Treatment Hospital das Clinicas, USP Medical School. He published two works in 2022 "Manual Therapy in the Treatment of Pain" Revista Neuro Ciencias and "Assessment of the Transversus Abdominal Muscle in Individuals with Pain" Med Crave Neurology Journal. Presented the work "The impact of pain on the practice of physical exercises" International Heart Congress 2023 and "Manual therapy and segmental stabilization in the treatment of pain" International Conference on Neurology And Neurological Disorders 2023. work accepted for publication in the scientific journal Medicine and Clinical Science "Pain as a potential impact factor in cardiac rehabilitation: Literature Review."Scientific Reviewer.



Yasser Mohammed Hassanain Elsayed

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COVID-19 pneumonia with atrial fibrillation, coronary spasm, and wavy triple sign (Yasser's sign); dramatic reversal at home management- A case report

Rationale: A novel COVID-19 with a severe acute respiratory syndrome or pneumonia had arisen in Wuhan, China in December 2019. Emerging atrial fibrillation in COVID-19 patients is highly significant in cardiovascular medicine. A newly coronary artery spasm in the presentation of COVID-19 infection has certainly a risk impact on both morbidity and mortality of COVID-19 patients. Wavy triple an electrocardiographic sign (Yasser's Sign) is an innovated sign of hypocalcaemia linked to tachypnea and acute respiratory distress.

Patient concerns: An elderly male COVID-19 patient presented to physician outpatient clinic with bilateral pneumonia, atrial fibrillation, evidence of coronary artery spasm, and Wavy triple an electrocardiographic sign (Yasser's Sign).

Diagnosis: COVID-19 pneumonia with coronary artery spasm and the Wavy triple an electrocardiographic sign (Yasser's Sign).

Interventions: Chest CT scan, electrocardiography, oxygenation, and echocardiography.

Outcomes: Gradual dramatic clinical, electrocardiographic, and radiological improvement had happened.

Lessons: The reversal of electrocardiographic ST-segment depressions in a COVID-19 patient after adding oral nitroglycerine is an indicator for the presence of coronary artery spasm. It signifies the role of the anti-infective drugs, anticoagulants, antiplatelet, and steroids in COVID-19 patients with bilateral pneumonia, AF, coronary artery spasm are effective therapies. The disappearance of AF after initial therapy may a guide for a good prognosis in this case study. The evanescence of Wavy triple ECG sign as a hallmark for the existence of the Movable-weaning phenomenon of hypocalcaemia is recommended for further wide-study.

Keywords: COVID-19, Coronavirus, Bilateral Pneumonia, Atrial Fibrillation, Wavy Triple Electrocardiographic Sign, Movable- Weaning Phenomenon.

Audience Take Away Notes

- The reversal of electrocardiographic ST-segment depressions in a COVID-19 patient after adding oral nitroglycerine is an indicator for the presence of coronary artery spasm
- It signifies the role of the anti-infective drugs, anticoagulants, antiplatelet, and steroids in COVID-19 patients with bilateral pneumonia, AF, coronary artery spasm are effective therapies
- The disappearance of AF after initial therapy may a guide for a good prognosis in this case study
- The evanescence of Wavy triple ECG sign as a hallmark for the existence of the Movable-weaning phenomenon of hypocalcaemia is recommended for further wide- study

Biography

Dr. Yasser Mohammed Hassanain Elsayed is a Critical care physician, cardiologist, and researcher (Egyptian Ministry of Health). He obtained MBBch (Al-Azher University) and a PGDip Cardiology (Middlesex University). The researcher has (110) articles and (4) medical books. He has (9) innovative issues; (3) innovative "Signs", (4) "Phenomena", (1) "Modification", and (1) "Maneuver". He has peer-reviewed (145). He was a Speaker at (16) International Conferences. He is an instructor; (6) lectures. He is an editorial member (about 40 medical journals). He was honored for research by several institutes. Research Interest: Critical Care, Emergency, Cardiology, Internal Medicine, Pharmacology, and Toxicology.



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Alpha 1D- adrenoceptor RNAm silencing and its contribution to cardiovascular function in sympathectomized spontaneously hypertensive rats

Alpha 1D-adrenoceptor ($\alpha 1D$ -AR) is a G-coupled receptor involved in blood pressure regulation, so far, its activity has been determined using BMY 7378, a drug with high affinity for them; but, with some other therapeutic blanks, as 5HT₁ receptors, which could contribute indirectly with blood pressure regulation. However, the importance of $\alpha 1D$ -AR in cardiac function has been limited to the contraction of coronary arteries. But recently, it has been demonstrated that its antagonism with BMY 7378 produce the reversion of left ventricular hypertrophy and improves the cardiac function in hypertensive cardiac disease. Thus, the main goal of the present work is to downregulate selectively the expression of $\alpha 1D$ -AR, to determine its contribution in cardiovascular function of Spontaneously Hypertensive Rats (SHR). To reach the objective and to test the functionality of siRNA we used reserpinized (sympathectomized) SHR in order to exacerbate sympathetic nervous system activity and inhibit central responses, later we administered 3 nM, i.v. of three sequences of siRNAm complementary to endogenous RNAm of $\alpha 1D$ -AR; then, we constructed systemic and intraventricular dose-response curves to phenylephrine (Phe; dose 0.1-310 mg/kg, i.v.) in presence and absence of RS-100329, a selective $\alpha 1A$ -AR antagonist. Previous and after the administration of siRNAs and RS-100329 we measured the cardiac function by echocardiogram. Results showed that the acute administration of siRNA diminished the maximum contraction of the response to Phe; meanwhile, RS-100329 caused a parallel shift to the right of the curves, which was greater when the mixture of siRNA and RS-100329 were administered. The response to Phe in the intraventricular curves was diminished in a similar way in presence of RS-100329, siRNA and the mixture of both. Additionally, echocardiograms showed anatomical changes in the thickness of myocardial walls and function after the administration of $\alpha 1D$ -AR siRNAm, these changes were different of that produced by the antagonism of $\alpha 1A$ -AR with RS-100329 and the mixture of both drugs. In conclusion, $\alpha 1D$ -AR are important in cardiac structure and functionality of SHR.

Audience Take Away Notes

- The relevance of $\alpha 1D$ -AR and $\alpha 1A$ -AR in cardiovascular physiology
- The importance of $\alpha 1D$ -AR as a novel therapeutic target in cardiac diseases
- The use of siRNAm as a selective tool for the downregulation of $\alpha 1D$ -AR

Biography

Dr. Jessica Rodriguez studied Chemistry at Universidad Nacional Autonoma de Mexico. She obtained a master's degree in pharmacology and a PhD in Medical Research at Instituto Politecnico Nacional in Mexico. Then, she joined to the research group of Dr. Rafael Villalobos and Dr. Itzell Gallardo-Ortiz, in Universidad Nacional Autonoma de Mexico, where they develop basic research about the activity of adrenoceptors in hypertension and heart failure models.

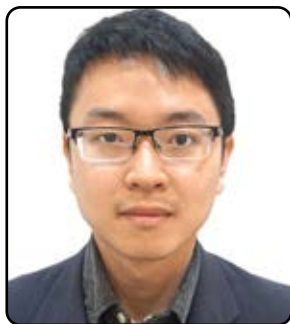


Hamza Abushuqeir*, Jouman Al Sadi, Yasmin Hayajneh, Ibrahim Ababneh, Osama Abusuailik, Hanen Batat, Mohammad Al Tamimi

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Major cardiovascular, pulmonary, and infectious causes of atrial fibrillation

Atrial Fibrillation (AF) is a common arrhythmia characterized by rapid, irregular electrical activity in the atria of the heart. It is associated with significant morbidity and mortality, and its prevalence is increasing worldwide. The major cardiac causes of AF include hypertension, heart surgeries, Sick Sinus Syndrome (SSS), and Myocardial infarction (MI). Pulmonary causes of AF include Chronic Obstructive Pulmonary Disease (COPD), pulmonary embolism, sleep apnea, and lung cancer. Infectious causes of AF include risk factors such as sepsis, inflammation, COVID-19, Human Immunodeficiency Virus (HIV), Herpes Simplex Virus (HSV), and influenza virus, also genetic predisposition plays a role in the development of AF like in congenital heart defects. Understanding the underlying etiology of AF is crucial in the management and treatment of this common arrhythmia. A comprehensive approach to AF management should involve identification and treatment of the underlying causes, and this review will expose the major causes for this arrhythmia raising the chance for further investigation and development of the best possible treatment and prevention methods for this phenomenon.

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Catastrophic antiphospholipid syndrome: A case report

Introduction: Antiphospholipid syndrome (APS) is a disorder of autoimmune system presented clinically by arterial or venous thrombosis. One of the rare and severe forms of APS is known as catastrophic APS (CAPS). The incidence of CAPS has been reported in 0.8% of patients with APS. Case reports on cardiac involvement of CAPS including microvascular thrombosis, coronary artery disease or valvular thickening or lesions are limited. Here, we are reporting a case of CAPS with cardiac manifestation associated as a result of the reversal of anticoagulation.

Case Summary: A 27-year-old lady with known primary APS presented with 4-week history of dizziness and heavy Per Vaginal (PV) bleeding. She was normally on Warfarin due to her previous history of Deep Vein Thrombosis (DVT), Pulmonary Embolism (PE) and subendocardial Myocardial Infarction (MI). Blood tests were done which showed a haemoglobin (Hb) of 67 with an international normalised ratio (INR) of 4.3. Her warfarin was withheld, and she received 10mg intravenous Vitamin K to reverse her anticoagulation. After a few hours, she developed chest pain radiating to back and left arm, without ECG changes. Her high sensitivity troponin I showed significant rise. Serial bedside Transthoracic Echocardiograms (TTEs) showed worsening ejection fraction and global hypokinesia, and a subsequent cardiovascular Magnetic Resonance Imaging (cMRI) scan confirmed multiple infarcts in all 3 coronary artery territories. A diagnosis of myocardial infarction due to catastrophic Antiphospholipid Antibody Syndrome was made. The patient was treated with Intravenous Immunoglobulin (IVIg) and Methylprednisolone, and her anticoagulation with Warfarin was reinstituted along with bridging Enoxaparin, aiming for a target INR higher than 2.5. She was subsequently transferred to a regional centre for treatment with Rituximab.

Conclusion: Reversal of anticoagulation in patient with known APS should be carried out cautiously after balancing the risks and benefits. A multidisciplinary approach should be considered. For patients with myocardial infarction secondary to CAPS, treatment with IVIg, IV plasmapheresis, and corticosteroids should be included.

Audience Take Away Notes

- To provide insight into a rare event of cardiac manifestation of CAPS following anticoagulation reversal
- To improve understanding of the CAPS, reduce the risk of similar events happening in the future, and optimise patient care
- To act as a reflective opportunity for the case

Biography

Dr. Wen Jie Chin is a medical registrar graduated from University of Aberdeen, United Kingdom in 2019. He is currently working in Cardiology Department in Walsall Manor Hospital in West Midlands, United Kingdom.



Yasir Bakhit

Oxford University Hospitals NHS Trust, United Kingdom

Sodium channelopathy with an overlap of brugada syndrome, paroxysmal atrial fibrillation, and progressive cardiac conduction system dysfunction

Background: Brugada syndrome is a rare diagnosis with a prevalence of 3 to 5 per 10,000, accounting for 4% of all sudden cardiac deaths. It can present with ventricular tachyarrhythmia and sudden cardiac deaths in structurally normal hearts, with an autosomal dominant pattern of inheritance. To diagnose it an ECG showing Brugada type 1 pattern with other clinical features is required. Different genes have been associated with disease, the commonest being voltage-gated Sodium Channel Alpha type V gene (SCN5A).

Case Summary: We present a 21-year-old man who had 2 admissions from a local prison following a successfully resuscitated cardiac arrest. AED rhythm strip confirmed an underlying VF. The diagnosis of Brugada was based on both the ECG findings and the presentation of cardiac arrest. His ECG revealed coved ST changes in V1-2 and J waves at the inferolateral QRS complexes suggestive of Brugada pattern. Overlap of progressive cardiac conduction system dysfunction on top of the significant sodium channelopathy was due to the finding of prolonged first-degree AV block with paroxysmal atrial fibrillation. A Cardiac MRI showed a structurally normal heart. Isoprenaline infusion was initiated and the amiodarone and beta-blocker therapy were stopped. Then transitioned to oral Quinidine sulphate (600mg bd) therapy with excellent effect. Inferolateral J waves disappeared and Quinidine-induced QT prolongation remained manageable. He displayed evidence of AV conduction disease with PR prolongation. A dual-chamber ICD was implanted for secondary prevention of arrhythmic death. He was then discharged back to his home, having completed his term in prison. Home monitor did not transmit any issues with his ICD, and his ICD checks were satisfactory. ICC clinic follow-up happened four months post-discharge, patient had no further events and remained asymptomatic. His ECG showed considerable improvement, PR interval was down to 200ms with a hint of type 1 Brugada-pattern in lead V1.

Conclusion: Reaching to a correct diagnosis and consulting the appropriate experts led to best possible outcome for the patient by having an Implantable Cardioverter Defibrillator (ICD) implanted, therefore preventing sudden cardiac deaths.

18-19 **SEPT**

DAY 02

POSTERS

4TH EDITION OF
**CARDIOLOGY
WORLD CONFERENCE**



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Effectiveness and safety of sacubitril/valsartan in Indian patients with heart failure in the real-world setting

Introduction: Sacubitril/valsartan is one of the pillars of the fantastic four and has been established as an effective treatment for Heart Failure (HF) with reduced ejection fraction based on clinical trial data; however, little is known about its use or impact in real-world practice in Indian population.

Methods: This retrospective study was conducted on adult patients newly diagnosed with HF (class I-III, as per physician discretion) and treated with sacubitril/valsartan (Tab. Sacuval, Alkem Laboratories Ltd) between Feb - April 2023 in respective doses for at least 3 months. The captured data included demographic profile, Blood Pressure (BP), eGFR and comorbidities. Moreover, changes in Left Ventricular Ejection Fraction (LVEF), NT-ProBNP levels, clinical symptoms (assessed on scale of 1-10, 10 being with highest severity) were evaluated post treatment with Sacubitril/valsartan in real world settings.

Results: Out of 60 patients eligible for the study, 57% were males and 43% were females. Mean body weight was 60.26±7.00 kg, while mean BP was 130/81 mmHg. 60% patients were having both type 2 diabetes and hypertension as comorbidity. There was 23% improvement in LVEF (from mean LVEF of 34 to 42, P<0.05), with significant decrease in NT-ProBNP levels (mean 1220.5 pg/ml to 118.1 pg/ml, P<0.001) after treatment with sacubitril/valsartan for 3 months, resulted in marked improvement in clinical symptoms of breathlessness (mean score decreased from 6 to 2, p<0.05), edema (mean score decreased from 5.5 to 1.8, p<0.05) and palpitations (mean score decreased from 2.4 to 1.1, p<0.05). Furthermore, modest decrease in mean BP was also noted (from 130/81 mmHg to 119/76 mmHg. 50 mg BD was most commonly used dose of sacubitril/valsartan (70% patients), followed by 100 mg BD (25% patients). Treatment with sacubitril/valsartan was well tolerated, with <5% patients reporting hypotension.

Conclusion: The findings of this real-world study suggest sacubitril/valsartan was associated with increase in ejection fraction translating into symptomatic improvement in Indian patients of HF. Sacubitril/valsartan will continue to be of great value in clinician's armamentarium in holistic HF management.

Audience Take Away Notes

- To the best of our knowledge, this is the first study elucidating the effectiveness and safety of sacubitril/valsartan in patients, post patent expiry with availability of good quality generics at affordable cost
- Sacubitril/valsartan revolutionized the HF management with significant improvement in ejection fraction translating into improvement in clinical symptoms
- Contrary to western counterparts, Indian population has low SBP, low BMI, thus the dose of sacubitril/valsartan is the key to minimize chance of hypotension. We found that, 50 mg BD of sacubitril/valsartan is the most suitable dose for Indian population with good tolerability profile

Biography

Dr. Mayur Mayabhate studied his MD from Indira Gandhi Govt. Medical College Nagpur India. He is currently heading the Medical Affairs Dept at Alkem Laboratories Mumbai, with more than a decade of experience under him in clinical research.



Alexander Suchodolski^{1*}, Jan Głowacki^{2,3}, Mariola Szulik^{2,4}

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Anomalous origin of left circumflex artery from right sinus of valsalva in cardiac computed tomography in a group of 16680 patients - radiologic and clinical characteristics

This presentation summarizes the clinical and radiological characteristics of patients with an anomalous origin of the left circumflex artery from the right sinus of Valsalva (RCx), diagnosed by cardiac Computed Tomography (CT). This anomaly is a rare type of Anomalous Aortic Origin of a Coronary Artery (AAOCA), and limited data is available on its natural course, effects on myocardial function, and symptoms. The study included 56 cases of RCx from 16,680 CT exams performed in a heart imaging department between 2015 and 2022 (0,33%). The results show that Type I RCx was the most common type of anomaly, occurring in 48% of the patients, followed by Type 2 (25%) and Type 3 (27%). All patients had a "benign" course of the anomalous artery, and the shape of the Cx ostia was predominantly round. The study population consisted of 30 male (54%) and 26 female (46%) patients, and 23% of them had Coronary Heart Disease (CHD). Dyslipidaemia was the most common atherosclerotic risk factor, affecting 30% of the patients, followed by obesity (11%) and type 2 diabetes (13%). Heart failure occurred in 14% of the patients, while atrial fibrillation was diagnosed in 13%. The study findings provide valuable information on the clinical significance of this anomaly and can guide clinical decision-making for affected patients. This is the first study to address this type of lesion in such detail, and the results demonstrate the usefulness of CT imaging in identifying and characterizing this rare anomaly. The authors highlight the need for more research to understand the natural course of RCx and its effect on myocardial function and symptoms, as well as to develop optimal management strategies for affected patients.

Audience Take Away Notes

- The prevalence of this lesion was 0.33%, which is a relatively low occurrence rate. However, it is still necessary to consider this condition during clinical reasoning
- Type I RCx was the most common type of anomaly, occurring in 48% of the patients
- All RCx anomalies had a "benign" course, meaning that they did not cause significant harm or danger to the patients
- Heart failure occurred in only 14% of the patients, indicating that there is no apparent correlation between RCx anomalies and heart failure
- The preferred method for assessing this type of lesion is CCTA (Coronary Computed Tomography Angiography) as it provides a three-dimensional visualization

Biography

Alexander Suchodolski graduated from Silesian Medical University in 2019 and now works at the Silesian Center for Heart Disease. His primary research interest is in cardiac imaging, specifically Computed Tomography (CT), Magnetic Resonance (MR), and echocardiography. He is currently pursuing his PhD on the topic of coronary anomalies in adults under the guidance of Mariola Szulik and Jan Głowacki at the Silesian Medical University. He is an active member of various medical societies, demonstrating his dedication to staying up-to-date with the latest developments in his field.

**Sanya Ahmed**

SUNY Downstate College of Medicine, Brooklyn, NY, United States of America

The efficacy of novel intravascular lithotripsy in the treatment of coronary artery stenosis with calcified lesions: A systematic review

Purpose: High levels of coronary artery stenosis (>50%) increases the risk for ischemic heart disease, the leading cause of death worldwide. A novel procedure called Intravascular Lithotripsy (IVL) can reduce the levels of coronary artery stenosis by disrupting calcified plaques and improving the success of subsequent stent placement.

Methods: Patients included adults ≥ 18 years old with stenosis in one or more coronary arteries of greater than 50% with evidence of cardiac ischemia and calcified lesions who were eligible for Percutaneous Coronary Intervention (PCI) and underwent IVL using the Shockwave Medical Coronary IVL System. Data was obtained from four disrupt CAD studies, comprising 627 total patients. Statistical analysis was conducted using Microsoft Excel.

Results: 672 patients were analyzed who underwent an IVL procedure followed by stent placement. 94.5% (593) of patients had procedural success of stent delivery with residual in-stent stenosis of <50%, and 74.7% (468) of patients with residual stenosis of <30%. 93% (583) of patients did not have any major adverse cardiac events within thirty days post-procedure. Adverse effects included 5.7% (36) cases of myocardial infarction within thirty days post-procedure, and 0.5% cases of cardiac death.

Conclusion: IVL is an effective procedure to facilitate stenting in coronary arteries with calcification and occlusion >50%. The procedural success rate based on novel studies is high and there are few adverse complications, suggesting favorable clinical results which may be further explored in future studies.

Audience Take Away Notes

- The audience will learn about a novel, FDA approved technique to improve outcomes in patients who they may consider for the procedure
- Knowledge of this novel technique will not only facilitate improvements to clinical care of patients but also further scientific inquiry about methods to treat coronary artery calcification
- The results of this systematic review highlight the potential for further development of intravascular lithotripsy for the treatment of coronary artery stenosis among attendees
- The results of this systematic review suggest exploration of the utility of lithotripsy for the treatment of other diseases

Biography

Sanya is a third year medical student at the SUNY Downstate College of Medicine. She is an avid volunteer and community advocate with the Anne Kastor Brooklyn Free Clinic (BFC), a student- run free clinic associated with the SUNY Downstate Medical Center. As a member of the Continuous Quality Improvement team at the BFC, Sanya is constantly finding ways to better the patient experience, promote health equity, and explore methods for improved patient care.



Jenakan J Dev

Department of Medicine, Health First Cape Canaveral Hospital, United States of America

Autonomic dysfunction resulting in Inappropriate Sinus Tachycardia (IST) after Roux-en-Y gastric bypass

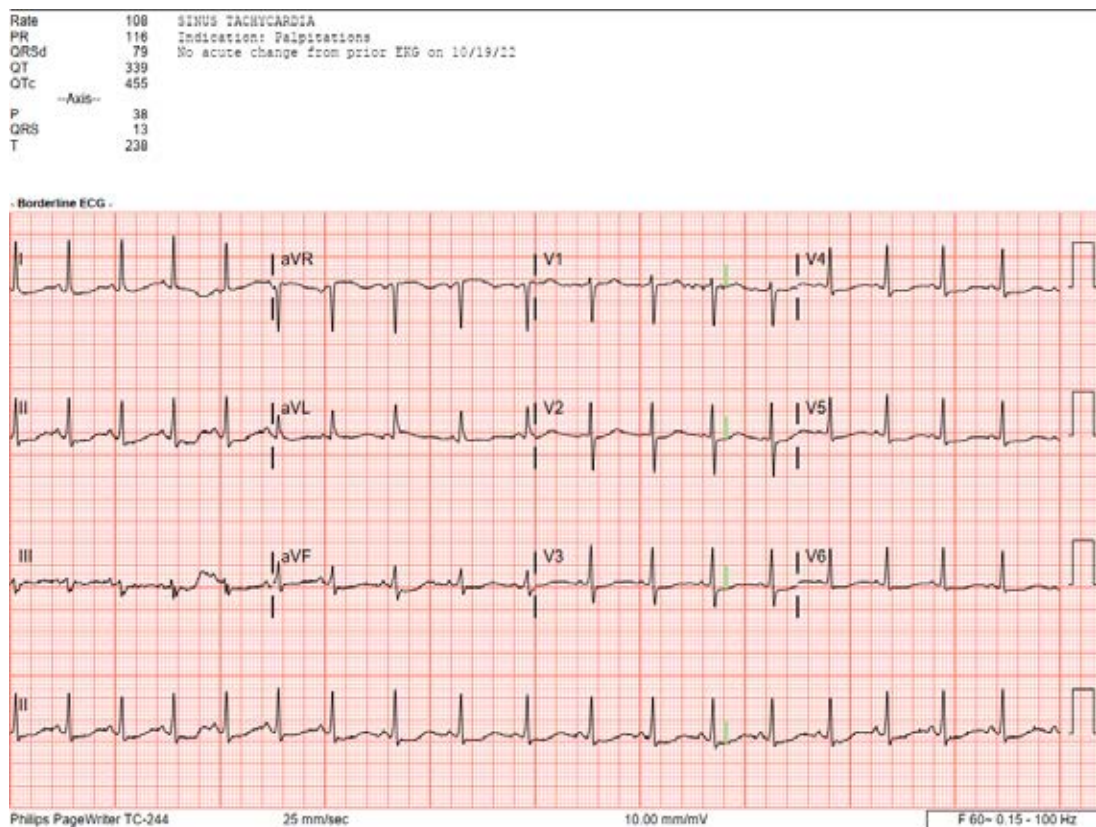
Introduction: A 27 year old female with a history of Roux-en-Y gastric bypass, complicated by gastrojejunal anastomotic stricture resulting in Wernicke's encephalopathy due to thiamine deficiency was admitted to our service for persistent tachycardia, palpitations, symptomatic orthostatic hypotension, dizziness and shortness of breath at rest. She had no history of cardiac disease or cardiac arrhythmia prior to her surgery. Her resting heart rate was 138. Since the surgery, she lost around 130 lbs within a span of 7 months. Her tachycardia worsened with activity. Initial ECG showed a borderline shortened PR interval of 116ms with questionable delta wave concerning for WPW (Wolff-Parkinson-White (WPW) syndrome) (Figure 1).

After a careful EP evaluation, WPW was ruled out. Her rhythm was determined as Sinus tachycardia with borderline shortened PR interval. Her 2D Echo showed normal LVEF of 60-65% with mild mitral and tricuspid regurgitation. Her condition was thought to have been initiated by rapid profound weight loss causing autonomic dysfunction resulting in IST/POTS (Inappropriate Sinus Tachycardia/ Postural orthostatic tachycardia syndrome). She also developed severe new-onset peripheral neuropathy post-surgery and underwent a complete neurological workup that included a lumbar puncture which ruled out autoimmune/post-infectious neuropathy. Her Multiple sclerosis panel, copper level, VDRL & Oligoclonal bands were all normal.

We started her on metoprolol 12.5 BID, flonase 0.2mg QD, midodrine 10mg QID, Ivabradine 7.5mg BID and Propranolol 10mg TID providing good symptom relief. She underwent aggressive physical therapy and was placed on supplemental Folic acid and thiamine as well.

Autonomic dysfunction is quite common after bariatric surgery. It occurs more frequently after gastric bypass surgery. Profound rapid weight loss is believed to be a contributing factor. This patient had a complication with her gastric bypass surgery that required several dilations of her jejunum in the past which further worsened her vitamin deficiencies. It is important to discuss cardiac side effects with candidates interested in gastric bypass surgery.

Figure 1



Audience Take Away Notes

- Autonomic dysfunction caused from profound rapid weight loss after bariatric surgery
- Cardiac comorbidities to be considered before rapid weight loss surgery
- Educate patients for signs and symptoms for IST/POTS after rapid profound weight loss
- Resting tachycardia in a patient must be evaluated thoroughly, especially after weight loss surgery

Biography

Jenakan Dev is an aspiring Cardiologist. He currently works as a full-time hospitalist physician at Health First Cape Canaveral Hospital. He completed his Internal Medicine residency in 2021 at Cleveland Clinic Florida, USA.

**Nacole Riccaboni**

Heart Failure Nurse Practitioner, Orlando Health Heart & Vascular Institute,
Orlando, Florida, United States of America

Outpatient intravenous diuretic clinic use in heart failure

One million hospital admissions annually in the United States (US) are due to heart failure, with heart failure being the principal cause of 30-day readmissions. The major health problem with individuals diagnosed with heart failure is its high incidents of hospitalizations and readmissions. There is limited data available regarding the use of ambulatory intravenous diuretic clinics. Since heart failure-related hospitalizations are typically due to worsening congestion, loops diuretics are the mainstay of therapy in 90% of heart failure hospitalizations. Intravenous diuretic clinics thus an alternative for management of patients with heart failure. Hospitalization due to symptom presentation was thought to be imminent in more than one-half of patients referred to an intravenous diuretic clinic. With the use of intravenous diuretic clinic therapy, rates of 30- to 60- day hospitalizations were significantly lower after treatment.

Audience Take Away Notes

- Implications of diuretic use
- How intravenous diuretics differ from oral diuretics
- Potential impact of outpatient intravenous diuretic clinic use

Biography

Nacole Riccaboni is a heart failure nurse practitioner for Orlando Health Medical Group. She received my BSN from the Advent University of Health Sciences, then obtained my MSN from the University of South Alabama. She have an MBA from Capella University and am working on my doctorate degree at the University of Central Florida (in Executive Nursing Leadership). She have 10+ years of experience of critical care.



Jenakan J Dev

Department of Medicine, Health First Cape Canaveral Hospital, United States of America

Hydrochlorothiazide induced acute on chronic pancreatitis

A 75-year-old male with hypertension and GERD, who was a lifelong non-smoker, and consumes very little alcohol presented to our service with acute epigastric pain. He complained of intermittent mild nausea for the past 6 months. CT scan of the abdomen & pelvis showed acute pancreatitis with pancreatic parenchymal atrophy and few calcifications without necrosis (Figure 1). All these findings were new to the patient. His gallbladder was laparoscopically removed 19 years ago. He was started on lisinopril/hydrochlorothiazide by his cardiologist about a year ago and the dosage was increased 10 days prior arriving to our hospital. He did not disclose his chronic nausea to his cardiologist during follow-up appointments. His initial lipase was 69, LFTs and alkaline phosphatase were normal, and triglyceride was 127. His blood ethanol level was <10. MRCP showed normal pancreatic duct and Common Bile Duct (CBD). Ultrasound of the abdomen showed a 7 mm CBD with no sonographic Murphy's sign, stones, or evidence of biliary ductal involvement. His ranson criteria on admission was 2 (Age >55 & WBC > 16K) and 48 hours later it was 3 (Age, WBC >16K, Fluids needed >6L in 48h). He had persistent leukocytosis that was treated with Zosyn. The Lisinopril/HCTZ was discontinued, and his condition slowly improved in the next 48 hours. His Lipase did not worsen, and his amylase & LFT levels stayed within the normal range during the entire course of the admission. His blood pressure was maintained well on Carvedilol, and he was discharged three days later after aggressive fluid hydration and tolerating a low-fat diet.

Pancreatitis is a morbid condition with a mortality rate up to 55%. Common causes are gallstone, elevated triglycerides or alcohol induced. This patient had mild, nonspecific symptoms for over 6 months which we suspect was from ongoing pancreatitis. By the time he came to our institution, he had developed an acute exacerbation of his chronic pancreatitis. His labs did not show significantly elevated Lipase. An important thing to note that drug induced pancreatitis can manifest in many forms which can include overt image/lab findings and/or subtle image/lab findings. In our case the imaging studies showed clear inflammation of the pancreas whereas the lab work showed only mild inflammation with an elevated lipase of 70, the lab cutoff at our institution was 60.

HCTZ has known to cause pancreatitis which has been documented as early as 1959. There are no published reports of Lisinopril causing pancreatitis. There are multiple theories explaining this including pancreatic duct constriction, drug induced hypercalcemia/hypertriglyceridemia and many other unknown forms of cytotoxic and metabolic effects which are not clearly understood. Since HCTZ is a common anti-hypertensive drug, clinicians must have a strong suspicion for uncommon side effects when patients are presenting with nonspecific GI symptoms while being on the drug.

Figure 1:



CT of the abdomen and pelvis with IV contrast showing acute pancreatic inflammation (Yellow arrow) with chronic pancreatitis induced calcification (White arrow).

Audience Take Away Notes

- Understanding hydrochlorothiazide can be a rare cause for pancreatitis
- Learn that pancreatitis from hydrochlorothiazide can manifest in multiple ways
- Learn and identify subtle symptoms of pancreatitis on patients who are on hydrochlorothiazide
- Explain the symptoms of pancreatitis to patients who are scheduled to be started on hydrochlorothiazide

Biography

Jenakan Dev is an aspiring Cardiologist. He currently works as a full-time hospitalist physician at Health First Cape Canaveral Hospital. He completed his Internal Medicine residency in 2021 at Cleveland Clinic Florida, USA.



Sumit Khurana*, Sriram Padmnabhan

Department of Internal Medicine, MedStar Franklin Square Hospital, Baltimore, Maryland, United States of America

A case of sporadic pulmonary AVM

Pulmonary Arteriovenous Malformations (PAVM's) are structurally abnormal vascular communications between pulmonary arteries and veins that range in size and complexity and contribute to an anatomic right-to-left shunt. They can present with varied symptoms including dyspnea, hemoptysis and rarely cryptogenic strokes and TIA. Paradoxical embolization is the likely pathophysiology for cerebrovascular accidents associated with PAVM, and the risk increases with age, number, and size of feeding pulmonary arteries. Contrast echocardiography is the preferred initial test in suspected right to left shunts and forms part of the evaluation of cryptogenic strokes/TIA. It is possible to differentiate intracardiac and intrapulmonary shunts based on the number of cardiac cycles it takes for microbubbles to appear in the left ventricle, although CT of the chest is advisable in case of indeterminate bubble studies and in high-grade shunts. Further, treatment of symptomatic PAVM's is indicated with embolotherapy, regardless of the feeding artery diameter. In asymptomatic cases, a feeding artery diameter >3mm is an indication for embolization, considering the increased risk of complications. Serial contrast-enhanced computed tomography is used for follow-up to look for recanalization or the development of new feeding vessels. We highlight a case of a 66 year old female who presented with TIA and was subsequently found to have an isolated PAVM which was managed with embolotherapy and followed up for recanalization with contrast imaging.

Audience Take Away Notes

- The audience will understand the importance of considering extracardiac shunts as possible etiologies of paradoxical embolism
- This will help teach providers about the rarer unexplained causes of cryptogenic stroke and the importance of early diagnosis and intervention
- This will help residents and fellows have broad differentials and assist in better interpretation of imaging and diagnostic findings

Biography

Dr. Sumit khurana studied MBBS (Bachelor of medicine and bachelor of surgery) at Armed forces medical college and graduated in 2014. He then joined the internal medicine residency program at MedStar Health Baltimore and is currently actively pursuing research in the field of cardiovascular medicine.



Christopher Chaftari, Kunal Jain, Duncan Salmon, Ronald Sperry*, John S Wilson

Texas A&M School of Engineering Medicine, Houston, TX, United States of America

Digital stethoscopes attachment for longitudinal auscultation analysis

Introduction/Background: Digital stethoscopes enhance the diagnostic power of auscultation through noise cancellation, waveform analysis, telehealth integration, and collaborative potential. Unfortunately, current products lack a cost-effective solution for synchronized listening for large care teams in both clinical and educational settings due to computing costs and degraded sound quality. In addition, current technologies isolate acquired information to the device and user, which prevents long term utilization for chronically progressing diseases. To address this need, we introduce a WebRTC and P2P (Peer-to-Peer) digital attachment for common stethoscopes with efficient broadcasting functionality for up to fifty simultaneous users and potential EHR integration capabilities.

Methods/Approach: The device's hardware consists of a modified MEMS microphone that attaches to any commercially available stethoscope. A bluetooth module transmits the auscultatory sounds to a primary user's mobile device for broadcasting. The software uses WebRTC, a real-time communication protocol, and a Signaling server hosted by Google Firebase to initiate a connection between all team members. Auscultatory data can be directly transmitted for simultaneous listening using a P2P scheme and/or recorded and stored securely on the primary user's device for documentation and further processing. A P2P scheme does not store auscultation data on a remote computer or server, thereby minimizing HIPAA complexity. An IOS application integrates the system into one intuitive interface.

Results/Data: After constructing a working prototype, the apparatus was tested in a simulated environment and auscultatory sounds were successfully transmitted to twenty simultaneous independent users. Loss in quality due to compression was negligible and transmission latency did not exceed one second.

Conclusions: Preliminary tests demonstrated the potential of our prototype to improve care by allowing large teams to listen simultaneously to an auscultatory exam without compromising sound quality or latency. This device has significant potential for use in training environments, where students or residents can connect and listen to an instructor's stream during a physical exam in-person, remotely, or on a recording. Future steps include data security testing, integration of auscultatory data with an EMR system, testing in a clinical setting, and creation and deployment of a downloadable app.

Audience Take Away Notes

- Over the last century, the stethoscope has become a victim of modern technologies such as EKG's, Echo's and CT scans which have caused the art of auscultation to dwindle into a dying practice. The release of modern electronic stethoscopes have combated this decline to an extent, but they are expensive and the information they gather remains static and difficult to compare between visits due to a lack of long term storage and analysis tools. In addition, they can be expensive which is a deterrent to implementation
- This device will allow for information to be collected and stored with the patient's EHR for long term analysis. It will also cut costs for the user by allowing medical personnel to use their own stethoscopes rather than buy an expensive digital stethoscope which is a barrier to entry for the implementation of advanced stethoscope technologies

- This device will double down on the importance of yearly wellness visits with your family practice physician by reinstating and amplifying the usefulness of the stethoscopic exam. This will enable the physician to track the progression of long term diseases more effectively
- Additionally, this type of technology makes transmission to the patient or other parties for teaching purposes very simple, and such utilization could serve as a viable entry point for an introduction to point-of-care usage

Biography

Ronald Sperry was born in Salt Lake City, Utah and is enrolled in Texas A&M's ENMED program (MD/MENG), which combines medical and engineering principles to create Physician Innovators. He holds a Bachelors in Mechanical Engineering from BYU, and during his time as an undergraduate, he worked in a molecular engineering research lab where he published novel approaches to the treatment of Type II Diabetes. He also worked in a biomedical engineering research lab that worked on developing compliant-mechanism-based devices for non-invasive spinal fusion surgeries. His goal is to develop devices that make healthcare more accessible to underserved populations.

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*"We wish to meet you again at our
upcoming events next year..."*

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